AN ATTEMPT

AT A SYSTEMATICALLY ARRANGED

THEORY OF MUSICAL COMPOSITION,

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UNION FOR THE PROMOTION OF MUSIC, ETC., ETC.

TRANSLATED FROM THE THIRD, ENLARGED AND IMPROVED

GERMAN EDITION, WITH NOTES,

BY JAMES F. WARNER.

SECOND EDITION.

BOSTON:
J. H. WILKINS & R. B. CARTER.
1842.

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W374
A8
1842
v.1

Entered, according to Act of Congress, in the year 1841,
By HICKLING & CARTER,
in the Clerk's Office of the District Court of Massachusetts.

From the Music School

STEREOTYPED BY
GEO. A. & J. CURTIS,
NEW-ENGLAND TYPE AND STEREOTYPE FOUNDRY.

CONTENTS.

PART FIRST.

GENERAL MUSICAL INSTRUCTION.

CHAPTER I.

IDEA OF MUSICAL SOUND, OF THE MUSICAL ART, AND OF MUSICAL COMPOSITION.

PAGES
§§ I—XI, ... 9—24
Division I. *Musical Sound*, §§ I—V, ... 9—17
Division II. *The Musical Art,—Musical Composition,* } §§ VI—XI, . . . 18—24

CHAPTER II.

DESCRIPTION OF OUR SYSTEM OF TONES.

§§ XII—XLVI, ... 25—67
Division I. *Range and gradations of Tones in general*, §§ XII—XIII, ... 25—27
Division II. *Names of the Tones*, §§ XIV—XX, ... 27—33
Division III. *Equivocalness of the Tones*, § XXI, ... 34—35
Division IV. *Manner of writing the Tones in their different pitches*, §§ XXII—XXXI, ... 36—51
  (A.) Note-lines or staff, § XXII, . . . 36—39
  (B.) Clefs, §§ XXIII—XXIV, ... 39—46
  (C.) Transposition and neutralization signs, or sharps, flats, and naturals, §§ XXV—XXX, 46—50
  (D.) Thorough-base, § XXXI, ... 50—51
Division V. *Intervals*, §§ XXXII—XLVI, ... 51—67
  (A.) Idea of intervals, § XXXII, . . . 51—52
  (B.) Numerical names, §§ XXXIII—XXXIV, 52—53
  (C.) Accessory names, §§ XXXV—XXXIX, 53—61
    (1.) Small and large, § XXXVI, . . . 53—57
    (2.) Diminished and superfluous, §§ XXXVII—XXXVIII, ... 57—60
    (3.) Doubly diminished and doubly superfluous, § XXXIX, ... 60—61
  (D.) Signs for the intervals, § XL, . . . 61

PAGES
(E.) Ambiguousness of the intervals, § XLI, 61—62
(F.) Inversion of the intervals, §§ XLII—XLV, 62—65
(G.) General view of the intervals, § XLVI, 65—67

CHAPTER III.

RHYTHMICS.—MEASURE OF TIME.

§§ XLVII—C, ... 68—120
Division I. *Idea of Rhythm and Measure*, § XLVII, . . 68—69
Division II. *Manner of marking the time or length of tones*, §§ XLVIII—LI, ... 69—73
  (A.) Value or duration of notes and rests, §§ XLVIII—L, ... 69—73
  (B.) Designation of time, § LI, ... 73—78
Division III. *Divisions of the measure*, §§ LII—LXV, . . 78—89
  (A.) Varieties of even measure, §§ LV—LVII, 79—81
    (1.) Two-half measure, § LV, . . 79—80
    (2.) Two-quarter measure, two-eighth measure, two-sixteenth measure, § LVI, . . 80
    (3.) Large alla-breve measure, § LVII, . 81
  (B.) Varieties of uneven measure, § LVIII, 81—82
  (C.) Subordiate divisions of the measure, *i. e.* divisions of the parts of the measure, §§ LIX—LXII, ... 82—88
  (D.) Remarks on the various species of measure thus far mentioned, §§ LXIII—LXV, 88—89
Division IV. *Accent*, §§ LXVI—LXVII, ... 89—91
Division V. *Higher rhythm*, §§ LXVIII—LXX, . . . 92—94
  (A.) Idea of higher rhythm, §§ LXVIII, LXIX, 92—93
  (B.) Different species of higher rhythm, § LXX, 94
Division VI. *Varieties of Compound Measure*, §§ LXXI—LXXXIII, 94—104
  (A.) Even compounds of even measure, § LXXIV, 96—97
  (B.) Even compounds of uneven measure, §§ LXXV—LXXVI, . . . 97—99
  (C.) Uneven compounds of even measure, § LXXVII, ... 99—100
  (D.) Uneven compounds of uneven measure, § LXXVIII, ... 100—101
  (E.) Species of measure doubly, trebly, &c. compounded, § LXXIX, ... 101
  (F.) General remarks in relation to compound measure, §§ LXXX—LXXXIII, . 101—104

PAGES
Division VII. *Five-fold measure, and other similar combinations*, §§ LXXXIV—LXXXVII, ... 104—108
Division VIII. *Up-beat and Down-beat*, § LXXXVIII, . . . 108—109
Division IX. *Musical sounds considered in connection with rhythm*, §§ LXXXIX—XCIX, ... 109—119
  (A.) Rhythmical delineation or structure of musical sets or passages, §§ LXXXIX—XCIII, 109—113
  (B.) Individual musical sounds considered in relation to rhythm, §§ XCIV—XCIX, . 113—119
    (1.) Rhythmical displacement or inversion, § XCIV—XCV, ... 113—115
    (2.) Syncope, §§ XCVI—XCIX, . . . 115—119
Division X. *Violations of rhythm, or interruptions of rhythmical uniformity*, § C, ... 119—120

PART SECOND.

THEORY.

CHAPTER I.

SINGLE SERIES OF TONES CONSIDERED AS SUCH.

§§ 1—46, ... 121—163
Division I. *Voices*, §§ 1—33, ... 121—153
  (A.) Idea of voices, and of their progression and carriage, §§ 1—2, ... 121—124
  (B.) One-voiced and several-voiced composition, § 3, ... 124—127
  (C.) Division and species of voices, §§ 4—14, 127—134
    (1.) Upper and under, outer and middle voices, §§ 4—7, ... 127—130
      (a.) Idea, § 4, ... 127
      (b.) Concurrence and crossing of voices, § 5, . 128
      (c.) Equivocalness, § 6, ... 129
      (d.) Difference of outer and middle voices, § 7, 130
    (2.) Principal and accessory voices, §§ 8—101, 30—131
    (3.) Singing and instrumental voices, §§ 11—14, ... 132—134
  (D.) Numbering of voices, §§ 15—27, . 134—148
    (1.) Proper idea of a plurality of voices, §§ 15—17, ... 134—138
    (2.) More restricted and more extended meaning of "plurality of voices," §§ 18—20, 138—139

PAGES
(3.) Plurality of voices by fragments, §§ 21—27, ... 139—148
(a.) Idea,—Species, §§ 21—24, . . . 139—146
(b.) Equivocalness, §§ 25—27, . . . 146—148
(E.) Characteristic difference of a composition with many or with few voices, §§ 28—32, 148—152
(F.) The score, § 33, ... 152—153

DIVISION II. *Movement of voices*, §§ 34—46, ... 153—163
(A.) Movement of a voice considered by itself, §§ 34—42, ... 153—159
(1.) Slow and quick movement, § 34, . 153—155
(2.) Rhythmically interrupted movement, § 35, 155
(3.) Syncopated movement, § 36, ... 155
(4.) Connected and separated movement, § 37, 155—156
(5.) Gliding, bound, detached, and chopped movement, § 38, ... 156—157
(6.) Ascending and descending movement, § 39, 157
(7.) Skipping and gradual, diatonic, chromatic and enharmonic movement, §§ 40—42, 157—159
(a.) Idea and species, §§ 40—41, . . 157—158
(b.) Comparative merits of gradual and skipping movements, § 42, ... 159
(B.) Movement of a voice considered in relation to that of other voices, §§ 43—46, . 159—163
(1.) Like and unlike movement, § 43, . 159—160
(2.) Direct, contrary and oblique movement, §§ 44—46, ... 160—163
(a.) Idea, § 44, ... 160
(b.) Subordinate species, § 45, . . . 161—162
(c.) Characteristic difference, § 46, . . 162—163

CHAPTER II.

HARMONY.

§§ 47—118, ... 164—253
DIVISION I. *Of harmonic combinations in general*, §§ 47—48, . 164—165
(A.) Idea, § 47, ... 164—165
(B.) Breaking of a voice, § 48, ... 165

DIVISION II. *Fundamental harmonies*, §§ 49—53, ... 165—172
(A.) Idea, § 49, ... 165
(B.) Enumeration, §§ 50—51, ... 166—171
(C.) Designation, § 52, ... 171—172
(D.) Exercises, § 53, ... 172

PAGES
Division III. *Transformation*, §§ 54—99, ... 173—227
(A.) Transformation of position, §§ 55—69, . . 173—190
(1.) Transposition in general, § 55, . . 173—175
(2.) Inversion, §§ 56—65,. . . . . . 175—187
(a.) First inversion, § 60, ... 178
(b.) Second " § 61, ... 178
(c.) Third " § 62, ... 179
(d.) Exercises, § 63, ... 179—180
(e.) Equivocalness of distance from the base tone, § 63bis.—63ter. . . . 181—183
(f.) Permutations or positions, § 63quater, 183—184
(g.) Respective merits of the inverted and the uninverted position of a chord, § 64, 184—185
(h.) Usual names of the inverted chords, § 65, 185—187
(3.) Close and dispersed position, §§ 66—69, 187—189
(B.) Doubling, § 70, ... 190—192
(C.) Omission, §§ 71—75, ... 192—194
(D.) Tones foreign to the harmony, §§ 76—99, 195—227
(1.) Independent ninth, §§ 77—88, . . . 195—210
(a.) Large, §§ 80—82, ... 198—200
(b.) Small, §§ 83—88, ... 200—210
(2.) Elevation and depression of an interval, §§ 89—95, ... 210—220
(3.) Transitions, §§ 96—98, ... 220—222
(4.) Other tones foreign to the harmony, § 99 222—227

Division IV. *View of the equivocalnesses arising from the transformations of the fundamental harmonies*, § 100, ... 227—229
(A.) Simply harmonic equivocalness, § 100, . 227—228
(B.) Enharmonic " " § 100, . 229

Division V. *Consonances and dissonances*, §§ 101—103,. . 230—238

Division VI. *Preparation*, §§ 104—118, ... 238—253
(A.) Preparation in general, § 104, ... 238—239
(B.) Tones requiring preparation, §§ 105—107, 239—243
(1.) Many sevenths require preparation, § 105, ... 239—240
(2.) Many tones foreign to the harmony, § 106, 240—241
(C.) Perfect and imperfect preparation, §§ 108—118, ... 241—253
(1.) Manner of preparing the sevenths, §§ 109—117, ... 243—253

PAGES
(a.) Preparation in the same pitch of tones, § 109, ... 243
(b.) In the same voice or part, § 110, . . . 244
(c.) Tied preparation, § 111, ... 244—245
(d.) Preparation continued duly long, § 112, . 245
(e.) Preparation by means of a harmonic tone, § 113,. . . . . 245—246
(f.) Preparation on a light part of the measure, §§ 114—117, ... 246—253
(2.) Mode of preparing tones that are foreign to the harmony, § 118,. . . . 253

CHAPTER III.

KEYS.

§§ 119—183, ... 254—327

Division I. *Idea,* §§ 119—120,. . . . . . . 254—258

Division II. *Mode of designation,* § 121, ...

Division III. *Essential harmonies of the Key,* §§ 122—126, . 259—261

Division IV. *Scales,* §§ 127—145, ... 262—284
- (A.) Large normal scale, §§ 129—130, . . 263—264
- (B.) Small normal scale, §§ 131, ... 264—268
- (C.) Transposed large scales, §§ 132—137, . 269—274
- (D.) Transposed small scales, §§ 138—140, . 274—275
- (E.) Characteristic note, § 140* and 140** . . 275—280
- (F.) Chromatic signature, §§ 141—145 . . 280—284

Division V. *Appropriate harmonies of a Key,* §§ 146—160, . 284—309
- (A.) Enumeration of these, §§ 146—150, . . 284—288
- (B.) Mode of designation, §§ 151—153, . . 288—290
- (C.) View of the appropriate harmonies of each Key, § 154, ... 291
- (D.) Equivocalness of situation, § 155, . . 291—295
- (E.) Limits to this equivocalness, §§ 156—158, 303—305
- (F.) Comparative view of the two principal species of harmonic equivocalness thus far considered, §§ 159—160, . . . 306—309

PAGES

Division VI. *Relationship of Keys*, §§ 161—180, . . . 309—320

(A.) Nearest relatives of large keys, §§ 162—168, 309—313

(B.) " " small keys, §§ 169—175, 313—316

(C.) Relatives of the large keys in the second degree, §§ 176—177, ... 316—318

(D.) " of the small ,, § 178, ... 318—319

(E.) More remote relationships, § 179, . . 319—320

(F.) Table of relationships, § 180, . . . 320

Division VII. *Characteristics of the Keys*, §§ 181—183, . . 321—327

(A.) Temperament, § 182, A, ... 322—325

(B.) Character of sound, § 182, B, . . . 325—327

CHAPTER IV.

MODULATION.

§§ 184—225, ... 328—406

Division I. *Idea*, § 184, ... 328

Division II. Modulation in the scale, and modulation out of the scale, §§ 185—189, ... 328—335

(A.) Entire and partial modulation, § 186, . . 329—330

(B.) Leading chord and leading tone, § 187, . 330—333

(C.) Digressive modulation into various intervals, § 188,. . . . . 333—334

(D.) Characteristic difference of modulation in the scale and modulation out of the scale, and the respective merits of each, § 189, . 334—335

Division III. *Attunement of the ear to a Key*, §§ 190—225, . 336—406

(A.) First attunement, § 191, ... 336

(B.) Continued attunement, and re-attunement, §§ 192—217, ... 337—368

(1.) Principle of inertia, § 192—196, . . 337—342

(a.) The ear spontaneously takes any combination of tones which belongs to the scale, *as* belonging to the scale, § 193, . . 337—338

PAGES

(b.) The ear assumes any combination of tones that is foreign to the scale, to be as nearly related to it as possible, §§ 194—196, 339—342

(2.) Stronger reasons, which overcome the principle of inertia, §§ 197—217, . . 342—368

(a.) Particular characteristics of an occurring combination of tones, §§ 198—201, . 342—345

(*I.) V^7 with large ninth, § 199, . . 343—344

(*II.) V^7 with small ninth, §§ 200—201, . 344—345

(*III.) $°\mathrm{II}^7$ with elevated third, § 202, . 346—347

(*IV.) Transition tones, § 203, . . . 347

(b.) Habits of the ear, §§ 204—217, . . 347—368

(*I.) New commencement, § 205,. . . 348—349

(*II.) Position of an occurring harmony, §§ 206—208, ... 349—356

(*A.) Positions particularly well known, § 207, ... 349—353

(*1.) Fourth-sixth position.

(*2.) Other well known forms.

(*B.) Unusual positions, § 208, . . . 353—356

(*III.) Accustomed modulation, § 209, . 357—360

(*IV.) Partial re-attunement, § 210—213, . 358—364

(*V.) Recurrence of passages previously heard, §§ 214—217, . . . 365—368

(C.) Equivocalness of modulation, §§ 218—224, 369—376

(D.) Examples for practice, § 225, . . . 376—406

TRANSLATOR'S PREFACE

The origin of the enterprise which the Translator has undertaken, in rendering into English the present work, is traceable to a fact in his own experience. When, some years since, he commenced a more methodical and thorough course of musical studies, he at once found himself without the requisite helps. Notwithstanding he possessed himself of such books as could be found in this country, there still remained a most obvious and important deficiency. These books were all perceived to be defective in two particulars; first, in *the absolute want of matter*, and secondly, in *the manner of communication*. A great many things which were continually sought for, and which it is seriously important to every musical student to know, were not to be met with in any of them. Thus a deficiency was seen to exist, which must leave the mind in ignorance, conjecture and doubt, on many points most vitally concerned both with musical knowledge and musical practice. Indeed, this defectiveness extends even to matters involved in common, every-day musical performance; and so great is the chasm which it leaves in all the instructions relating to Harmony and Composition, that the latter can scarcely be said to be taught at all. On the other hand, as it regards *the manner* in which these books present their instructions, it was found to be, as universal experience declares it to be, confused, pedantic, blind, and misleading. Their intricate and complicated forms of expression; their affected, foreign, pedantic terms; their general looseness and obscurity of style, render it on the one hand, almost impossible to get at their real meaning at all, while, on the other, by interposing unnecessary and almost insuperable difficulties in the way of the learner, they either dissuade him from his attempts altogether, or needlessly encumber, obstruct and retard his course of advancement.

Such a deficiency being found to exist in the necessary facilities for musical acquisition, the thought occurred, that in Germany—the garden of musical cultivation and the richest field of musical science on earth—that land so distinguished for general research, thought, and profound scholarship—something might be found which would supply this chasm. Accordingly, after a series of inquiries, prosecuted with this view for some length of time, it was ascertained that Godfrey Weber's large treatise on Musical Composition, was, of all others, the work to be chosen. The reasons which have led to such a determination are briefly as follows:

The personal properties of the man are those which render him pre-eminently qualified for the task of producing such a book. He possesses an able intellect, combined with a large share of common sense and sound judgment. He is, moreover, distinguished by one other attribute, which is as rare as it is valuable; namely, *a faculty to teach*. That simple, clear, lucid train of ideas which make everything plain in their wake, is pre-eminently his. He seems always to move in sunbeams. His thoughts, though deep and comprehensive, are nevertheless, simple and plain; and while he is peculiarly philosophical in his habits, and is always answering, in a most agreeable and satisfactory manner, the "*whys*" and the "*wherefores*" which spontaneously arise in every student's mind, he at the same time does it in such a way as not in the least to cloud his communications, but, on the contrary, rather to enhance the welcome light in which he makes us see the things he wishes to present. He moreover superadds to his other qualifications a classic and liberal education. As a writer on music, his reputation is above that of any other man in Germany.

Godfrey Weber's treatise on Musical Composition is the great work of his life. It is now more than twenty years since he published his first edition. During this long period, it has been an object of constant attention and effort with him to add to it every possible improvement, and to render it entirely a standard work of the kind; and the two subsequent editions, published, the one in 1824, and the other in 1832, bear ample testimony to the success of his endeavors. The reputation of his work has steadily risen, from the first day of its publication to the present hour, and it is probably safe to say, that, all things considered, no book of the kind holds so high a standing in Europe at the present time, as does *Godfrey Weber's Theory of Musical Composition*. The only works that can compare at all with it, are Boniface Asioli's "*Il Maestro di Composizione*," Anton Reicha's "*Traité de haute Composition Musicale*," and A. B. Marx's "*Kompositionslehre;*" but these works, though each possesses its peculiar merits and holds a high pre-eminence above other works of the kind, are still, all things considered, secondary to the work of Godfrey Weber, and especially so in their relation to this country. They (especially Dr. Marx and Reicha) aim more at particular excellencies; Godfrey Weber more at general and universal ones. Perhaps there could not be a better proof of the universally acknowledged merits of Weber's work, than the fact that as soon as it was published, especially in its later editions, musical writers all over Europe went to work at manufacturing books out of its materials and in imitation of its peculiar properties. Some idea, moreover, may be obtained of the estimation in which it is held in England, from the following remark of an English writer in A. D. 1829, to wit: "*Of all the books ever written on the science, this is the most important, the most valuable,*" &c.

One valuable property peculiar to Weber is *the copious fulness and minute detail* with which he treats his topics. There are writers who glance at almost everything and yet give us no distinct idea of anything. But such a writer was not Godfrey Weber. The subjects which he takes up, he *treats.* He makes us fully understand them. He leads us all around them, and shows us how they look on every side. If they are buried up in rubbish, he clears them of that rubbish, and lets us see them in the naked light of simple truth; if they are beset with difficulties, he is sure to notice the fact, and either to remove those difficulties or to tell us how to estimate them. The effect of all this is to give us clear, well-defined and practical ideas—a species of knowledge which we can *use.* It is only this full and perfect grasp of a subject that can give us a commanding power over it, and enable us to make a practical appropriation of it; and it is for the want of such a complete and exact knowledge of things, that the partial acquaintance with them which we do enjoy, is so often of no practical avail to us. Weber had his eye upon this fact, and has studiously adjusted his work in accordance with it. He has taken great pains to give us a *personal* and *independent* possession of things—to make our ideas so clear and so full as to confer upon us a complete mastery of the subjects to which they relate. On this point Weber's work holds a rare distinction;—a distinction which, together with the other unprecedented excellencies of the work, has made it the basis of a musical revolution in Europe, and which will perpetuate its popularity long after that of other works, both antecedent and subsequent to it, shall have been lost in the shade. Works of this kind but seldom appear. Indeed, there are but few men qualified to write them, either by their power of intellect, on the one hand, or their sound practical judgment, on the other. Several treatises on Musical Composition have appeared in Europe quite recently; but none of them evinces the ability of Weber's, none of them sheds so rich a light on the field of the science, none of them is destined to wield so powerful and enduring an influence upon the musical condition of the world.

Weber's work is pre-eminently adapted to *this country.* Its admirably clear and simple style, taken in connection with the copious detail of its matter, renders it, as the author himself very justly observes, peculiarly appropriate to those who have but little or no present acquaintance with the subject. It is truly just the book that we need. On the one hand, it is the best authority that the world contains; on the other, it is simple and easy to be understood. The very copiousness of the work is, for *us* at least, one of its best traits. No impression could be more false or absurd, than is that so currently entertained by the mass of community on this point. *Brevity* has universally been sought, while it is the very last thing that *should* be sought. If knowledge is to be acquired *easily*, or fully, or accurately, *copious* treatises, not abridgements, are the ones to be used. Counter as this idea is to the general current of opinion, no one who tests it by experiment will fail to find it true. And welcome indeed to our shores should be a work so well adapted in this respect, as is Weber's, to the condition and wants of our country.

The first part of the work, embracing §§ I—C, is made up of *preliminary* matter. Its object is to prepare the way for what follows, and hence it consists, as its title imports, of *General Musical Instruction.* This portion of the work is adapted to every one who studies music in any form whatsoever,—to every one who wishes to learn to sing, or to play, (as *e. g.* the piano-forte, the flute, the violin, or any other instrument,*) or to lead, or to teach. It embraces first principles, things which lie at the foundation of all musical knowledge and attainments. Hence it is a book which should be, not only in the hands of every *beginner* in music, but also in the hands of every one, who, though he may have studied music more or less, has never enjoyed the advantages of that enlarged, thorough, and standard instruction which this work contains.

But no musical student who has an inquisitive mind, or who means to make solid attainments in the art, will rest satisfied until he has possessed himself of the entire work. There are many subjects of such a nature that they cannot be treated in a brief form, and it happens, that, in music, some of these are subjects of the highest interest and of the most fundamental importance. Take, for example, the subject of *scales*, *keys*, *modulation*, and the like. Things of this nature should not be unknown to a single student of the art. They are even elementary. They lie at the very entrance of the musical temple. But these and various other topics, essentially connected with the very first principles of musical science, and too material to every learner—no less the practical than the theoretical—to be dispensed with, require a far more extended treatment than is compatible with the size of any small volume, and indeed presuppose other instructions which are connected with the science of Harmony and Composition. And besides, the intimate connection which the more immediately *practical* holds with the *theoretical*, always renders the one more or less defective without the other. A knowledge that involves the remoter principles of the art and surveys the whole ground, is not only more satisfactory in itself, but likewise more available. It puts a different shading upon a man's acquisitions. It gives him additional power. It enables him to wield a stronger influence. And it is for this reason particularly that *every teacher* of music, in whatever department, should be advised by all means to avail himself of the information contained in this book. Were he but apprized of the additional ability with which it would enable him to execute, and the additional success which it would cause to fall upon his labors, he would not be without it. This work, moreover, is by no means *theoretical* in the sense of *non-practical*. The word *theory* seems rather an unfortunate one to be used in this connection. To the apprehension of many, it carries the idea of something that is far removed from the *practical* and the *useful*, and that is attended with no real, substantial advantages; while, in point of fact, the term, as employed in the present instance, designates a body of principles and a mass of knowledge which is practical in the very highest degree, and which sustains very much the same relation to musical action, as a helm does to a ship, or a guide to a traveller, or sunbeams to all our operations in the external world.

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* An attempt to learn to play an instrument without an acquaintance with the fundamental principles of all music, is a gross error in principle, and a great personal disadvantage. The effect must always be, to obstruct the progress of acquisition, and to render the attainment extremely imperfect, even when made.

☞As it respects the manner of using this work, it is to be observed, that, inasmuch as it consists of one entire system, consecutively connected together, it will be necessary always to have studied the previous parts, in order to be prepared to understand the subsequent ones. It should be a principle with the student, in his perusal of the book, to conquer every inch of the ground as he passes over it, to get fully and perfectly in possession of all the preceding matter before he attempts any of the following. If he adopts this course, his way will always be pleasant and clear, and will conduct him on, by an easy and sure progress, to the object of his wishes. ☜

The amount of labor involved in the translation and editorial superintendence of a work like the present, can be duly appreciated only by those who have had personal experience in the same department of effort. Suffice it to say, however, it is such as would never have been undertaken by the present translator, but from the conviction stated at the beginning of this article, namely, that a work of this kind is seriously called for by the musical interests of the country. In a pecuniary point of view, it will be far less profitable, (if indeed it should ever be profitable at all,) than are the other musical works already extant. The price put upon it is very greatly below what is due for a work of its size and character. It was the intention of the proprietors, however, in fixing its price, to remove every possible obstacle to its universal circulation, and especially now, while it is on the threshold of its introduction into this country, to avoid everything that should tend in the least to keep our American musical community either from an acquaintance with its merits or from a participation in its advantages. The time, it is presumed, cannot be distant, when works of this kind will be held in just estimation in our country, and will be adequately sustained by the public patronage.

JAMES F. WARNER.

BOSTON, January 15, 1842.

EXTRACTS FROM THE AUTHOR'S PREFACE.

Practice precedes theory in the case of every art, and the latter, forming itself gradually upon the products of the former, constantly keeps at some distance behind it, so long as the art itself continues to make a progressive advancement. The whole is founded upon nature and upon the historical developements which each particular art may exhibit along the course of its being. But so far as *music* is concerned, the progress made for the last ten years in practical composition has been out of all proportion to that which has been realized in the correspondent theoretical doctrines,—the latter yet remaining in a very rude state. Whoever doubts the fact may readily satisfy himself of its truth by merely inquiring of the numerous multitude who every day fruitlessly endeavor to derive the requisite assistance from the treatises on Composition or the miserable Thorough-bass Schools which have hitherto been published!

The more uncultivated, therefore, this field of our musical literature has heretofore lain, and the more imperatively and universally the demand for instruction upon the fundamental principles of Harmony is now urged upon us from all practical musicians, and from all friends of the art who are not satisfied with being merely mechanical practitioners or such shallow amateurs as can realize only the most superficial pleasure from the art, but who as pire to higher attainments,—so much the stronger is the claim resting upon us, to furnish, as fully as possible, those peculiar facilities for attainment which the hitherto so much neglected theory of the subject can supply.

It is an honor to the taste of our age that now so many of the better musicians and amateurs, even without any direct intention of being themselves composers, still cherish an ardent desire to become acquainted with the fundamental principles by which tones are connected into melodies and harmonies, for the purpose of ennabling themselves to conceive and communicate a rational idea of the good or ill effect of this or that combination of tones and of the beauty or deformity of this or that musical passage or piece.

Such an aspiration is no less commendable in itself, than of happy omen to the art. The only infelicity in the case is the false supposition on the part of this class of persons, that their more limited object can be attained *by a correspondently shorter route,* and consequently, misled by such an impression, they eagerly seize upon the *shortest* instruction books so abundantly to be found in every market under the specious titles of *Elementary Books, Treatises on Harmony, Thorough-bass Schools,* and the like. The numerousness of such books, taken in connection with the smallness of their size, naturally confirms the uninformed in the false idea that everything essential can be adequately furnished *in nuce* on this small number of leaves, —as it were in a nut containing just that and that alone which inquirers of the species now under consideration need to know.

I aver it as my most decided conviction, that those who think of arriving at the object of their wishes in *such* a way, are destined to disappointment.

A compressed general view of the contents of a systematic science may indeed be given in few words to *those who are already initiated and expert in that science.* To such, the spirit of the whole may be communicated in a few short, sententious hints; but the idea that one wholly unacquainted with the subject, should be able *to learn for the first time* whatever of the science is material to his purpose from such a compressed general view, is absolutely ridiculous!

The concise instruction books so much coveted, however, are far from being condensed sketches designed for *the learned.* On the contrary,—and this is the very misfortune in the case,—they are directly proffered to *the uneducated* and boast of their comprehensibility and intelligibleness to these! Is not this absurd? Do we not find it necessary to use very many more words in making ourselves intelligible to an ignorant man, than to one well informed? Where then, on so few leaves, do these authors find room to communicate (in addition to so much that is useless) any adequate or intelligible view of what is essential in Harmony and Composition. The case is clear. If we would be so very brief, our only alternative is, either to be positively superficial* on all points, or somewhat full on a few, at the total expense of all the rest. In the first case, the reader gets nothing at all ; in the second, mere disconnected fragments and of course no idea whatever of the subject as a whole. Those, therefore, who think of obtaining from the little books in question any just conception of the nature of the subject, cannot fail of disappointment.

It surely would be absurd, then, to look upon my present Theory as *too copious for beginners. It is for the very purpose of making myself intelligible, not merely to the educated, but* TO THOSE WHO ARE AS YET WHOLLY IGNORANT OF THE SUBJECT, that I have been more full in many places than I should otherwise have been,—that I have explained in a very copious and detailed manner, many things which, if I had been writing only for the learned, I might either have presupposed as already known, or have merely hinted at in a single word; and that I have not felt myself at liberty to omit any thing which was either necessary to facility of apprehension, or adapted to throw light upon the subsequent parts of the work. *This* is the reason which has impelled me to be so copious as I have been, and which has made me feel, that, instead of being more brief, I should have been yet more full.

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* In not a few instances, the current treatment is much worse than superficial. See e. g. §§311, 426, 429, 431, 452, 454, 476, 522, 529, and remarks on §§88, 95, 99, 103, 107, 131, 189, 222, 242, 312, 320, 324, 326, 341, 483, 496, 536, 539, 574, etc. etc.

Nothing certainly could be more wide of the truth than an idea which I have once at least heard expressed, namely that my Theory *presupposes* much, with which one must previously become acquainted from some other book. It requires but the most superficial glance at my first volume,* [1st. No.] namely at §§ I—C, to convince one that nothing at all is presupposed. A proposition, therefore, to engraft my work upon others, as one more advanced than they, confers a higher honor upon me than I deserve—an honor which I am under the greater necessity to decline, since the reader would find himself compelled, on perusing my Theory, *to unlearn* most of what he had acquired from those other sources.

Finally, it would be a great mistake to infer from the title prefixed to my work, namely the *Theory of Composition*, that it is designed more for those who wish to become practical composers, than for those who have the more limited purpose of securing an acquaintance with the principles of the Science. Surely the doctrine of pure composition which is contained in the present four volumes. [4 Nos. or 2 Vols.] and which constitutes a Grammar of the Musical Language, is alike indispensable to both designs. If, however, I had acted with the express intention of writing only for those desirous of understanding the subject, but not of becoming actual composers, I know not how I could have written otherwise, than as I have done.

To what extent I may have succeeded in facilitating the progress of inquirers after musical knowledge,—whether amateurs, practical performers, or composers,—I will not, after the usual manner of preface writers, allow myself to judge. As it regards *my method of treatment*, however, though it borrows nothing from all the systems and modes of exhibition which have been proposed by theorists before me, but is *strictly and wholly my own*, yet I do not, on that account, feel the less bound to acknowledge, with all the candor and fearlessness which are due to the truth, that I regard *this mode of treatment*† as the only proper one and as that alone which is adapted to the nature of the subject or to the removal of the dark cloud which has arisen—not indeed so much from the intrinsic difficulties of the subject itself, as from the defective manner of treating it—and which has so seriously embarrassed the student's progress to a knowledge of his art.

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* The work was originally published in *four* volumes, but now in *two*. It is now issued however, in four numbers, which correspond very nearly to the original four volumes.

† Comp. remark on § 99. Tr.

To exhibit the peculiar features of my mode of treatment in the few words appropriate to the present connection, would be impossible. This must be learned from the book itself. Along the course of the work, I have, in the more important cases, given also, as fully as possible, *the reasons* for my views.*

It should be farther observed, that my *Attempt at a Systematically Arranged Theory* is by no means, as many suppose, intended to be a *system*, in the philosophico—scientific sense of that term,—by no means a combination of truths, all derived in the manner of logical sequence from one grand fundamental principle. On the contrary, it is one of the most radical features of my view, that the musical art is not susceptible of such a systematic establishment, or at least that it has thus far failed of proving itself to be so.† The little truth which we have as yet discovered in the realm of musical composition, consists merely in a number of experiments and observations upon the good or bad effect of this or that combination of tones. But an attempt to derive these facts of experience, in a logically consecutive manner, from any one leading principle and to reduce them to the form of a philosophical *science—to a system*, has always thus far, as I have had but too frequent occasion already to remark in the course of this treatise, been destined only to a signal defeat. We everywhere meet with the most melancholy demonstrations of the fact, that theorists hitherto, instead of first investigating as fully as possible the individual phenomena of the goodness or badness of sound in case of this or that combination of tones, and *then* perhaps setting about the construction of a system, have precipitatiously and prematurely begun to construct such a system in the very outset and have sought to brace it up by the imposing form of a mathematical foundation; and when afterwards, as must naturally and necessarily be the case, a multitude of phenomena present themselves which disagree with and oppose the system thus hastily adopted, they, instead of suffering themselves to be awakened thereby from their blissful dream of confidence in their *system*, seek rather to dispose of the difficulty by consigning these phenomena to the category of exceptions, liberties, licenses, ellipses and catachreses! The present work claims only the merit of sifting the aforementioned deductions of experience by a more exact investigation, of increasing their number by original observations, and then of combining them together, in a regularly connected form, always grouping into one class those which are similar to each other, and arranging them in the most natural order, so as to present a clear and intelligible exhibition of facts and results. Hence I denominate my work merely an *Attempt at a Systematically* ARRANGED *Theory:* the title of *system*, in the *strict* sense of the term, is too high sounding for me. Its adoption would exhibit me under false colors.

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* The peculiar and distinguishing properties of my mode of treatment on a few principal points, are exhibited in the remarks on § 99.

† Compare the remarks on §§ IV, X & 99.

The author extends this preface some twenty pages farther. In addition to what is contained in the above extracts, he offers his readers an apology for having so frequently quoted his own compositions to illustrate his principles, and for the long delay of the subsequent parts of his work after the publication of the first volume. But he devotes most of that portion of the preface which is here omitted, to an exhibition of the gross plagiarisms committed upon him. Musical writers in Germany, Italy and France had made the most liberal use of his materials and in some instances had even constructed entire treatises upon his principles. In speaking of the eagerness with which some of his copyists had sought to purloin his matter and of the miserable failures which they had committed in attempting to construct out of it books of equal merit with his, the author thus proceeds:

Immediately after the appearance of the first volume of my theory and while the second was scarcely yet extant, these gentlemen went to work at manufacturing out of these first two incomplete volumes, their so-called Elementary books on Harmony and Musical Composition, Exhibitions of the doctrine of Harmony, Thorough-base, &c., which, generally speaking, consist of a literal transcript of a fourth part of my paragraphs, with the omission of the intermediate portions (!) and thus with the loss of the connection, and which accordingly leave unsupplied a deficiency of all the matter, absolutely essential as it is to the entireness of the Theory, which they *could* not transcribe from the subsequent volumes of my work, because the latter were not yet published. They have then offered for sale in the public market the frippery of an arbitrary amount of stolen individual paragraphs, scraped together in this miserable manner from a new system with which as yet they were but partially acquainted. By such an operation, they have stolen from me even the yet unripe fruit of a stalk but partially grown, and that too with an air that would indicate as if this fruit had been raised upon *their own field*. For, my paragraphs, positions, modes of representation, tables, figures, &c., which are different from anything heretofore taught; also my newly introduced modes of designation, (as, *e. g.*, those of §§ 41, 52, 58, 97, &c.(—they have unscrupulously transcribed into their books, as if *they* were the original authors of them.

That the works of these gentlemen, manufactured in the manner described, cannot, in the very nature of the case, be otherwise than extremely vicious, deceptive, and misleading; that they have, in consequence of an unwise mutilation, expressed obscurely and even falsley, that which I had taken pains to represent clearly, and the like,—is as much a matter of course as it is of reality. It is especially unfortunate for *me* in this case, that those readers of such works, who know that they are intended to be drawn from my Theory, and who, imagine that they will be able, at a very cheap rate, and in a so much coveted brief form, to learn from them my doctrines, are led, on being disappointed in finding there only a universal defectiveness, a want of consecutive connection, and a deceptive superficialness, to the belief that they will find in my Theory itself the same faults.

The author concludes as follows:

I must be permitted, in conclusion, to say a few words in justification of the freedom with which I have so often ventured to speak of venerable and established doctrines as only half true or as wholly false. I certainly take no pleasure in differing from others, any farther than I am compelled to differ by a regard to truth. Nor will I apply to these revered systems of olden days and to the inextinguishable race of their ancient and modern regenerators, Göthe's humorous figure of the old castle, originally built with childish precipitation, and afterwards, for the sake of covering the defects of its original plan, furnished with the most variegated modern bulwarks, trenches, towers, balconies and port-holes, and enlarged by additions, wings and porticos, connected with one another by the most singular galleries, halls and passage-ways,—a castle which—though indeed for the simple reason that it has never been seriously attacked—has never been taken and hence has acquired and still enjoys the reputation of being invincible, while in truth it has long since crumbled to ruins in itself and now stands a mere vacant shell: invalids being its only defenders, though these, it is true, consider themselves quite prepared for attack!—&c. No, I aver it, no one is more willing than myself to award all due respect to the meritorious exertions of our fore-fathers to establish a theory. But sacred as is the duty of thankfully acknowledging what they, long before we had a being in the world, have done in their way for the art and for its doctrines, yet we are equally bound not to forget, that they have committed to us the business of a more mature cultivation, of a more rigid scrutiny, and of farther and deeper research in general. Hence, if we would *rightly* honor the fathers of our theory, if we would *rightly* follow their example, we must, as they did, think and examine *for ourselves*, and not merely echo just what they said and in just the way they said it before us, and thus, like the flock following the bell-wether, blindly trot on in the path which they trod.

Seneca warns us against such an implicit faith, in the following forcible words: "*Nihil magis praestandum est, quam ne pecorum ritu sequamur antecedentium gregem, pergentes non qua eundum est, sed qua itur;*"—"Nothing is more to be commended, than that we do not, like senseless sheep, implicitly follow the flock of our predecessors and thus go, not whither we ought, but whither *they* go."

GFR. WEBER.

GENERAL MUSIC TEACHER.

CHAPTER I.

PRELIMINARY.

GENERAL IDEA OF MUSICAL SOUND, OF THE MUSICAL ART, AND OF MUSICAL COMPOSITION.

DIVISION I.

MUSICAL SOUND.

§ I.

In order to acquire a just and accurate idea of *musical sound* and of *the art connected with musical sound*, i. e. *the musical art*, we must begin with the idea of *sound in general.*

Under the term *sound* we comprise every thing in general which is perceptible to our sense of *hearing*, every thing which we perceive through *the ear*, or, in a word, every thing *hearable.*

Every such sound consists, as we know, in the sensation excited on our ear by the oscillation (the shaking or vibratory motion) of a body whose vibrations are conveyed to the nerves of our ear, or to our organ of hearing, by the air, or by any other intermediate body, where the sensation is excited which we call *hearing*. (Hence Chladni very correctly defines the idea of *hearing*, in a physiological point of view, in the following manner: "Hearing is nothing else than a vibratory motion perceived by means of the auditory nerves." Acoustics, § 231.)

An essential difference of sound, however, depends upon the circumstance, whether such vibrations are of one and the same degree of quickness, or a part of them are more quick, and another part more slow.

A sound of the former species (*i. e.* where the vibrations are all equally quick or equally slow) may be named *a simple sound;* in the language of art, it is called *a musical sound.* Our ear is capable of distinguishing, in the case of such a sound, whether the vibrations are *quick* or *slow;* and in so far as we perceive the sound as consisting of *slow* vibrations, we call it *low;* and in proportion as we perceive it as consisting of vibrations following one another in *quicker* succession, we call it *high.*

A musical sound which we recognize as a sound of a definite *pitch*, we usually denominate *a tone.*

From this analytical view of the subject there arise the following definitions:

Sound is the hearable action of a vibrating body.

A MUSICAL *sound* is a simple or unmixed sound, a sound of a perceptible, determinable pitch.*

A *tone* is a musical sound of a known pitch, a sound regarded as being of a certain height.†

In contradistinction from the simple sounds above mentioned, we may call those which do not consist of vibrations of one and the same velocity, *mixed sounds.* The vibrations in this case are so totally *dissimilar* among themselves, that the ear cannot distinguish a definite pitch of sound in them, and hence they may be denominated *confused sounds or sounds of an indistinguishable, unknowable pitch*, or *mere sounds*, *toneless*, *unmusical sounds*, because the ear perceives a sound, but no tone—no sound of a recognized or of a recognizable pitch. We also use the term *noise* for a sound of this character. (Comp. § V. at the end.)

§ II.

For the sake of more perfectly elucidating and establishing the definitions just given, we will subjoin a few experiments as examples and illustrations.

1. *That sound is the effect of the vibrations of a body*, can easily be shown. If *e. g.* we bend together the two ends of a tuning-fork, and then suddenly let them go, they immediately spring apart, but do not at once remain at rest in that position, but continue to oscillate back and forth for some length of time. We can feel this oscillation by our hand, and possibly even perceive it with our eye. Such vibrations, in the case of long, rather thick and moderately strained strings, are still more obvious to our senses. As long as the trembling or vibrating motion of such a body continues, we hear the sound, and its strength diminishes co-ordinately with the strength of the vibrations, until at length the one vanishes and disappears with the other.

A sound is strong or weak, just according as more or fewer parts of a greater or a smaller body are put into a strong or a weak vibration.

The appropriate bodies for the production and communication of vibrations, and consequently for the generation of sound, are *elastic* bodies.

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* *i. e.* A sound whose pitch *may* be ascertained, a sound which *can* be distinguished as a high sound or a low sound, though not necessarily thus distinguished in fact.

† *i. e.* A sound which is not only *capable* of being distinguished as high or low, but which actually *is* thus distinguished, a sound which is regarded and treated as having a particular pitch, as *e. g.* when we conceive or speak of a sound as represented by a letter of the alphabet, we conceive and speak of it in its character as *a tone*, because the letters which are thus employed always represent musical sounds which are of *a certain definite pitch.*

So also when we speak of a musical sound as employed in a *tune* or in musical composition generally, we speak of it in its character as *a tone ;* because a musical sound considered in such a connection necessarily involves the idea of some particular *pitch.*

TRANSLATOR.

Thus *e. g.* a moderate stroke on a bell, on a strained drum-head, &c. produces a louder sound, than a far stronger stroke on a piece of lead or on slack leather: for, bell-metal is very elastic, whereas lead is not, and leather becomes so only by being strained. And hence also, the sound of a bell becomes dull and languid when it does not hang freely, but stands on the ground, or in some other way rests strongly against some impeding body and is thereby obstructed in its vibrations.

For this reason, particularly elastic bodies are employed for musical instruments, as *e. g.* bell-metal for bells,—steel for tuning forks, for steel piano-fortes, for æolian harps, for steel harmonicas,—strained wire or gut for stringed instruments,—glass for glass-harmonicas, and the like. In organ pipes, and especially in the labial or lip pipes, (the so called flute apparatus,) and in other wind instruments, the column of air contained in the pipe is itself the vibrating, sound-giving body, which is put into a vibratory motion by the friction arising from a current of air thrown into the pipe, and is thus made to produce tones.

REMARK.

In the so called *tongue or reed pipes* of the organ (*tuyaux à anche*), the tongue or reed, rather than the column of air, is the body that determines the sound,[*] while the body of the pipe and the mass of air vibrating therein seem rather only to modify *the character* of the sound, and to give it its peculiar *impress* (*timbre*), its *characteristic qualities*, than to determine absolutely its *pitch*—the velocity of the vibrations—the so-called *quantity* of the sound. It hence appears, that the pitch of sound in the case of a tongue or reed pipe depends only in part upon its greater or less length, and depends essentially upon the length and stiffness of the tongue, so that we can at pleasure tune one and the same pipe, at one time, high, and, at another time, low,—the length of the pipe continuing the same,—and can produce very low tones from *very* short pipes; and indeed, we can produce a variety of tones, at our option, from one and the same *body* (*corpus*) of a tongue or reed apparatus, *at the same time*,[†] all which could not take place, if the mass of air enclosed in the body of the pipe were alone the tone-giving and tone-determining body.—Now since the pitch of sound in the case of the tongue or reed pipes is not *entirely* dependent upon the length of the column of air, and depends in general upon the magnitude and form of the body of the pipe, and thus the quickness of the vibrations of the tongue or reed seems to be more or less obstructed and retarded by the counteraction of the greater or smaller column of air,—a fact very clearly apparent in the case of several other wind-instruments with reeds (as *e. g.* the clarionet, the bassoon, &c.),—so it would be very interesting to go into a more nice and exact inquiry, *in what respect* the tongue, at one time, and the column of air, at another, determines the pitch of the sound, and particularly, whether the second, third, and more species of vibration, as they are called by *Chladni*, takes place in the tongue or reed pipes as they do in the pipes of the flute apparatus,—inquiries which are clearly of the utmost importance and of a most material practical bearing, while yet we find them to have been but very superficially touched upon, even if at all, by our excellent *Chladni*.*

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[*] As I have shown in my Acoustics of wind instruments, in der Leipziger allgem, musik. Zeitung V. Jan. 1816, S. 35, and in der Ersch-und Gruberschen Encyklopädie der Wissenschaften und Künste, 10. Band, Artikel *Blas-instrumente* § 3, where I have attempted to turn the fact to practical advantage.)

[†] As has already been demonstrated by F. Kaufmann's Trumpet-Automaton.

Thus I had written in the first and second editions of this work, in the years 1817 and 1824. Since that time, we have been laid under great obligations to our distinguished mathematician and writer on Acoustics, *prof. W. Weber*, for most interesting developements on all these points, which he has arranged into an article in the journal *Caecilia*, Vol. XII, expressly for musicians and musical instrument manufacturers.†

The question, how *the human vocal organs* produce their sounds, I believe I have treated somewhat more satisfactorily than had heretofore been done, in a copious essay devoted to that subject in the first number of the same periodical, where, as I trust, I have also thrown some new light upon the afore-mentioned questions.‡

§ III.

(2.) *That a high tone is the product of quick vibrations, and a lower one is the effect of slower vibrations*, may be seen from the circumstance that the oscillations of very low sounding strings can be perceived by the naked eye, while those of a higher tone, cannot be thus perceived, because the higher the tone, the quicker are the vibrations, and therefore, as tones ascend in pitch, the oscillations become continually less and less apparent, until at length they are no longer at all perceptible.

We may say of a tone which makes twice as many vibrations in a given time, as another, that *it is twice as high as the other, or only half as low*.

One can easily anticipate the fact, that a tone which is twice as high as another is called its *octave*. Farther on, this term will be more perfectly explained.

Whether a body makes quick or slow vibrations, depends upon different circumstances, some of which we will here specify.

(a) In the first place, other things being equal, *a long body* regularly vibrates slower than a *shorter* one; consequently the former sounds lower, and the latter higher. Hence *e. g.* we have long strings on the piano-forte for the low tones, and shorter ones for the higher tones; hence, long pipes in the organ for the bass, and short pipes for the higher tones; hence, the short octave flute sounds high, and the long bassoon low; hence, the tone of the violin string is higher when it is pressed down upon the finger board, for in this case its entire length does not vibrate, but only that shorter portion which lies between the bridge and the finger.

Now since the quicker are the vibrations of a body, the higher is the tone, and the shorter is the body; and in exact proportion as the length of the body is increased, the quickness of the vibrations—the height of the tone—is diminished; so the quickness of the vibrations, or the height of the tone, is in *inverse proportion* to the length of the vibrating body.

In some kinds of bodies this inverse proportion is of such a species, that a body of a certain length vibrates twice as fast as another body of double the length; and only half as fast as one that is but half as long, while the circumstances in all other respects are precisely the same. *e. g.* Of two strings, which are exactly alike on all points, except that one is only half as long as the other, the former makes just two vibrations while the latter makes but one; the tone produced by the first is *twice as high as that produced by the last* (or but half as low), and the tone produced by the latter is *twice as low* (only half as high) as that produced by the former. Mathematically expressed, the proposition stands thus: in the case of two strings whose lengths are to one another as 1 to 2, the velocities of the vibrations and the heights of the tones are to one another as 2 to 1.

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* § 71 of his *Akustik* and also in his *Neuen Beiträgen zur Akustik*, Leipzig, 1817, S. 64. zu § 68.

† Comp. also the same, I Bd. (Heft I.) S. 94: VIII. Bd. (Heft 30.) S. 91: XI. Bd. (Heft 43,) S. 181; XII. Bd. (Heft 45.) S. 1.

‡ Comp. also *Caecilia* I. Bd. S. 81; IV. Bd. S. 155, 229; VIII, S. 146.

The same proportion holds good for the most part, under otherwise the same circumstances, in relation to the column of air, producing tones in organ pipes and in other wind instruments; but it does not apply to such cases as that of the transverse vibrations of a tuning-fork, or of any other similar bar; for such an article vibrates *four times* as quick as another *twice* as long, and only *a quarter* as quick or *four times* as slow as one *half* as long. Mathematically expressed, the pitches of the tones in two instruments of this species, otherwise alike, are to each other inversely as the squares of the lengths.

(b) *Secondly*, a body regularly vibrates faster and gives a higher tone, the more stiff it is. Thus the stiffness of a body does not, like the length, stand in *inverse* proportion to the height of the tone, but in *direct*. In *strings* vibrating transversely, this proportion is of such a nature, that a string, in order to its vibrating *twice as fast* as another, must be strained with *four times* the degree of tension. Mathematically expressed, the idea is as follows: In the transverse vibrations of two strings, in all other respects alike, the velocities or pitches of the tones are to one another as the square roots of the distending forces.

(c) The greater or less *thickness* and *hardness* of the sounding bodies has also an influence upon the quickness of the vibrations; and indeed a double and opposite influence.

At one time, namely, a thicker and harder body vibrates slower than a more thin and soft body. That is to say, the transverse vibrations of a string which is *twice* as thick as another, all other things being equal, are only *half* as quick, and thus produce a tone only *half* as high as the other. In this case, accordingly, the thickness of a string and the height of its tone are again in inverse proportion to one another. Therefore, for stringed instruments we use thicker strings in order to produce the lower tones, and in part also strings wound with metalic wire.

But at another time, the greater thickness of the body, in so far as it at the same time increases its stiffness, makes the vibration quicker and the tone higher, so that *e. g.* the transverse vibrations of a bar, fastened at one end—a bar that is *twice* as thick as another bar, vibrates twice as fast as the latter. Hence the fact that the tone of a tuning-fork does not become higher, but lower, by filing its bars or shanks thinner; because by being thinned they lose in stiffness. Here we have also an explanation of the fact, that if we strike on a somewhat freely suspended metalic cannon, or on an anvil standing freely, a far higher tone is produced thereby than the large size of the body would have led us to expect. For the same reason it is, that most church bells do not sound near so low as we should, from their magnitude, presume they would; and we might obtain as low a tone (not indeed so strong) from a very much smaller, though proportionably thinner, bell, either of metal or even of glass; and hence it happens, that the tones of the bell on the stage perform their imitations with a very considerable degree of deceptiveness.—(It may be a result of a similar cause, that a very thinly wrought bassoon or oboe reed, or clarionet reed, more easily produces the low tones than the high ones, whereas a thicker and consequently a stiffer reed is better adapted to the higher tones.)

These and *many other circumstances*, whose complete treatment does not belong in this place, determine the pitch of the tone. Thus, in many cases, the pitch of the tone depends upon the form of the vibrating body, upon the manner and direction in which it is struck, upon the touching of this or that centre of vibration, and upon other similar circumstances, as *Chladni* has clearly shown in his able developements on this subject.

But how, in particular, the pitch of tone in the case of a column of air in a *wind instrument* or in *a pipe* generally, is determined, I have shown in an extended article on *the Acoustics of wind instruments*, published in the Leipzig General Musical Gazette.* The subject must here, however, be entirely passed over, with the exception of the few points adverted to merely for the purpose of elucidating the abstract definitions given in § I.

§ IV.

(3.) We may be aided in obtaining a more clear and sensible apprehension of the difference between *mere sound*, *musical sound*, and *tone* (§ I) by the following example. If both ends or shanks of a tuning fork are equally long, equally thick, equally stiff, and equally hard, in short, are in all essential particulars exactly alike, there is obviously no reason why the one should vibrate quicker or slower than the other. The fork will therefore vibrate uniformly, and will thus produce a pure *musical sound*, a sound which can be recognized in point of pitch, and which, on being thus recognized, can farther be regarded as *a tone*.—But conceive, in contrast to this, a tuning fork, one of whose shanks is longer than the other, or thicker, or made of softer, less stiff steel,—or a string, a bar or other body, which perhaps is thick and hard at one end, but thin and soft at the other: if we set such a body into a vibrating motion, the vibration will be slow at one end and quick at the other. Conceive farther a body of unlike form, as *e. g.* an unformed block or a board, on which one strikes with his hand, a waggon rolling over the pavements, and the like. Such a body will of course produce vibrations of a very dissimilar character: those of the one part will check, disturb, and confuse those of the other; the body will sound high and low at the same time, in a confused jumble; and in such an entire want of all order and unity, of all symmetry and proportion in these heterogeneous vibrations, no definite pitch of sound will be distinguishable, but merely a confused complication of sounds of different pitches, an irregular *noise* of indeterminate height or lowness. So also, if several adjacent keys of an organ be pressed down at once with the palm of the hand or with the whole fore-arm, we hear only an indistinguishable buzzing, a confusion or chaos of sounds; and if we perform the same experiment on the higher keys, a horrible howling is heard: and if with the louder low register of the bass, a dull rumble is heard, similar to the roaring of thunder. But what we hear in either case is no *tone*, no *musical sound*, since a definite pitch can no more be distinguished in this case than in the rattling of a waggon, in the roaring of thunder, in the rush of a water-fall, or in the voice of a man who does not sing, but speak.

To produce uniform vibrations and therewith the purest possible musical sounds, is the design of all properly *musical instruments*, down to *the kettle-drum*, whose head, every where of equal thickness and uniformly strained in all directions *i. e.* purely tuned, gives an entirely distinguishable musical sound. The instruments of a lower grade, on the contrary, cannot properly sound, but only make a noise, clink, crackel, bustle and the like, and therefore do not deserve the name of musical instruments: as, *e. g. the drum*, in which two different heads are found, irregularly strained, and the vibrations of the lower head are continually brought into disorder by the additional so called sound-strings, strained under it. The same is true of all the so called Janizary instruments, the so named Turkish *Becken* or *Cinellen* (Piatti), of the *triangle*, *the tamtam*, *the gonggong*, *the bell-tree*, and the like, all which may indeed sometimes be employed in music with good effect, in connection with voices and other instruments, but always only as mere accessory ingredients—only as an apparatus for making *mere sound.*

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* See Leipz. allgem. musikal. Zeitung, V. 1816, Nr. 3, 4, 5, 6, 41, 42, 43, 44, 45, und von 1817, Nr. 48 u. f. und im 10. Bande der Ersch'schen Encyklopädie d. W. u. K., Artikel *Blas-instrumente.*

It is not indeed in the power of our proper musical instruments entirely to prevent *other* vibrations than those corresponding to the tone aimed at, smaller accessory vibrations, occurring together with that; so that, with and besides the tone that is struck, still others also which are higher, sound at the same time. Thus *e. g.* together with the tone of a freely vibrating string of our stringed instruments, still a mass of so called accessory sounds or tones are produced at the same time: namely, one whose vibrations are just twice as quick as those of the principal tone,—another which accomplishes *three* vibrations in the time that the principal tone makes *one*,—still another which vibrates *four* times as fast as the principal, &c: and hence the tones themselves, which, in respect to the velocities of their vibrations, are to one another as 1 to 2, as 2 to 3, as 3 to 4, &c.* All these accessory vibrations or accessory tones are after all so light, almost so inaudible, that they can produce no effect at all and consequently can do no injury.

REMARK.

Many have imagined and taught, that such a connected sounding of the so called *natural*, or, as *Prof. Maass* very appropriately names them, *participating tones*, belongs so materially to the essential nature of a musical sound, that, in its absence, there would be no proper musical sound!—and others have taught that at least this associated sounding constitutes indisputably the agreeableness of the tone.

The contrary must certainly be self-evident to every one who will only consider the following things. In the first place, what are the tones which thus gratuitously sound in connection with the principal tone of a transversely vibrating string? They are its octave and its fifth, and a sound which is not quite so high as the seventh of the double octave, &c.; thus, *e. g.* with the tone C, the accessory tones *c* *g* $\bar{c}$ $\bar{e}$ $\bar{g}$, and a tone between $\bar{a}$ and $\bar{a}$# or $\bar{b}$b, and besides, a mass of others, a part of which cannot be designated by notes, so that thus (not to reckon the last at all, but only to bring five into the calculation), in striking the keys *C*, *g*, $b^{\flat}$, $\bar{e}$, the following chords are sounded at the same time:

[C c g $\bar{c}$ $\bar{e}$], [g $\bar{g}$ $\bar{\bar{d}}$ $\bar{\bar{g}}$ $\bar{\bar{b}}$], [b^b $\bar{b}^b$ $\bar{\bar{f}}$ $\bar{\bar{b}}^b$ $\bar{\bar{d}}$] and [$\bar{e}$ $\bar{\bar{c}}$ $\bar{\bar{b}}$ $\bar{\bar{\bar{e}}}$ $\bar{\bar{\bar{g}}}$#];
☝ ☝ ☝ ☝

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* *See Chladni's* Akustik § 52. S. 67; *Kirnbergers* Kunst d. reinen satzes. 1 Thl. S 144., auch der Artikel *Beitöne* in der Encykl. V. Ersch, u. a. m.

the amount of which, in a condensed form, is as follows :

$\underbrace{\text{Sounds struck together.}}$ $\underbrace{\text{Sounds occurring together.}}$

[C g b♭ $\bar{e}$], [c $\bar{g}$ $\overline{b\flat}$ $\bar{\bar{e}}$], [g $\bar{\bar{d}}$ $\bar{\bar{f}}$ $\bar{\bar{b}}$], [$\bar{c}$ $\bar{\bar{g}}$ $\overline{\overline{b\flat}}$ $\bar{\bar{\bar{c}}}$], [$\bar{e}$ $\bar{b}$ $\bar{\bar{d}}$ $\overline{\overline{\overline{g\sharp}}}$],
☝ ☝ ☝ ☝

or,

C c g g b♭ $\bar{c}$ $\bar{e}$ $\bar{c}$ $\bar{g}$ $\overline{b\flat}$ $\bar{\bar{d}}$ $\bar{\bar{e}}$ $\bar{\bar{f}}$ $\bar{\bar{g}}$ $\overline{\overline{b\flat}}$ $\bar{\bar{b}}$ $\bar{\bar{b}}$ $\bar{\bar{\bar{d}}}$ $\bar{\bar{\bar{c}}}$ $\overline{\overline{\overline{g\sharp}}}$.
☝ ☝ ☝ ☝

(The tones designated by the hand are the ones struck, and the rest are the associated accessory tones). Now these tones are for the most part not only foreign to the harmony, but even to the key itself. In the second place, the duplicates, occurring in such combinations of tones, are not of a like pitch, but, *e. g.* the mathematically pure fifth to the base tone—the accessory tone *g*, is heard higher than the *g* fixed by the temperament and simultaneously occurring here as the fundamental tone of the *g* string. Finally, in the third place, four additional tones sound in connection, which are somewhat lower than $\overline{b\flat}$ $\bar{\bar{f}}$ $\overline{\overline{a\flat}}$ and $\bar{\bar{\bar{d}}}$, besides a mass of others; (to say nothing of parallel fifths, or the so called forbidden fifths, which incessantly occur in connection with such associate sounds) !

If one takes all this into view, he will readily be convinced that the associated sounding of the accessory tones of a string is so far from belonging to the essential nature or to the beauty of a musical sound, that the positive *injuriousness* of such an imperfection is prevented *only by the inaudibleness* of these associated tones.

This becomes still more evident, if one considers farther, that, with the tone of *a wind instrument*, no such accessory tone occurs. Now, were the opinion in question a just one, the tone of a wind instrument would not be a proper one or at least it would not be a perfect one. Whereas, on the contrary, our ear recognizes it, not only as a real, and as a proper, but even as a particularly agreeable tone; and indeed it is very highly probable, that its special agreeableness is chiefly due to the fact itself, that it has, mixed with it, no such gratuitous, associated tones: as also the delicacy and mellowness and the peculiar flute-like character of the so called flageolet sound of stringed instruments depends unquestionably, in a great measure, upon the circumstance that there can never, or at least extremely seldom, be mixed therewith any gratuitous accessory sounds.*

And if one still farther considers, that those accessory tones which we have thus far named, occur only in *some* species of bodies, whereas in the case of many *other bodies*, *others* occur which are, to some extent, of an entirely different character, and, so to speak, musically irrational accessory tones, he will see that there is no possible ground for the opinion that the associate sounding of accessory tones, whether of the one species or of the other, pertains to the essential nature or to the beauty of the tone.

In view of this, we must pronounce it an instance of folly, though one of common occurrence, that many have imagined it necessary, in order to rendering the sound of an *organ* a proper genuine musical sound, that, together with every tone struck, there must sound at the same time accessory tones similar to those of vibrating strings, from peculiar and distinct accessory pipes (registers of *fifths*, *thirds*, and of *mixed intervals!*)

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* Comp. the article *Beitöne* in the *Encyklopädie*, above referred to, 8r. Theil, S. 380, and my *Akustik der Blas-instrumente*, which has been heretofore mentioned.

For, it is clear from what was said above, that by this means the organ sound is robbed of an advantage which it otherwise holds over the sound of stringed instruments, since we in this way give it the impurity of the string-sound, not indeed distinctly perceptible, but yet, to say the least, conferring no advantage.

But let us hear how such registers sound! Not indeed perceptibly ill, so long as enough other registers are connected with them wholly to overpower their sound: but when, on the contrary, they are concealed by so few other registers, that they can be distinctly heard, no man with ears can deny, that they produce a motley and horrible jarring of sound that is absolutely lascerating to the ear and to the feelings.

But, secondly, as it respects the assertion that such registers of the organ give a peculiar energy and keenness to the sound, I have more than once tried to convince myself of the truth of the assertion; but though, on the introduction of these registers I could indeed perceive an increase of noise, I have never been able to perceive any strengthening of the musical sound which could not have been produced at least as well, and indeed much better, by registers giving other tones—the proper tones concerned or perhaps their octaves. *Dr. Chladni* undoubtedly made similar experiments, for, he very laconically and dryly says:[*] "So far as I can judge, all mixed registers are good for nothing; for, their effect is rather to increase the noise than to strengthen, in an agreeable manner, the musical sound."[†]

Since many musically learned men have carried their veneration for these natural accessory tones of a vibrating string, so far, that they have endeavored to found and erect thereon the entire so called system of musical composition, though in more recent times there has been a partial recovery from this dream, I shall pretty soon advert to this subject again in a following remark. (Page 23.)

§ V.

I must not omit to remark, in this connection, that our use of the terms *musical sound* and *tone* is not entirely uniform.

In the first place, we sometimes employ the word *tone*, where we are speaking not merely of tones of a definite pitch, but of musical sound generally and of its nature, without reference to it as being high or low. For, we not unfrequently *e. g.* say of an instrument, that it has a strong, a fine, an agreeable, a delicate, or a rough *tone*, by which we mean only the strength, the fullness, or in general, the peculiar character of its sound. The expression, *character of tone* [*tonfarbe*], is also, as one perceives, improper.[‡]

On the other hand, the term *musical sound* [*Klang*] or the simple term *sound* is not unfrequently used where we are speaking of *sound in reference to its pitch* [*tonhöhe*], &c.

It is also among the imperfections of our musical language, that it affords us, for the designation of the entire class of sounds which we have above denominated confused, toneless sounds, sounds having no distinguishable, recognizable pitch, no distinct common name appropriate to all sounds of this sort. The above appellations are mere circumlocutions, and not properly names: while the term *noise*, on the contrary, though applicable in some cases, is not appropriate to all the varieties of this class, as *e. g.* to thunder, to the report of a cannon, to the voice of a speaker, and the like.

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[*] In der Anm. zu. § 185 seiner Akustik.

[†] *Equidem censeo!* [*So I think!*] Comp. our work, § 544, and the periodical, *Caecilia*, Band IX. S. 156; Bd. X. 143; Bd. XII. S. 190.

[‡] *i. e.* It should be *character of* MUSICAL SOUND [Klangfarbe.] Tr.

DIVISION II.

THE MUSICAL ART,—MUSICAL COMPOSITION.

§ VI.

Having in the preceding paragraphs, somewhat fully explained and illustrated the proposed ideas of musical sound and of tone, we pass now to a definition of the idea of THE MUSICAL ART.

The power of producing sounds, of expressing, communicating, and, in general, of making our feelings intelligible to others thereby, is distributed among created beings in very different degrees. Many creatures, as *e. g.* fish and worms, do not possess it at all. Others can indeed produce sounds, but still no proper tones, as *e. g.* the horse, the crow, &c. Others again are capable of producing genuine tones, as the nightingale and human beings.

Man possesses not only the power, voluntarily to produce, on the one hand, *mere* sounds, and, on the other, *musical* sounds; but he has also cultivated and improved this double faculty to a far greater extent than any other creature, and has formed for himself (1) *an art of speech*, and (2) *an art of tone or of music.*

(1.) A sound, whether it be a mere sound or a strictly musical sound, is capable, even by itself alone, and perhaps merely by its peculiar character, of expressing *a feeling*, as *e. g.* pain, pleasure, anxiety, desire, anger, &c.; though it cannot indeed express *thoughts* and *ideas*, *things* and *events*. But man has invented the art of *voluntarily articulating* the sound of his voice, *i. e.* of forming it into *words*, and of designating, by such articulate sounds, not merely general feelings, but also things, events, thoughts, and abstract ideas: he has invented *speech*, the art of expressing by *words* what he is capable of *conceiving in his mind.* Indeed, he has improved this faculty into *an art*, in the higher and appropriate sense of the word; he has learned to adjust his language to the laws of beauty, and thus has created the arts of *rhetoric* and of *poetry.*

(2.) But he moreover possesses also the power of producing *tones* (either articulate or inarticulate), and of thereby expressing feelings, and of thus, as it were, *speaking in tones.* This faculty also he has cultivated according to the laws of beauty and elevated into a proper art—*the art of music. The musical art, accordingly, consists in the expression of feelings by means of tones.*

In this definition the art is designated according to its highest and most appropriate ideal and more poetic character or operation. In the prosaic, real world, however, music is prosecuted also merely for the pleasure of the ear, except in cases where it is done with a view solely to the display of individual mechanical skill in the art; and hence, it may be defined to be *the art of agreeably exciting and entertaining the ear by means of tones.*

§ VII.

The technical *materials* of our art are, accordingly, *tones;* whether tones of the human voice or other tones.

That is to say, we have discovered the art, not merely of producing tones from ourselves by means of our voice, but of producing them also from inanimate musical instruments.

Music which consists in the tones of an inanimate instrument, is called *instrumental music. Vocal music*, on the contrary, or *the music of singing*, is that which consists of human tones, and indeed properly of *articulate* tones, where *words* are expressed in tones; (for, a singing without *words* does not properly deserve the name of vocal music, because the human throat in that case only performs the same office as an instrument. The same applies also to a singing in which the words are not intelligibly expressed, or where unmeaning words are sung).

§ VIII.

Our agency in the musical art consists in connecting the tones into one whole, in a work of art, and in thus producing a tone-representation or musical idea, *a musical composition, a musical piece*, and in short, *music.*

This agency, however, divides itself, according to its nature, into two different departments, namely, (1) *the inventive*, and (2) *the executive.*

(1.) *The inventive musical art has for its object the discovery* of tone-images or musical ideas: it is the art of inventing combinations of tones, or of constructing a piece of music, which shall express the feelings according to the laws of beauty,—the art of composing in tones: *musical composition.*

(2.) *The executive musical art* consists in the power of properly delivering or of assisting to deliver a piece of music, after it is invented, either by singing or by the playing of an instrument. It sustains the same relation to music, as declamation or dramatic representation does to poetry.

Each of the two departments of the musical art here designated can be treated either *theoretically* or *practically.*

The theory of musical composition, or *the doctrine of rightly putting tones together in the construction of music*, teaches how the tones are to be connected into a musical piece. It is the doctrine of the formation of a piece of music according to the laws of beauty.

A practical exercise in the art of musical composition is the actual invention of connections of tones or of musical pieces, according to the principles of the art.

The theory of the executive musical art consists in the rules which *e. g.* the author of a so called piano-forte school delivers to his readers, or a piano-forte master to his pupils, on piano-forte playing; or the singing-master to his pupils on the delivery of a piece of vocal music, and the like.

Practical exercise in this case is the actual delivery of a piece of music.

§ IX.

But men have not only created for themselves an *art* of speech and of tones; they have also *scientifically* investigated the nature of sound, and have referred it to its physical and mathematical principles. *(Acoustics, the Doctrine of Sound.)*

The knowledge thus obtained on the nature of *musical sound* has then been *applied to the musical art.* The relations of musical sounds to one another have been measured and computed according to the velocities of their vibrations. It has been attempted to explain therefrom the pleasure of our sense of hearing in certain connections of musical sounds, and, in general, to investigate the internal nature of the musical art mathematically; and it has even been attempted to deduce the theory of musical composition from a mathematical formula. The doctrine of musical sound, thus applied to the internal nature of the musical art, is called *Harmonic or Musical Acoustics, Canonics, Science of Musical Sounds,* and also *the Mathematical Doctrine of Musical Sounds or Tones.*

§ X.

The object of the work, of which the present Number constitutes the preparatory department, is to furnish a treatise on

THE THEORY OF MUSICAL COMPOSITION.

This subject, it is designed to treat, *in its whole compass,* though perhaps not on all points in detail. The plan pursued, in the divisions of the work, is as follows.

(1.) The first, and, in a certain sense, *the lowest* requisite in a combination of tones in a musical composition, is, *that at least it do not sound badly and offensively to the ear;* that, only those combinations of tones be presented to our sense of hearing which are most agreeable to it. This radical principle of musical composition, is very nearly allied to that in the case of rhetoric and poetry, where the first and lowest requisite is the avoidance of positive faults in language. This part of the doctrine of musical composition which has in view merely *the technical* or *grammatical accuracy and propriety* of the combinations of tones, merely *the purity of the musical language,* is, on this account, called *the doctrine of pure compo-*

sition, or *the grammar of musical language, of musical composition;* it has to do with the laws, according to which, tones, regarded as musical letters, or the elements of the musical language, are formed into syllables; these into words; and, finally, the words into a musical sense (*sensus*).

Instruction on this subject constitutes the object of the first four volumes of this Theory, which accordingly embrace *a Grammar of musical Composition*, or *the Doctrine of pure Composition*,—a work, therefore, which constitutes by itself a complete and independent whole.

(2.) *The doctrine of a pure* musical composition is followed by that of the more *artificial* compositions, of the more artificial or complicated elaboration and construction of musical phrases, of what may be considered a rhetorical analysis, a full illustration and thorough analytical examination of individual musical compositions and ideas, as it were musical rhetoric, or, if you please, *Syntaxis ornata, the doctrine of musical combinations*, or *of musical involutions.* It embraces the doctrine of the so called *double counterpoint*, of the *fugue* and *canon*, and hence whatever pertains to these; as also that of the *plan* and *form of a musical piece, taken as a whole.*

(3.) After acquiring a knowledge of musical composition without reference to *the material media of the art*, we must turn our attention to these media, *i. e.* to the nature, the properties, the extent, the limits, the capabilities and defects, the use and operation, of the different *instruments* for the practical execution of the music composed; and consequently we here embrace as well *the human throat* (*the voice*), as the inanimate or external *musical instruments;* and this comprises the doctrine both of *vocal composition*, and *of instrumental composition* or *instrumentation.*

A particular and separate branch of the doctrine of vocal composition is made out by that of a correct *accentuation*, of *scansion*, and of *declamation.**

(4.) After all the technical topics embraced under these divisions have been exhausted as completely as possible, then follows finally *the aesthetics*† *of musical composition*, or *the general doctrine of beauty in music;* and also *criticism.*

REMARK.

I must be permitted to explain myself somewhat more particularly upon some of the foregoing views.

In the first place, *upon the foregoing division of music in general*, against which a very plausible objection has been raised. It has been objected to me, that the theory of musical composition can in general be divided only into *two* parts—into *Grammar* and *Aesthetics;* inasmuch as the former teaches to *avoid* whatever stands in the way of beauty, and the latter teaches to *do* whatever produces beauty: a third, intermediate department between the two, cannot exist.

The objection is subtile and quite plausible, but yet not well founded. Who will say of a student, that he wants nothing to make him a poet, except the Aesthetics of the art of speech, when he has merely completed the grammar of a language and now understands how to construct a grammatical sense (*sensus*) *without linguistic faults?* Is he not, previously to coming to the study of Aesthetics or the doctrines of taste, first to attend to a multitude of technical doctrines, to acquire a mass of technical facilities, as *e. g.* scansion, the construction of verses, rhyme, forms of poems, and the like; all which belongs neither to Grammar nor to Aesthetics, but between the two? Or who will say of a student of musical composition, that he now only needs to possess himself of Aesthetics in order to have completed the entire theory of composition, when he has only as yet learned to write a four voiced composition without faults, while he does not understand how to construct the simplest imitation, and much less the more difficult contrapuntic involutions, fugues and the like? Surely no one! *He is not yet familiar with the technics of the art*, of which the Grammar only composes a part, and to which, in addition to the grammar, belong also double counterpoint, the doctrine of the material media of the art, and much else, all which certainly cannot be reckoned in the aesthetics of musical composition. Thus, not only the grammar, but *this whole technical department* stands contra-distinguished from aesthetics. It is *not Grammar and Aesthetics* that, taken together, constitute the province of the doctrine of the musical art, but it is *Technics* and *Aesthetics:* the Grammar is only a part of the first, and to say that Grammar, connected with Aesthetics, constitutes the entire province of the theory of the art, is to confound the ideas of Grammar and Technics.

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* Comp. the article *Betonung* in der allg. Encykl.

† This word, taken from the Greek *Αισθητικὸς* [*possessing a delicate sensibility, having a capacity for acute perception and feeling*], has become extensively used in German literature as a technical term, and means, as thus employed, the doctrines of *taste* and of *sentiment*—the doctrines which develope the principles of beauty in the fine arts. Inasmuch as the term expresses a very important department of musical science, and since we have no word in English that will supply its place, it is thought desirable to transfer it to our musical language.—Tr.

If however one is disposed to take the term *musical Aesthetics* in so wide a sense as to include therein double counterpoint, the instrumental department, and the like; then I have no objection to allege. More will hereafter be said on this subject, at its proper time, in the discussion of the doctrine of Aesthetics itself, and particularly on the definition of Grammar and Aesthetics, as negative and positive.

I must also vindicate myself on the allegation, that, according to the foregoing division, *harmonical acoustics, and in particular the mathematical doctrine of intervals, is not mentioned as a part, and much less as the basis, of the doctrine of musical composition.* For, most teachers of musical composition imagine that the theory of musical composition must necessarily be founded on harmonic acoustics, and, on this account, commence their books of instruction with arithmetical and algebraic problems and formulas! But this seems to me, calling it by its proper name, nothing else than a mass of empty vagaries and an unseasonable retailing of erudition,—pedantry. For, one may be the profoundest musical composer, the greatest contrapuntist; one may be *a Mozart* or *a Haydn, a Bach* or *a Palestrina*, without knowing that a tone is to its fifth as 2 to 3: and it is, in my honest conviction, a mistake of teachers of musical composition, betraying a decided want of understanding of the subject, to mix, as they do, with the doctrine of musical composition, such demonstrations by fractions, powers, roots, and equations, and other mathematical formulas, from which *to proceed* in teaching the theory of *musical composition:* to me it appears just as it would for one to commence a course of instruction in painting, with the theory of light and colors, of straight and curved lines; musical instruction, with the study of harmony; and instruction in language, with the philosophy of speech; or, to demonstrate the principles of grammar to a child, in order to teach him to say—papa and mamma.

But such an unseasonable, scholastic procedure is moreover doubly unsuitable, for the reason that the entire mathematical treatment of the doctrine of musical composition seems an illusion in itself, even when viewed in its appropriate attitude.

Without wishing here to furnish the proof at large on this point, I will satisfy myself with referring only to a single example in the case of the so called *formation of the scale*, and the construction of the several degrees or pitches of sound from aliquot parts of the length of a string, and from the aliquot tones of wind instruments, or, which is the same thing, from the natural series of numbers 1, 2, 3, &c, corresponding to the relations of vibrations, with all which the theorist conceives himself obliged to commence the doctrine of musical composition, for the sake of exhibiting his profoundness, or *eruditionis et decori gratiâ*, while yet *in this very case* the inadequacy of the mathematical operation is strikingly apparent. Let the scale of C-major be formed from the aliquot parts of a C-string, or from the natural tones of a C-trumpet, and both give, as also the numerical relations 1: 2, 2: 3, &c, not only, neither a pure *a*, nor a tolerable *f*, but, instead of *the b* which is appropriate to the scale of C, $b^\flat$, which is foreign to that scale, or, strictly, a tone which is not at all appropriate to our system of sounds; or, if we regard and treat it as $b^\flat$, the resulting series of tones rather takes the character of the scale of F, so that the so called C-trumpet might in a certain sense be styled an F-trumpet: though even this again will not be exactly appropriate, because in the trumpet the tone *f* likewise is not found pure, but only a corrupt intermediate something—a vicious neutrality between *f* and *f*♯; and so, in like manner also, there is no pure *a*—Many, as *e. g. de Momigny*, and, more recently, *Schicht*, aware of this evil, have sought to derive the major scale from the harmonic tones of *the dominant*, which, taken thus, does indeed sound somewhat better, and yet even in this case the tones *f*, $b^\flat$, and *a* always are found false again.

But what would it amount to, if we could see the major scale developed from nature, so long as *the minor* scale would still always be formed by an arbitrary displacing of the thirds, or by other arbitrary depressions, and thus must still always appear as a thing *artificially made*, as something that is arbitrary, as a structure of human intelligence?

For, observe how *e. g. Rameau*, *d'Alembert*, *Marpurg*, and others tug and twist and worry themselves, to deduce the origin of a minor tonic threefold chord from nature!—Nature itself,—so they teach,—causes us to hear, in the transverse vibrations of a C-string, the associated tones c g $\bar{c}$ $\bar{e}$ $\bar{\bar{g}}$ (and many others besides!—and, in the vibrations of other bodies, tones again which are entirely different)! Thus, a major threefold chord is given us by nature itself; since, in connection with the fundamental tone of a transversely vibrating string, it allows us to hear also the large third and the fifth of this tone. *A small or minor* threefold chord,—thus they proceed,—is indeed in no case thus produced, since neither a string nor any other body, lets us hear in connection with its fundamental tone also *the small* third, as an accessory tone: but if we take the slight liberty to alter the chord *C e g* into *C* $e^\flat$ *g;* though the *e* flat is indeed no natural accessory tone of C (thus *not* shown by nature as the third of *c*), yet *g* is an accessory tone of an $e^\flat$-string: and therefore (!!!), because the fifth of C is at the same time also the large third of $e^\flat$, and, in striking a G-string, as well a C-string as also an $e^\flat$ string causes a *g* to vibrate in connection,—therefore *the combination of tones C* $e^\flat$ *g* is the same as derived from nature itself. This is plainly manifest.—The major threefold chord is natural, for the reason that the two higher tones are aliquots of the fundamental tone; but the minor threefold chord is natural, because, vice versa, its fifth is an aliquot of each of the two lower tones (namely the fifth of C and the third of $e^\flat$). The latter is merely the exact converse of the natural, and consequently is also entirely natural.—The major threefold chord is given by nature itself in virtue of the fact that one and the same string actually causes such a combination of tones to be heard: and, on the other hand, the minor threefold chord is also to be regarded as given by nature, because, though a C-string causes no $e^\flat$ to sound in connection with it, yet an $e^\flat$ string causes, among many other sounds, a *g* (as third) to be heard, and *consequently* (!) the combination of tones *C* $e^\flat$ *g*, is indisputably given by nature itself.

If, in such or in a similarly conclusive course of reasoning, one has once obtained a major and a minor threefold chord, nothing is easier than to find for each of them an appropriate scale. One has only to connect with a major threefold chord also the major threefold chord of its fifth and its fourth, (and indeed these and these only, for the simple reason that they are better adapted to the purpose),—and thus one has obtained a major scale and that too in due form and order, direct from the hand of nature; and so also, a minor scale, if he but connects with a minor threefold chord the minor threefold chord to its fourth, and, at one time the minor, (for so they teach), at another time the major threefold chord, to its fifth.

Having laid down such and similar hypotheses, in part utterly irrelevant, and in part arbitrary in other respects, one then ventures to exhibit a system of instruction, which, glistening with the appearance of being mathematically based, is rendered the more dangerous, the more it is attempted to give it the color of a systematic derivation and of being the result of an infallible deduction, as our teachers of the art are so ready to do.

Among the finest of all in this department is perhaps the above mentioned *de Momigny*, in his work under the very modest title: “*Cours complet d'harmonie et de composition, d'après une théorie neuve et générale, basée sur des principes incontestables, puisés dans la nature, d'accord avec tous les bons ouvrages pratiques anciens et modernes, et mis par leur clarté à la portée de tout le monde.*” “*A complete course of harmony and of composition, according to a new and general theory, based on the incontestible principles drawn from nature, in accordance with all the valuable practical works both ancient and modern, and brought by their perspicuous clearness within the reach of the whole world*,”—an author who is doubtful on no point except only the single question: “*Mais me pardonnera-t-on de divulguer le secret que j'ai surpris à la nature?*” “*But shall I be pardoned if I divulge the secret which I have caught from nature?*”

For my own part I choose rather to relinquish the vain glare of a profoundness which after all finally proves itself inadequate, and in particular, the appearance of a mathematical treatment of the subject, and in accordance with my views already expressed in the Heidelberg Annual Registers of Literature of 1811, No. 66; 1812, No. 65,—to cull from the theory of musical composition whatever can be of utility as rational musical knowledge.

§ XI.

The design of the present little work* is not to teach the principles of musical composition, but to furnish, by a process of developement from fundamental, elementary ideas, a clear and intelligible presentation of the general matters of musical instruction, or that general portion of musical knowledge with which every one who has to do with music, whatever be the department to which he devotes himself, ought to be acquainted.

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* *i. e.* The present number of the entire work.—Tr.

CHAPTER II.

PRELIMINARY.

DESCRIPTION OF OUR SYSTEM OF TONES.

DIVISION I.

THE RANGE AND GRADATIONS OF TONES IN GENERAL.

§ XII.

As the empire of the musical art embraces the entire compass of all perceptible tones, it must at once be perceived, that the realm of tones is unlimited both in number and in variety. For, the ideas of *high* and *low* being merely relative, we can conceive not only of an indefinitely high, but also of an indefinitely low tone: we can also conceive the difference of the height of one tone from that of another, to be indefinitely small, as *e. g.* between a tone and its octave there may be an unlimited number of different tones, each of which is higher or lower than another only by an infinitely small difference; and in this way the number and variety of tones would clearly be unlimited.

But, in our musical compositions, we can make no use either of that unlimited range of tones on the one hand, or of this infinitely small difference of their pitch, on the other.

We can make no practical use of the former, inasmuch as our ear is incapable of apprehending and distinguishing tones that are high or low beyond a certain point. That is to say, the human organ of hearing can only recognize those vibrations as sound, which are neither too slow nor too quick.

According to Chladni,* it requires at least from thirty to thirty-two vibrations in a second, to make the vibratory motion perceptible to the ear. This accordingly is the lowest tone which admits of being brought into use; while, on the other hand, the highest is perhaps that which is situated nine octaves above the former and which hence, consists of 16,384 vibrations in a second, so that thus the latter accomplishes 512 vibrations in the same time that the other accomplishes one. Much in the same way, though somewhat more extended, are the extreme limits of perceptible tones given by William Hyde Wallaston, in the Philosophical Transactions for 1820, P. II. p. 306 et seq. and in Thomson's Annals of Philosophy, 1820, p. 145, —that is to say, they state the extreme limits at about nine octaves and a half.

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* In his Treatise on Acoustics, § 3.

In this way, then, the kingdom of tones is reduced to determinate limits in respect to *compass.*

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§ XIII.

Moreover, the endlessly numerous and equally diversified gradations in the pitch of tones are not practically employed in music, but, as every one knows, only certain determinate tones are used: or, in other words, we by no means employ, in framing a musical composition, all those nice gradations or rather shadings of low and high, but each of the tones of which a musical composition consists is higher or lower than another by a certain marked difference. We do not use the endlessly numerous diversities which *e. g.* are possible between a tone and its octave, but only eleven different tones between these two degress, so that reckoning from any tone, assumed as the first degree, the thirteenth above is always the octave to it.

The easiest method of furnishing a clear and sensible illustration of this point is supplied by the keys of a Piano-Forte. Here, with whatever key we begin, the 13th above is always its octave, while between these two there lie only eleven tones, and the endless multitude of other tones which are still farther conceivable between a tone and its octave—or even between the tone of a key and that of the key lying next to it—are not employed.

The difference of pitch, however, between two tones of neighboring keys is always equally great (whether that difference be from a long key to a short one or vice versa, or from one long key to another, when there is no short key lying between.) (There is, it is true, a very slight variation from such a uniform equality of tones, which does not here come under consideration, and which is more fully and particularly treated in the doctrine of musical temperament.)

These tones, equi-distant from each other, are, in respect to the keys allotted to them, arranged in a certain specific manner; namely, a part are appropriated to long keys and a part to short, and that too not in a constant and uniform order, always giving one tone to a long key and the next following to a short one, but in the known arrangement denoted by the following set of asterisks:

    *   *   *   *   *   *   *   *
*   *   * *   *   *   * *   *   * * &c.

So that, as we perceive, sometimes two tones immediately following each other are set to two long keys.

The ground of such an arrangement of our Piano-Fortes will be made clear hereafter. For the present, suffice it to say simply, that in this apparent irregularity, there is still an order and a uniformity of succession, at least so far as this, that a uniformly alternating succession of long and short keys repeats itself for the distance of all twelve keys: *i. e.* one may begin with whatever key he will, still the succession of long and short keys, reckoned from the thirteenth onward, will always be again just the same. The long and the short keys follow successively from the octave onward again, after the same order precisely, as they succeeded one another from the first onward; and so in like manner again from the 25th onward, &c.

REMARK.

The more specific reasons for this cannot here be explained, because they depend upon the internal nature of our scales and keys, which again cannot be explained *before* the explanation of the system of tones, since it would be impossible to treat the doctrine of keys in an intelligible manner without having previously made known the degrees of our system of tones.

DIVISION II.

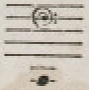
NAMES OF THE TONES.

§ XIV.

As a means of naming the different tones, it is usual to employ letters of the alphabet.

Not every tone however has a distinct letter for its name, but only those which belong to the *long* keys: the short keys must obtain their names by borrowing them from the long keys, which lie next to them.

Hence we will first learn *the names of the tones of the long keys.*

We will commence our enumeration with the tone which performs about 128 (four times 32) vibrations in a second, (whether a few more or less, just according as a higher or a lower tuning is assumed). In order to associate this abstract designation with something that is already clearly known to the reader, it may be remarked that this tone is the one that is produced by the lowest string of a violoncello, or the lowest C of the Bassoon, or the C which the lowest human voice can (though with difficulty) reach, and which, in our written music, is presented in the following form: 

This tone is called *the great* C. The next following long key has the name *great* D; the next, great E; the next, great F, and so on, G, A, B:

```
     *     *           *     *     *
  *     *     *     *     *     *     *
  C     D     E     F     G     A     B
```

The eighth long key, following these first seven, which, as we have already seen from § XIII, is the octave of the first, is, like this, again called c, with this difference, however, that the latter is not called *great* C, but *small* c. The next following tone, as the octave from D, is called small d; and so of the rest: small e, f, g, a, b, as far as to the eighth, onward from the eighth, (*i. e.* to the fifteenth from C,) which again is also designated by c, but with a mark over or under it for the purpose of distinction, thus $\bar{c}$, and hence it is called *the once-marked* $\bar{c}$; and so on: once marked $\bar{d}$, $\bar{e}$, $\bar{f}$, &c. and then through the *twice*-marked and *thrice*-marked letters, thus: $\bar{\bar{c}}$, $\bar{\bar{d}}$, $\bar{\bar{e}}$, $\bar{f}$, $\bar{\bar{g}}$, $\bar{\bar{a}}$, $\bar{\bar{b}}$, $\bar{\bar{\bar{c}}}$ &c.

To designate the tones which are lower than the great C, we use the additional appellation "*contra:*" e. g. *Contra* B, *Contra* A, &c.—or we put a stroke *under* (or perhaps *over*) the *large* letters; *e. g.* $\underline{B}$ (great once-marked B,) $\underline{A}$ (large once-marked A), $\underline{G}$, $\underline{F}$, $\underline{E}$, &c.

Not unfrequently the whole collection of tones from contra $\underline{C}$ to contra $\underline{B}$ is designated by the expression: *Contra Octave*, while the tones from great C to great B are called the great octave; and so on: *small octave*, *once-marked octave*, *twice-marked octave*, &c.

§ XV.

There is still another method of designating tones according to their different pitches which is borrowed from the registers of an organ and is used chiefly in reference to organ tones, though it is sometimes also applied to other instruments and used to designate the pitch of tones generally.

This method of naming depends upon the circumstance, that an organ pipe (a labial or lip pipe) must be 8 feet* long to produce the tone represented by the great C. From this circumstance the great C obtains the name *eight-feet* C or C-*eight-feet*. This appellation is thence given to the tones of the following keys: D, E, F, G, A, and B; (*improperly*, it is true, because all these tones after C are not eight-feet tones, but require progressively shorter pipes): and the collective mass of the tones from C to c, exclusive of the latter, is thus called the *eight-feet octave*.—The small c, which is only half so low as the large C (§ III. p. 12.) and therefore requires a pipe only half as long *i. e.* four feet in length, (§ III. at *a*) is accordingly called *the four-feet* c; and so of the rest: four-feet d, four-feet e, f, g, a, and b; and in a similar manner are explained the expressions *two-feet*, *one-foot*, *half-foot*, &c. as applied to the tones;—also *sixteen-feet*, and *thirty-two-feet*.

It may serve as an aid to the memory, to observe, that the thirty-two feet C is precisely the tone which performs about 32 vibrations in a second.

= The more full and particular treatment of this subject and also of the meaning of the expressions—*eight-feet*, *four-feet*, *sixteen-feet*, *six-feet*, etc. *instruments*, or *organ registers*, belongs to the doctrine of musical instruments and instrumentation.

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* Nuremberg measure =7.968 ft. Eng. measure.—Tr.

§ XVI.

It is perceived moreover from what precedes, that the succession of letters employed for designating the pitches of the tones, repeats itself in the same manner and according to the same order, as we above saw the series of the long and the short keys repeat itself (§ XIII.), namely from one set of 13 keys to another (from 8 to 8 long keys), *i. e.* always from an octave or a tone, onward to an octave or a tone which is twice as high* as the one twelve keys lower; or, in other words, the series of the letters is repeated with every renewed application of the measuring scale,† and thus the once-marked c̄ is but a diminished image of the unmarked or small c, d̄ is a repetition in miniature of d, ē is a miniature likeness of e, &c.

§ XVII.

Now in the manner described above, all the tones of *the long keys* are furnished with names from the letters of the alphabet.

The tones of the short keys, however, have, as we have already observed, no distinct letter names of their own, but borrow their names from their neighbors. The name of the tone between C and D, *e. g.* is either borrowed from the next lower tone C or from the next higher tone D. In the first case, the character called a *sharp*—♯—is attached to the letter C; in the second, the character called a *flat*—♭—is attached to the letter D; *i. e.* the tone between C and D is presented either as an elevated C and hence is called C sharp—C♯, or as a depressed D and hence is called D flat—D♭. The same applies also to D♯ or E♭, A♯ or B♭, &c.

The question whether these names are chosen with strict propriety and appropriateness, we will consider farther and somewhat more particularly under § XX.

Many, regarding and naming these tones of the short keys, as if not possessing any distinct pitch of their own, but always only as elevations or depressions of the lower or higher long keys lying next to them, are accustomed to denominate them *Semitones* or *half tones,* and also *dependent* or *derived tones,* (in contradistinction from the rest, which they call *independent* or *natural,*) and also *chromatic* tones.

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* "*Twice as high*" means *an octave higher*. The expression is derived from the fact that a tone which is an octave above another makes twice as many vibrations in the same time. See § III.—Tr.

† Suppose a rod or stick to be cut of such a length as to extend over twelve keys of the piano-forte or organ, (*i. e.* 7 white keys and 5 black, making together one complete octave.) Let this rod then be applied to any set of twelve keys and it will include all the seven letters employed in denoting tones; then let it be taken off, and carried its whole length towards the right and applied again, and thus it will cover that same set of letters again; and so on, as often as this rod is renewedly applied, the seven letters repeat themselves an octave higher; and if the rod be moved in the opposite direction, it will describe the repetition of the same set of letters each time an octave lower.—Such is the idea designed to be communicated by the author in the above passage.—Tr.

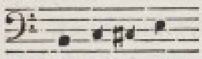
We shall find in the sequel, that these appellations are not entirely correct, though we will nevertheless retain the term *natural tones* to distinguish the tones of the long keys.

REMARK.

The technical term *chromatic* occurs in the language of our art in so many different applications and often in so essentially different senses, that it may be well worth while in this place, where we use the term for the first time, specifically to present its different significations in a connected view.

The Latin word *chroma*, from the Greek *χρῶμα*, in English *color*, is used also in the language of the musical art, and that too in a quite figurative and very variable sense.

(1.) The ancient Greeks used the word *chromatic* to designate a certain system of tones—the chromatic system—*genus chromaticum*, a thing of which we can at the present period form no conception. Its scale should have been as follows:



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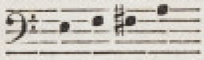

The figurative name *chromatic*, *i. e. colored* system of tones, should moreover, as it would seem, have arisen from the circumstance that it was customary to write the tones belonging to this system with a different colored ink from that of the rest.

(2.) It was moreover practised in later times, partly, no doubt, in pursuance of a train of related ideas, to call the short or higher keys of our piano-fortes, which were, as they still are, distinguished by a different color from the long or lower keys, *colored keys*, (more learnedly "*chromatic*" keys,) and to name the tones of the same, "*chromatic tones.*" Consequently,

(3.) These appellations were transferred also to other instruments by naming, in general, those tones which were given on the piano-forte by chromatic keys, *chromatic tones*, even if they were given on other instruments or were sung; and thus *e. g.* the tones c♯, d♯, b♭, and a♭, and the like, were called by the general term chromatic tones, which name accordingly designated every so called *semitone*, *i. e.* every tone which was not contained in the series of the so called natural tones. In consequence of this usage of language

(4.) The elevation or depression of a tone by a chromatic transposition-sign*—was termed *a chromatic elevation* or *a chromatic depression*, or in general *a chromatic transposition*, and thus

(5.) The signs ♯ and ♭, × and ♭♭, were denominated *chromatic signs*, and this term was extended also to

(6.) The chromatic *retraction* or *neutralization* sign, the natural—♮, and also, *though improperly*,

(7.) To *the chromatic* designation at the beginning of a piece of music [the signature],—and, in entire accordance with such a usage of language,

(8.) Every transposed key, every key in whose scale one or more so called chromatic tones occur and in which of course a chromatic signature is requisite, may be called a *chromatic key*.

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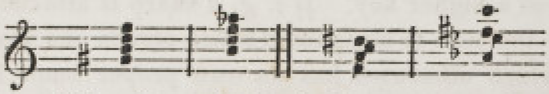
* "*A chromatic transposition-sign*" is a *sharp*, *flat*, or *natural*—♯, ♭, ♮, or the same doubled, as ×, ♭♭; *i. e.* it is any sign which removes a tone from its place by either raising or lowering it.—Tr.

(9.) According to the received usage of language, we might farther also call *the difference, the distance between tones*, the interval by which a so called natural tone is raised or lowered by a (simple) chromatic transposition, *a chromatic difference of tones* or *a chromatic interval*, and thus g♭—g, *e. g.* or g—g♯ would be chromatic intervals; (g♭—g♯, a♭—a♯, f—f× and the like might then be called *a double* chromatic interval): and in this sense the term chromatic interval is synonymous with the term superfluous prime, or with the term (ambiguous in itself, it is true) *half-tone* or *semitone*, which moreover for this very reason is often called CHROMATIC *half-tone;* (Comp. § XXXVII. and § XXXVIII. No. 1.)

(10.) Again, in another sense, *all* intervals which do not occur in the series of the so called natural tones, but in every instance require at least one chromatic transposition-sign, and thus, not merely the superfluous prime, mentioned in No. 9, but superfluous seconds, superfluous sixths, diminished sevenths, &c. may be called *chromatic intervals*, as also

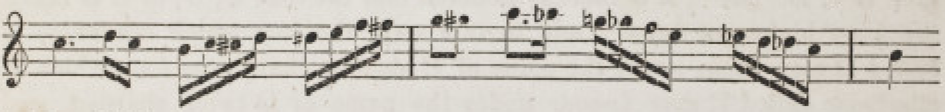
(11.) Every *chord* which, in like manner, can not be expressed without a chromatic sign, as *e. g.*



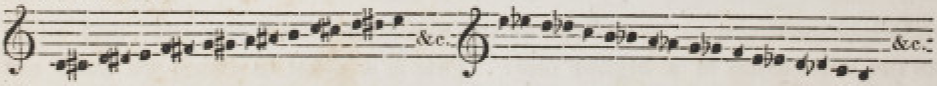
and the like, may be called a *chromatic chord*. Comp. §§ 86 and 93.)

(12.) But as the tones of the long keys may also occur as chromatically transposed tones, as, *e. g.* b♯, c♭, e♯, f♭, f×, d♭♭, &c., these tones must also in such cases have the name chromatic.

(13.) Besides, every series of tones moving by chromatic intervals, as *e. g.*



is also called a *chromatic series of tones, a chromatic melody;* and it is said also of *a piece of music*, that it is *chromatic*, or *very chromatic*, when many chromatic signs occur in it, that is to say, many chromatic series of tones, chromatic chords, or many modulations (which of course always furnish occasion for chromatic transposition-signs).—(The idle prating which is not unfrequently heard in respect to a *chromatic scale*, a *genus chromaticum*, so far as anything farther is concerned than what has been said here and previously under No. 9, amounts after all to nothing that can be relied upon, and is really without any avail; (Comp. § 127 and 369;)—and while it is true that every chromatic series of tones, *i. e.* every series of tones, each of which is separated from its neighbor either by a superfluous prime or by a minor or small second (both which intervals are in the system of our musical temperament practically the same), as *e. g.*



may be *figuratively* called a chromatic scale, and is often heard to be *really* thus named, still it is to be remembered in this case that such a name for a series of tones consisting partly of chromatic and partly of diatonic half-tones, as they are called, is applied to a thing radically different from a scale [scale of a key] in the proper sense of that term.

(That a similar impropriety and whim have likewise had a hand in the senseless words *enharmonic* scale, *enharmonic* genus of tones, *genus enharmonicum*, we will also endeavor to show at the proper time.)

(14.) Not unfrequently the term chromatic is also properly applied to other things. Thus *e. g.* to instruments on which chromatic tones and melodies can be produced, is applied the recommendatory title—*chromatic instruments*, as, for instance, the French-horn, furnished with keys, is called a *chromatic horn*, because the so called chromatic tones (see No. 3 above) can more easily be given on such a horn than on the usual ones.

(15.) Finally the terms *chroma*, *bis-croma* and *semi-chroma* may perhaps have had a derivation *allied* in some measure to all the foregoing significations and uses. (See the remark at § XLVIII.)

§ XVIII.

Inasmuch as sharps and flats elevate or depress the tone to which they are applied, by the distance of one key, it follows, that by their means a *long key* itself may sometimes be named as an elevation of a lower key or as a depression of a higher key. If *e. g.* a sharp is attached to the tone E, making it $E^{\sharp}$,— the tone is designated which stands one key higher than E, and this key, which otherwise has its own proper name F, appears thus under the (chromatic) name of E *sharp*, a name borrowed from E. In like manner, the tone which othewise is called E can also occur under the name of F *flat*, the C key can appear as $B^{\sharp}$, and the B key as $C^{\flat}$.

If a *double* sharp or flat is attached to the name of a key, *e. g.* C+, D+, E+; $C^{\flat\flat}$, $D^{\flat\flat}$, $E^{\flat\flat}$, it is thereby denoted that the tone C, D, or E is taken *two* keys higher or lower; and in this way, the key which otherwise is called D may occur under the name of C double sharp, the tone which is otherwise called E may appear under the name of D twice sharped, and that which is otherwise known as F sharp may occur under the name of E twice sharped; so likewise the tone of the key otherwise called B flat may occur under the name of C twice flatted; the tone which is otherwise known as C, may appear under the term D twice flatted, and the tone which is otherwise called D, may occur under the designation E double flat. So also, F×, G×, A×, B×; and $F^{\flat\flat}$, $A^{\flat\flat}$, $G^{\flat\flat}$, $B^{\flat\flat}$.

§ XIX.

When must a tone be written as the elevation of a lower one, and when as the depression of a higher one? This is a point to which we have not yet attended. For the present it is sufficient to know that sometimes the one takes place, and sometimes the other, just according to the different relations under which the tone occurs.

It may however be farther observed in respect to this matter, that such a tone should not properly sound so high in the first case as in the second, *e. g.* the key between C and D, when it occurs as C sharp is not quite so high as when it appears as D flat, $F^{\sharp}$ is not quite so high as $G^{\flat}$, $E^{\flat}$ is not so low as $D^{\sharp}$, $E^{\sharp}$ is not quite so high as F, $F^{\flat}$ is not quite so low as E, C+ is not quite so high as D or $E^{\flat\flat}$ &c; this difference between $C^{\sharp}$ and

D♭, F♯ and G♭, and the like is called an *enharmonic difference;* these differences however are extremely small and thus imperceptible to our ear, and we may with entire propriety and convenience have but one and the same key for all tones differing only enharmonically, (they may also be called *enharmonically parallel tones,*) thus only one and the same key for C♯ and D♭, for A♯ and B♭, for C× and D and E♭♭, &c.

Whatever be the bearing of this circumstance in other respects, in one certainly it is very convenient; for if, instead of the mere twelve keys which we now have within the compass of an octave, we should have a distinct key exclusively for C♯ another for D♭, &c, one for E and another for F♭, and still another perhaps for D×, &c, our piano-fortes must be overloaded with an endless multitude of keys.

This subject will be more perfectly treated in the doctrine of temperament, § 182 of the Theory.

§ XX.

Before we leave the chapter on the names of the tones, something must be said in answer to the question: Why are the letters which we use in the designation of tones employed in a different order from that in which they occur in the alphabet? *i. e.* why do we not reckon them in their natural order A, B, C, D, E, F, G, instead of beginning with C, thus C, D, E, F, G, A, B?

The answer to this question does not strictly belong to the theory of musical composition; yet, for the benefit of those who may desire some explanation on this point, the following observations are here presented.

The entirely undesigned and irregularly jumbled succession of the letter names of the notes has no foundation in the nature of the case, but is merely the result of the following accidental circumstance. The ancients, according to the account given us by our musical historians, named the lowest tone used in their music, A, and for this reason regarded this A as the first tone of their system, as it were a normal tone, and regarded the series of tones which began with A (the so called *Aeolic scale*), as a normal series. The tones of which this so called scale consisted were those which we now call A B c d e f g a b &c. These tones originally had Greek names, and perhaps even still more ancient ones.

As the limits of the tones used in music became afterwards indefinitely extended, and especially so downwards, far below A, this letter of course ceased to be the lowest tone used; and moreover (for reasons which will appear in the doctrine of the keys) the tone C was promoted to the office of principle and normal tone, and consequently it ceased to be the point whence the reckoning commenced, and C became that point. By this means the regular series of letters became displaced in the following manner:*

☟

C D E F G A B c d &c.

---

* The letter H is employed in Germany in the place of our B, to denote the seventh tone in what we call the natural scale; while B is employed by the Germans in the place

DIVISION III.

AMBIGUOUSNESS OF THE TONES.

§ XXI.

According to what has hitherto been observed, it appears that every key of our piano-fortes is, in a certain sense, equivocal, and even *ambiguous:* [*i. e.* every key admits of being regarded under two or *more names.*]

---

of our B♭. In connection with the subject above discussed, the author also goes into an examination of the question, why H should be employed next after A instead of B, which would naturally occur in that place; and though the investigation of such a subject is of the less importance to us, since we do not adopt the usage in question, still, as it cannot fail to be interesting on the ground of the general information it involves, it is thought advisable to give it a place in the translation.

To the questions; "Why does not the name B occur in the series of the so called natural tones? Why does H stand after A instead of B? and Why does the letter B first make its appearance merely as the name of a so called derived or chromatic tone?" the author replies as follows:

"When the letter-names first began to be applied to the series of the natural tones, they were distributed to the latter entirely in their natural alphabetical order, as follows: A B c d e f g a b, &c. in which case the tone that we now call H, was B.

At length [for reasons stated in the text above] the order of the letters became changed in the following manner:

☟

C D E F G A B c d &c.

Yet in this arrangement the letter B still continued to denote what is now designated by H. A tone B, which, like the B used at the present day, should be but a single key from A, though two keys from C, was not at that time known; and in general the so called chromatic tones of our system were not then in use.

The want of these, however, must soon have been felt, and the first chromatic tone that was introduced seems to have been that which we now call B, and thus a B which was one key lower than the previous B.

Still, this newly introduced B was likewise called B. Accordingly, both these tones, although essentially diverse, were presented as two tones of different pitches on one and the same degree of the music lines, and thus the degree called B had now two different tones. Thus there were two different Bs, the original one, which corresponds to our present H, and the new lowered B, which answers to our present B.

Now for the sake of distinguishing these two different Bs from one another, the newly introduced depressed B was named *soft* B, (B molle, from which was derived the French word *Bémol* still in use), and also B-*fa;* while, on the other hand, the original B, corresponding to our H, was termed *hard* B (B-*durum*, B-*mi*, and in French B *dur.*) —Moreover, every melody in which the former B occurred was at that time called *cantus* B *mollis*, or briefly *cantus mollis;* whereas a melody in which the higher B occurred was termed *cantus* B *duri*, or *cantus durus.*

We are accustomed to apply the term *ambiguity* to a case involving the possibility that one thing may be explained in more than one way, or to an object which is of such a nature as to admit of being at one time taken for one thing, and, at another time, for another thing. Hence every key is ambiguous, inasmuch as one and the same key may present itself and may be employed, at one time, in one character and relation, and, at another time, in a different character and relation; *e. g.* the same key may at one time be F# and again G♭, a key may be D# and also E♭, a key may alternately be E, D×, and F♭, &c.

In the sequel we will advert to this *enharmonic ambiguity of the tones* again.

Soon, however, the inconvenience of thus giving the same name to two different tones must have become obvious, and a determination must have been conceived to effect a change on this point, and to designate one of the two tones by the name of a distinct letter. The nearest unused letter was selected for this purpose. But, strange to tell, instead of leaving to the original, natural, high B, its own hereditary name, and of giving the name H to the newly introduced lowered B,—the natural B was robbed of its proper hereditary name and forced to bear the name H instead thereof, while the name B, which had before designated the original, natural B, was conferred upon the new lowered B. After such an exchange of names the same series of tones which had previously been represented by the series of letters.

☟

C, D, E, F, G, A, B, c, d, &c.

now became represented by the series

☟

C, D, E, F, G, A, H, c, d, &c.

The turn which not only gave a distinct and peculiar letter name to a tone which arose from a mere chromatic change, but also fixed upon an exchange of names, was not in itself a particularly felicitous event; and if, on the introduction of the other chromatic tones, as, e♭, e#, a♭, a#, g♭, g#, f×, &c. (in which case every degree involves three or more gradations of sound), the course of procedure had been of the same character, so destitute of plan and of logical consecutiveness as it was in the case of the tones H and B, we should by this time have had a strange chaos of note names! Fortunately however a more suitable idea was soon conceived. It was, to apply to every new tone arising from a chromatic alteration of a tone previously known, the radical name of the latter, *i. e.* of the tone from which it originated, and to distinguish it from that tone only by the sign of chromatic alteration or by the appended syllables *is* and *es;* and thus every chromatically derived tone pointed back, by means of the retained radical name, to the tone from which it was derived by a chromatic alteration.

According to this altogether more appropriate and logical plan, the lowered H should have been called H flat or Hes. Indeed, the proper, hereditary name B might have been perfectly well restored to the original natural B (our present H), so that the natural series of tones would have again become

☟

C, D, E, F, G, A, B, c, d, e, f, g, &c.

in which case the tone which we now call B would have appeared as a lowered B, Bes. The German usage, however, has persisted in employing the name H for the original,

DIVISION IV.

MANNER OF WRITING THE TONES IN THEIR DIFFERENT PITCHES.

(A.)

Note-Lines or Staff.

§ XXII.

Thus far we have considered the tones and their names. We will now turn our attention to *the written signs* of the tones,—to those symbols by which the tones employed in a piece of music are presented to the eye.

The simplest, though at the same time, the rudest method of musical notation would be that of writing the names of the tones by means of the letters themselves. And indeed, in more ancient times, previously to the discovery of our present notes, music was actually written in this way. But the unwieldliness of such a mode of writing must soon have become apparent, and some better way must accordingly have been sought.

Thus the idea was conceived, of representing the different elevations or pitches of tones by means of *lines*, and the tones *by points or circles*, and the like, (*i. e. notes*,) *on and between the lines.* The general outline of such a mode of notation is shown by the following diagram:

---

natural B; and the name B for the lowered B. Hence, the series of natural tones, as they are called, continues to this day to be as follows:

☟

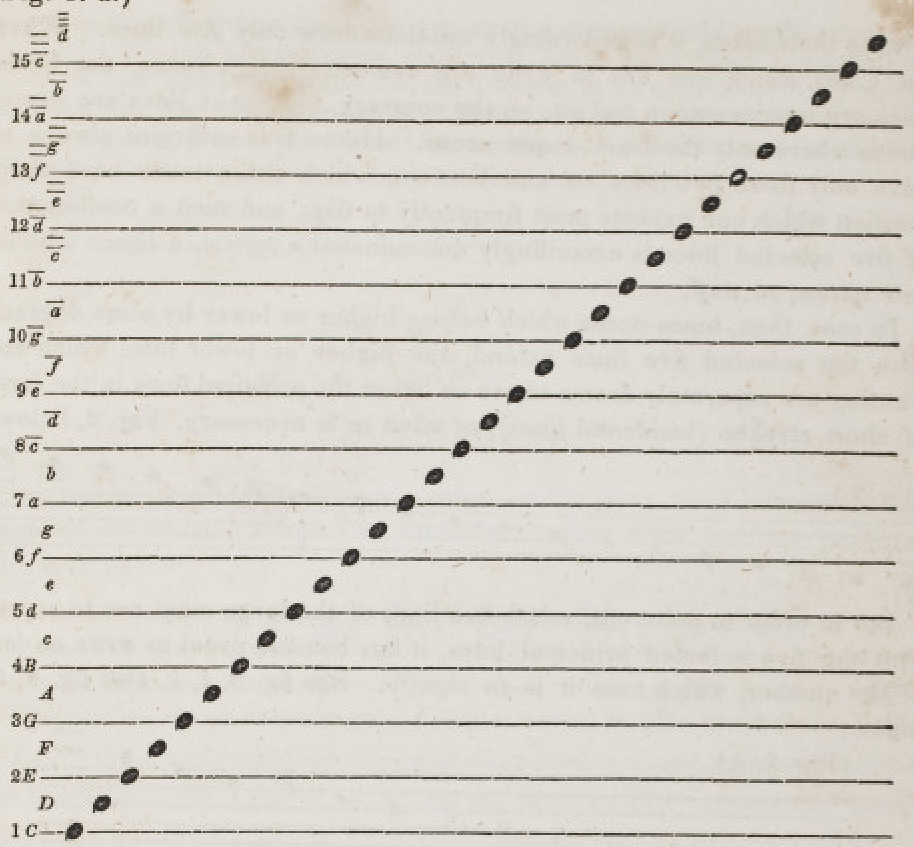
C, D, E, F, G, A, H, c, d, e, &c.

and accordingly the letter B occurs in this case only as the name of a chromatically depressed tone. In other countries, on the contrary, as for example, in Holland and England, the tone which we call H, is actually called B, and, for the sake of distinguishing it from the lowered B, it is called, in England, B *sharp*, and in Holland B *kruis*, while the lowered B is in the former country called B *flat*, and in the latter B *bemol.*

This, in as brief a form as it could be presented without imperfection, is the history of the origin of our names of the tones, and particularly of the admission of the H into the series of the other letters. Comp. also § XXIX."

From this review it is evident, that so far as it respects the use of B instead of H, we have a decided advantage over the Germans. The iron hand of custom has indeed fixed upon them a species of necessity for retaining the use of the H, but still such a usage is universally regarded as an evil even by the Germans themselves and one from which they would gladly extricate themselves were they not chained to it by the cause in question.—Tr.

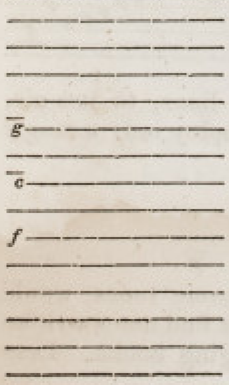
(Fig. 1. *a.*)


$\overline{\overline{\overline{d}}}$
15 $\overline{\overline{\overline{c}}}$
$\overline{\overline{b}}$
14 $\overline{\overline{a}}$
$\overline{\overline{g}}$
13 $\overline{\overline{f}}$
$\overline{\overline{e}}$
12 $\overline{\overline{d}}$
$\overline{\overline{c}}$
11 $\overline{b}$
$\overline{a}$
10 $\overline{g}$
$\overline{f}$
9 $\overline{e}$
$\overline{d}$
8 $\overline{c}$
b
7 a
g
6 f
e
5 d
c
4 B
A
3 G
F
2 E
D
1 C

Every position on or between the lines of this linear system [or staff] is called a *place* or *degree.* A point or *note* set in a higher or lower place indicates a higher or a lower tone. In the above figure, the point on the lowest line denotes the great C; that between the lowest and the second line, the great D; that on the second line, great E, &c.; so that the places of the linear system correspond entirely to the letter-names of the tones C, D, E, F, G, A, B, c, d, &c.

It would be unnecessary, however, that *all* this mass of lines and spaces included in the linear system here drawn, should be marked by writing the letters upon them, but it would be sufficient to designate only *some* lines in this manner, perhaps as in figure 1. *b.* below:

(Fig. 1. *b.*)

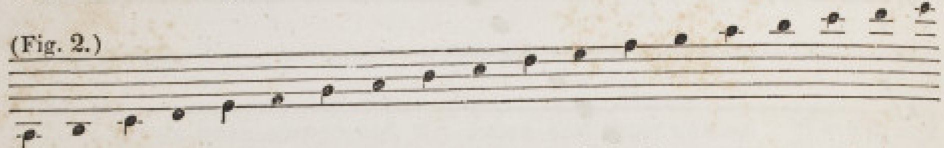

$\overline{g}$
$\overline{\overline{c}}$
f

or even only a single one; for, by having this one point fixed, it would be easy to reckon upwards and downwards to all the other places. If, *e. g.* it is shown, which line is to represent the tone f, it is at once obvious that the note under this line denotes e, and the one above it g, &c.

Moreover, it being, on the one hand, inconvenient and even fatiguing to the eyes, always to use so wide an extent of lines as that here presented; and, on the other, unnecessary, inasmuch as neither voices nor instruments have usually so great a compass as to require the use of so many lines for the purpose of writing their notes, it is accordingly usual to draw only *five* lines. When the tones which one has to write are exclusively *high* tones, the lower lines are unnecessary; and so, on the contrary, the upper lines are superfluous where only the *lower* tones occur. Hence it is sufficient always to have only those five lines on and between which those tones have their position which one expects most frequently to use: and such a combination of five selected lines is accordingly denominated a *system*, a *linear system*, *note system*, or *staff*.

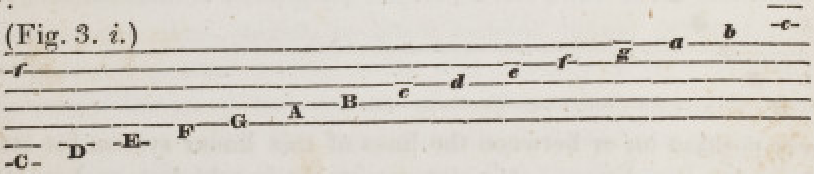
In case, then, tones occur which belong higher or lower by some degrees than the selected five lines extend, the higher or lower lines which are wanting are separately drawn above or below the principal lines in the form of short strokes (incidental lines), as often as is necessary. Fig. 2, below:

(Fig. 2.)

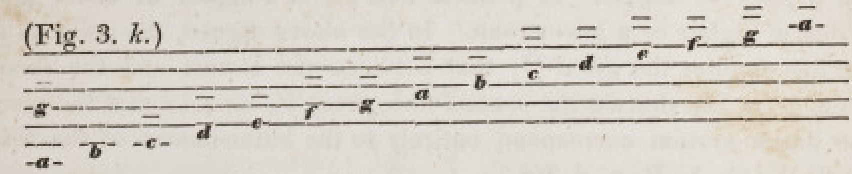


But in order to point out, *which* five lines of the large mass are to represent the five selected principal lines, it has become usual to write on one of the number, which tone it is to signify. See fig. 3. *i*, *k*. also fig. 4, 5, below:

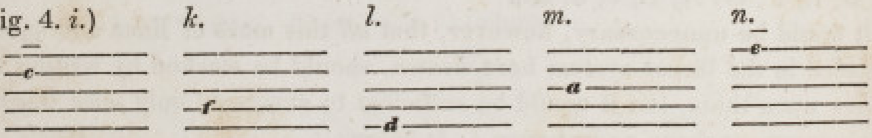
(Fig. 3. *i*.)



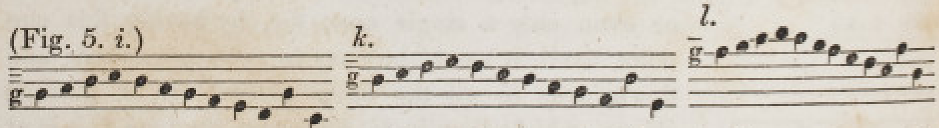
(Fig. 3. *k*.)



(Fig. 4. *i*.)

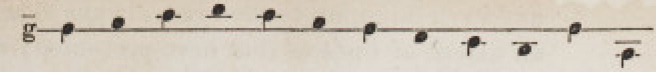

k. *l*. *m*. *n*.

(Fig. 5. *i*.)


k. *l*.

It would be easy, moreover, instead of employing *five* lines, to use *six*, or perhaps only *three* or *four;* and indeed we might employ only a *single one*, as *e. g.* fig. 5. *m*.

m.



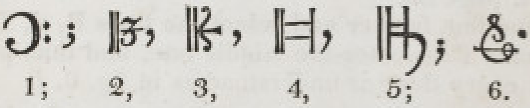
In either case the same musical sense, precisely the same tones, would be expressed as in fig. 5. *i*, *k*, or *l*. In fact we sometimes find notes written on four or three lines, as *e. g.* in the ancient church singing books. Less than five lines however furnishes too small a compass and would render it necessary often to add the small incidental lines; more than five principal lines, on the contrary, would be too difficult to be surveyed; they strain and tire the eye too excessively. The system of five lines, therefore, is in every point of view the most convenient and suitable, and is on this account universally and exclusively used.

(B.)

CLEFS.

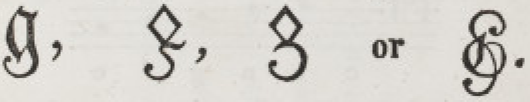
§ XXIII.

Instead of showing by *letters* written on the lines, what tones they are intended to denote, usage has introduced *other signs* for this purpose. These signs are:



The first of these denotes *small* f and is called on this account the f-*sign* or f-*clef;* the second indicates the *small once-marked* c̄, and is therefore called the c̄-*sign* or c̄-*clef;* Nos. 3, 4, 5, are the same as this, except the difference of form. The sign No. 6, on the contrary, represents ḡ and is hence called the ḡ-*sign* or ḡ-*clef.*

These signs are perhaps nothing else than the transformations and distortions of the original letter signs; for, in the ancient musical writings we find the ḡ-clef *e. g.* not unfrequently in the following forms:



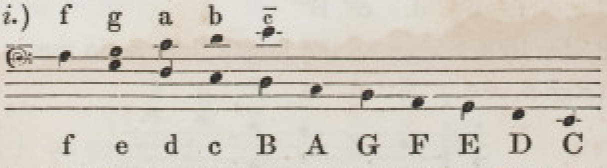
The last, for example, in *Brossard* p. 20.

It is to be observed farther, that *Sulzer*, and with and after him most writers, with total impropriety and inaccuracy, write: "F-clef, C-clef, G-clef;" indeed the first mentioned writer teaches expressly in respect to the f-sign, that it signifies the note F, (!) the c̄-*sign* the note C, (!!) and the ḡ-sign the tone g (!).

The different so called *clefs* arise from the different ways of prefixing the one or the other of these signs to the lines of the staff.

If the f-sign or clef, 𝄢, is prefixed to the uppermost line of a five-lined staff, as in fig. 6. *i.*,

(Fig. 6. *i.*)

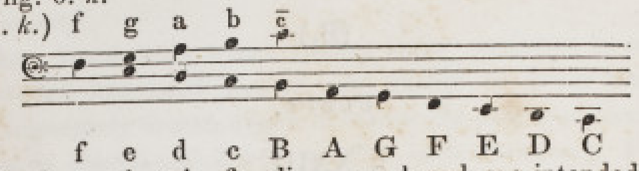


it signifies that this line is to be regarded as the f-line, and hence as the sixth of the large system of lines, fig. 1. page 37, and thus the lowest line of this staff is determined to be the second line of the large group, &c. whence the reader can perceive that a note on the lowest line denotes the tone E; a note in the space next above this line, F; one on the next or second line, G, and so on.

This way of placing the f-sign, otherwise called the *low base clef*, is not now in use.

But the f-sign is placed on the fourth line or the line next to the uppermost, as in fig. 6. *k*.

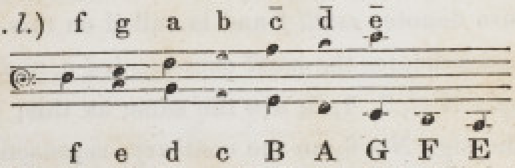
(Fig. 6. *k.*)



and thus it is shown that the five lines employed are intended to represent the 3d, 4th, 5th, 6th, and 7th of the large group, and that accordingly a note on the lowest line represents the tone G; the note in the next space above this line, the tone A, &c. Every one recognizes in this the common so called *base clef*, and also perceives that the example fig. 6. *k*. is the same as fig. 3. *i*. page 38.

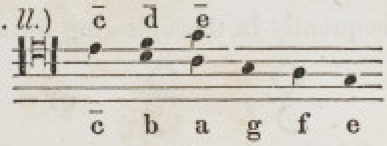
If we go up one line farther and select the lines B, d, f, a, c̄, so that the one which denotes f becomes the middle one, and thus place the f-sign or 𝄢, on this line, every thing is understood as in fig. 6. *l*.

(Fig. 6. *l.*)



This so called *half-base* or *baritone-clef* is again but little in use. It could moreover with equal convenience be designated by the c̄-sign placed on the uppermost line, as in fig. 6. *ll*.

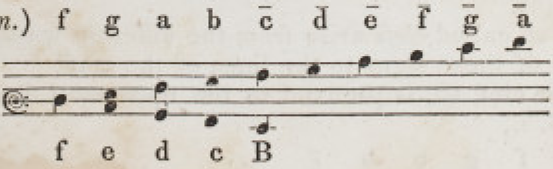
(Fig. 6. *ll.*)



For, if f stands on the middle line, c̄ of course stands on the top line, and vice versa, if c̄ stands on the uppermost line, the middle line is f.

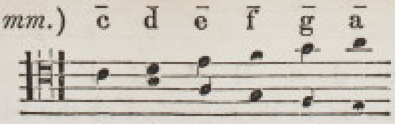
If we move still one line farther upward, and select the lines d, f, a, c̄, ē, the f-line becomes the second one from below. This can be denoted either by an f-sign placed on this second line, as in fig. 6. *m*.

(Fig. 6. *m.*)



or equally well also by a c̄-sign on the fourth line, as in *mm*.

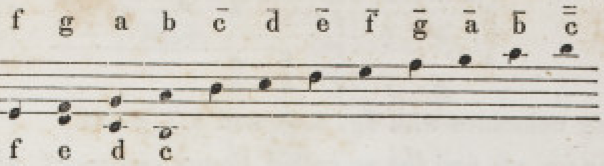
(Fig. 6. *mm.*)



This last mode of designation is the usual one; it is our common *tenor clef.* Comp. moreover fig. 4. on page 38.

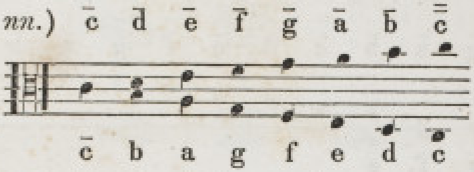
Proceeding one line higher still, we come to our usual *alto clef*, fig. 6. *n*

(Fig. 6. *n.*)


f g a b c̄ d̄ ē f̄ ḡ ā b̄ c̿
f e d c

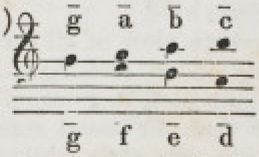
or, which is the same, fig. 6. *nn.*

(Fig. 6. *nn.*)


c̄ d̄ ē f̄ ḡ ā b̄ c̿
c̄ b a g f e d c

It can also be designated by the ḡ-sign on the uppermost line, as in *nnn.*

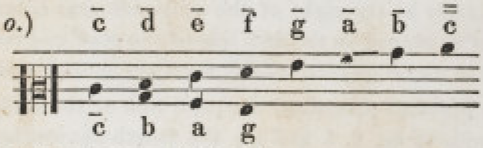
(Fig. 6. *nnn.*)



But neither the first nor the last mode of designation is the usual one; the second is the only one in common use. (Comp. also fig. 5. *l.* page 38.)

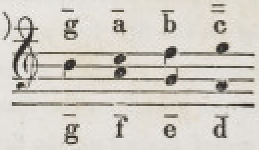
Again one line higher up, occurs the so styled *Mezzo-Soprano* or *half-soprano clef*, fig. 6. *o.*

(Fig. 6. *o.*)


c̄ d̄ ē f̄ ḡ ā b̄ c̿
c̄ b a g

It might equally well be designated as in *oo.*

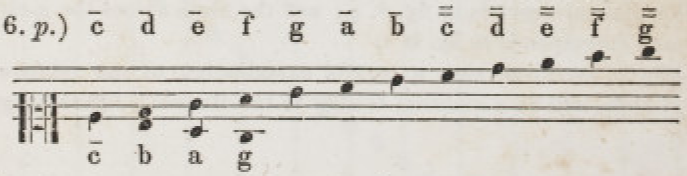
(Fig. 6. *oo.*)



This too is now out of use.

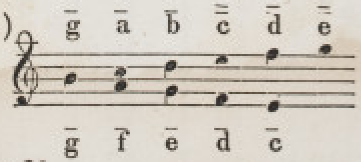
Still one line higher, appears the usual *soprano clef*, fig. 6. *p.*

(Fig. 6. *p.*)


c̄ d̄ ē f̄ ḡ ā b̄ c̿ d̿ e̿ f̿ g̿
c̄ b a g

which might also be represented by the ḡ-sign on the middle line as in *pp.*

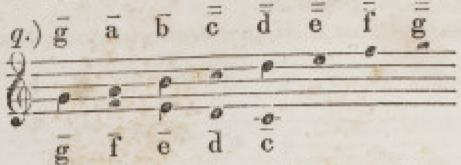
(Fig. 6. *pp.*)


ḡ ā b̄ c̿ d̿ e̿
ḡ f̄ ē d̄ c̄

Comp. fig. 5. *k.* on page 38.

Yet one line higher, appears our usual *violin-clef*, fig. 6. *q*.

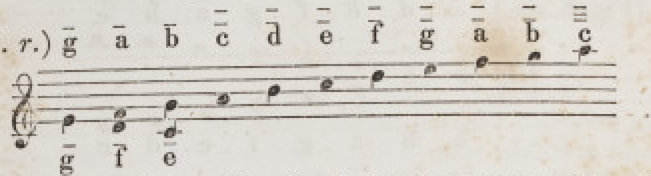
(Fig. 6. *q*.)



which entirely coincides with fig. 3. *k*. and 5. *i*. p. 38.

Still higher up, we find the so called *French violin-clef*, where the g̅-sign stands on the lowest line, fig. 6. *r*.

(Fig. 6. *r*.)



This clef has gone out of use, though, for high passages, it would be more convenient than the usual violin clef.

From the synopsis or collective view of all the clefs and of their mutual relations, as exhibited in fig. 1. *c*. and fig. 6. on pages 43 and 44,* it is perceived how the usual violin clef, *e. g* or, if you please, the five violin lines, are by one line higher than the usual soprano clef or soprano lines, and three lines higher than the *alto clef;* while this last is one line higher than the tenor clef, &c.

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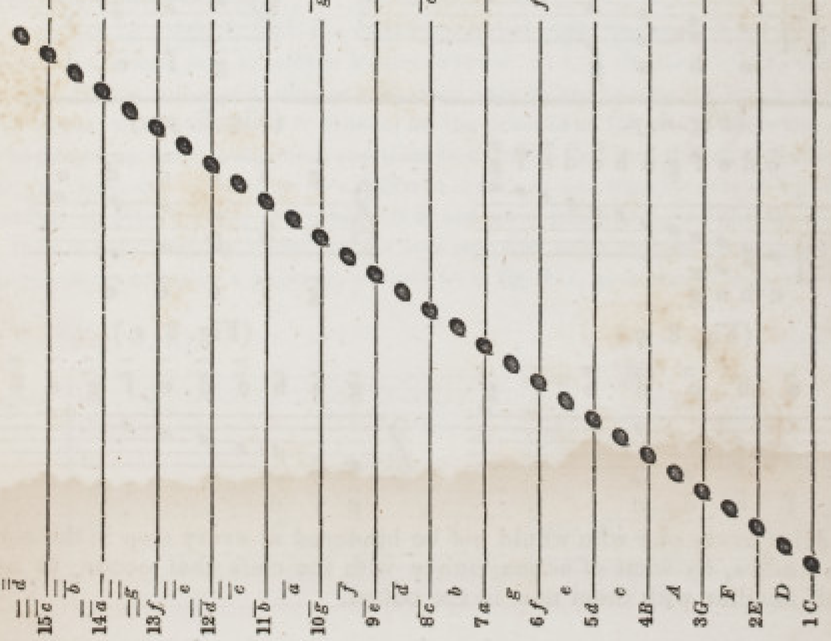
*It will be perceived that fig. 1. *c*. represents nine different specimens of clefs. The first, standing immediately at the right of the perpendicular column of characters and letters, shows the f-clef as placed on the fifth line of the staff and corresponds to fig. 6. *i*.; the second exhibits the f-clef placed on the fourth line and corresponds to fig. 6. *k*.; the third presents the f-clef as placed on the third line or the c̅-clef as standing on the fifth line, and corresponds to fig. 6. *l*. and *ll;* the fourth shows the f-clef on the second line or the c̅-clef on the fourth line, and corresponds to fig. 6. *m*. and *mm*.; the fifth represents the f-clef as standing on the first line or the c̅-clef on the third line or the g̅-clef on the fifth line, and corresponds to fig. 6. *n*. *nn*. and *nnn*.; the sixth presents the c̅-clef on the second line and the g̅-clef on the fourth, and corresponds to fig. 6. *o*. and *oo*.; the seventh shows the c̅-clef placed on the first line or the g̅-clef on the third line, and corresponds to fig. 6. *p*. and *pp*.; the eighth exhibits the g̅-clef as placed on the second line and corresponds to fig. 6. *q*.; and the ninth shows the g̅-clef placed on the first line and corresponds to fig. 6. *r*.

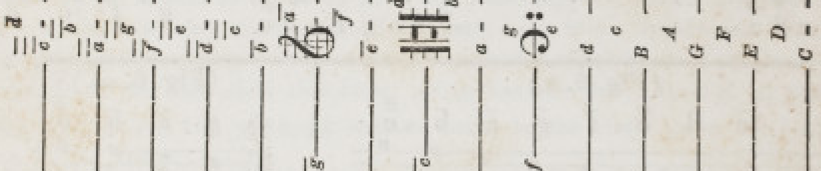
It will readily be perceived that a careful examination of the relative position of these different clefs, will be a material facility to the student's future progress.—Tr.

(Fig. 1. a.)



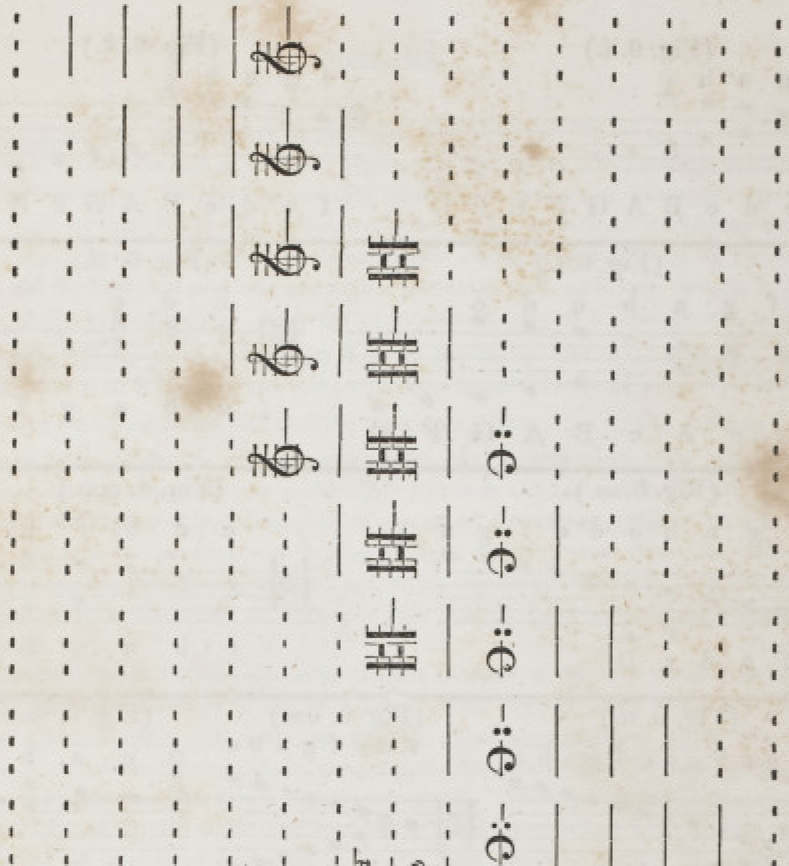
1C
D
2E
F
3G
A
4B
c
5d
e
6f
g
7a
b
8c̄
d̄
9ē
f̄
10ḡ
ā
11b̄
c̿
12d̿
e̿
13f̿
g̿
14a̿
b̿
15c̿
d̿

(Fig.1.b.)

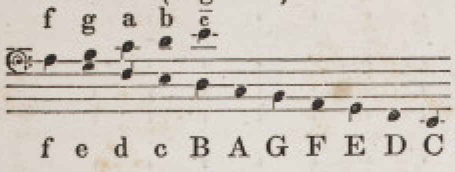


C
D
E
F
G
A
B
c
d
e
f
g
a
b
c̄
d̄
ē
f̄
ḡ
ā
b̄
c̿
d̿

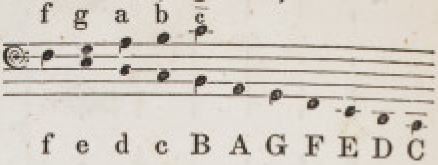
(Fig. 1. c.)



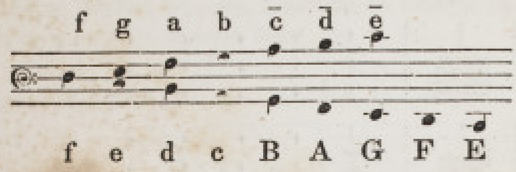
(Fig. 6. *i.*)


f g a b c̄
f e d c B A G F E D C

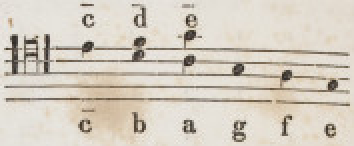
(Fig. 6. *k.*)


f g a b c̄
f e d c B A G F E D C

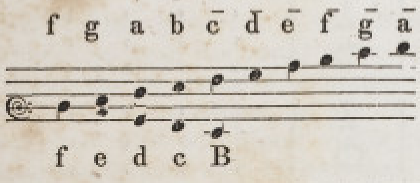
(Fig. 6. *l.*)


f g a b c̄ d̄ ē
f e d c B A G F E

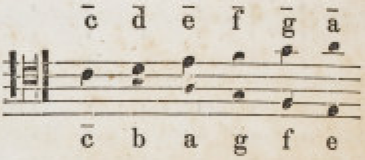
(Fig. 6. *ll.*)



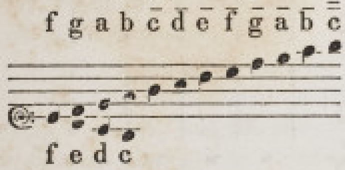
(Fig. 6. *m.*)


f g a b c̄ d̄ ē f̄ ḡ ā
f e d c B

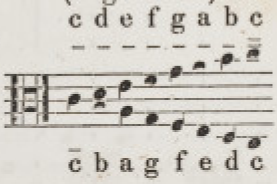
(Fig. 6. *mm.*)


c̄ d̄ ē f̄ ḡ ā
c̄ b a g f e

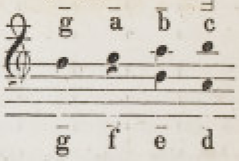
(Fig. 6. *n.*)


f g a b c̄ d̄ ē f̄ ḡ ā b̄ c̿
f e d c

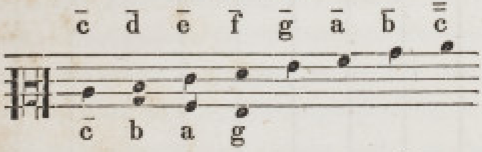
(Fig 6. *nn.*)


c d e f g a b c
c̄ b a g f e d c

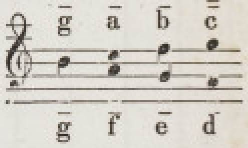
(Fig. 6. *nnn.*)



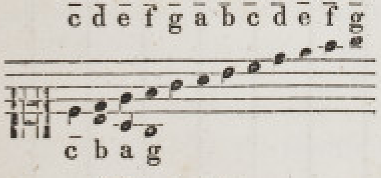
(Fig. 6. *o.*)


c̄ d̄ ē f̄ ḡ ā b̄ c̿
c̄ b a g

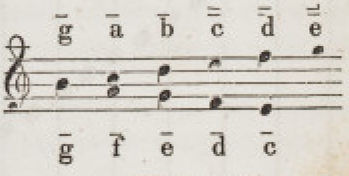
(Fig. 6. *oo.*)



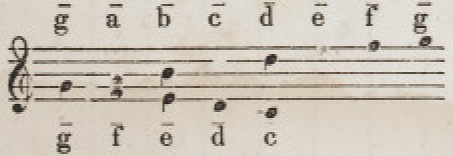
(Fig. 6. *p.*)


c̄ d̄ ē f̄ ḡ ā b̄ c̿ d̿ ē̄ f̿ g̿
c̄ b a g

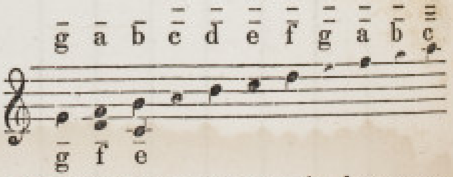
(Fig. 6. *pp.*)


ḡ ā b̄ c̿ d̿ ē̿
ḡ f̄ ē d̄ c̄

(Fig. 6. *q.*)


ḡ ā b̄ c̿ d̿ ē̿ f̿ g̿
ḡ f̄ ē d̄ c̄

(Fig. 6. *r.*)


ḡ ā b̄ c̿ d̿ ē̿ f̿ g̿ ā̿ b̿ c̿
ḡ f̄ ē

I advise every one who would not be hindered at every step in the course of his studies, by want of acquaintance with the clefs that occur, to make himself familiar with them now in the outset.

REMARK.

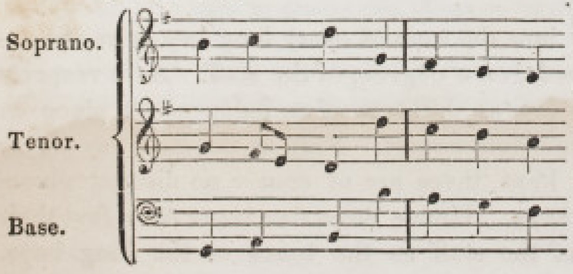
I repeat it as my decided conviction that the different clefs are by no means a troublesome multiplication of musical signs,—by no means a superfluity and an unnecessary incumbrance; but, as has already been made apparent from what precedes, rather a most estimable *facility*, which we cannot give up without subjecting ourselves either to great inconveniences or to disagreeable ambiguities and want of precision.

Let it not be said that one can get along perfectly well with only two clefs as *e. g.* with the *violin and base clefs*. In order to write a melody or a passage which lies *e. g.* chiefly within the range of tones from c to $\overline{\overline{c}}$, the violin clef is altogether too high, while the base clef is entirely too low, and the alto clef alone is properly adapted to the purpose; as is the tenor clef for the range, say from A to $\overline{a}$; the soprano clef, for that from g to $\overline{\overline{g}}$. For this reason, especially, the middle clefs (the tenor and alto clefs) were very convenient and serviceable to me in the first edition of this book for the purpose of representing examples of notes in a medium position on one single staff; whereas, in the present edition I am obliged to bring most examples either upon two staves, or to employ many added lines, or to transpose the whole from the medium position, eight degrees higher or lower, or into another key;—all which I would much rather avoid.

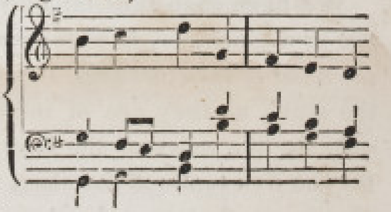
All this shows how little is gained in respect to signs, if we entirely abolish the middle clefs, confine ourselves to the two outer clefs, the very high violin and the very low base clefs, thereby rob ourselves of the great convenience which the middle clefs afford, and do not even retain *one*—say the *alto clef*, which so admirably holds a mean between the two extremes; fig. 1. *c*. page 43. Perhaps indeed the soprano clef might be replaced by the violin clef, the latter being only one degree higher; and the tenor clef might in case of necessity be at one time supplied by the alto clef and at another by the base clef: but the alto clef cannot in its lower department be replaced by the violin clef, the latter being much too high for that purpose; nor in its higher department by the base clef; this being altogether too low. How *e. g.* could the chord *c*, *g*, $\overline{e}$, $\overline{\overline{c}}$—fig. 7.ll. p. 46, be written either in the violin or in the base clef? (Comp. fig. *m*, and *n*.)

It must not be replied, that the clefs in question might be represented by the two extreme ones, taken, say, an octave higher or lower, as *e. g.* the tenor clef by the violin clef; for, on the one hand, this can be done only by conceiving the latter to be one octave lower, and in that case it cannot, on the other hand, be perceived what advantage is gained by being obliged at one time to conceive one and the same clef to be in a certain state, and at another in a different state; at one time an octave higher, and at another an octave lower. Certainly it is not more difficult to read the tenor clef as it is, than it is to read the violin clef as it is not, and to be obliged in the last case to read, conceive, and play a passage, written as in fig. 7. *i*, as it stands in *k*. and not as in *l*.

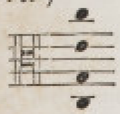
(Fig. 7. *i*.)



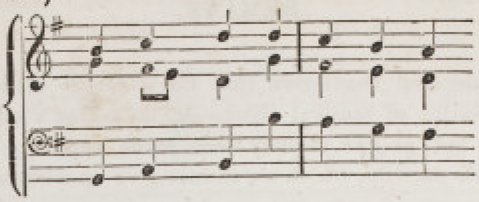
(Fig. 7. *k*.)



(Fig. 7. *ll.*)



(Fig. 7. *l.*)

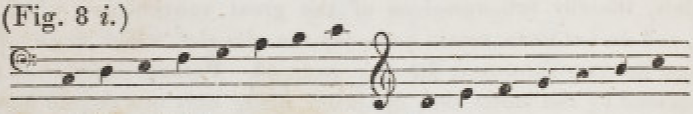


But finally, even if the different clefs were really in themselves without object or utility, as they certainly are not, still even in that case I might not be prepared to advise the neglect of an acquaintance with them (a thing surely not difficult of acquisition) and thereby render illegible all the existing scores of our excellent musical composers, in all which these clefs occur.

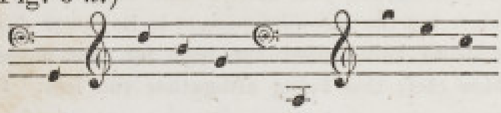
§ XXIV.

If in a passage, running at one time high and at another low, notes occur which would require an excessive number of incidental or added lines, the clef may with propriety be changed in the middle of the phrase, as *e. g.* in fig. 8. *i. k.*

(Fig. 8 *i.*)



(Fig. 8 *k.*)



If, on the other hand, very high and very low notes are to be written at the same time, two or more staves are placed one above another and connected together by means of a brace, as in fig. 7. *i.* or *k.* p. 45. (Comp. § 33.)

(C.)

TRANSPOSITION AND CANCELLING SIGNS.

§ XXV.

We have seen thus far only how the tone of every long key is represented in a place, or, in other words, on a degree, of the staff. As it respects *the tones of the short keys,* they are as destitute of an independent place on the staff, as they are of independent names. For, as the staff has places only for the tones of the long keys, there are of course no distinct places for the five tones of the short keys. Hence these five tones must find their places on the same degrees of the staff as the tones of the long keys.

Thus *e. g.* the tone between c and d, which is always *named* either as an elevated c or as a depressed d, (§ XVII.), can be represented on *the staff* either by a note in the *c*-space or on the *d*-line; the tone between d and e, either as an elevation of d or as a depression of e, &c.

This is done by setting a note in the place of that natural tone from which the derived note borrows its name; a sign however is added to this latter note which indicates an elevation or a depression, called *a transposition-sign* or *a chromatic alteration-sign*, or more concisely, *a chromatic-sign.* (Com. rem. at § XVII.)

§ XXVI.

The sign of *elevation* is the so called sharp (♯) or (♯,) and the sign of *depression* is the character ♭ (*i. e.* the small letter *b.*) *E. g.* a note in the place of g, if a sharp stands before it, denotes a tone that is half a degree* above g; and if a flat stands before it, it denotes a tone which is half a degree below g. Hence the elevated tone in this case is called g sharp ($g^{\sharp}$;) and the depressed tone, g flat ($g^{\flat}$.)

Inasmuch as these signs raise or lower the tone before which they stand to the distance of one key, we can by this means not only represent every short key at pleasure as at one time a depression of the long key above, and at another as an elevation of the long key below; but *the long keys themselves also can be written as transpositions* or *chromatic alterations,* and thus can appear under *borrowed* names. Comp. § XVIII.

Double transposition-signs have also been introduced, which elevate or depress to the distance of *two* keys. The double elevation-sign is the so called Spanish cross ✕, ⁜, ※ or ⋕, and the double depression-sign is either a larger ♭, or two ♭s (♭♭) of the usual size, (the latter is the sign usually employed,) or sometimes a Greek β. Accordingly, the key which is otherwise called G can be written as F+ or F♯♯, *i. e.* F twice sharped; the key which is otherwise called D, can be written as E♭ or E♭♭, *i. e.* E-twice flatted; the A-key as B♭ or B♭♭, *i. e.* B-double flat, &c. Comp. p. 32.

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* It will be observed here that the term "*half-degree*" is employed instead of the usual term "semitone." Such will be the usage throughout this work. The reasons for a change on this point are entirely obvious. In the first place, the word "tone" never ought to have been employed to signify a distance between musical sounds. Such a use of it is totally foreign to its etymological derivation, and entirely counter to ordinary usage. Indeed, what could be more strange or absurd than to take a word which means *sound* and employ it to mean a *distance* between sounds? Pray, what analogy is there between these two things? And besides this violence done to all the legitimate principles of derivation and of attaching secondary and new meanings to words, the employment of a term to denote two things so totally different from one another, produces in our musical language a most unfortunate confusion and obscurity. And, finally, the author of the work before us appropriates the word "*tone,*" by a specific and fundamental definition, to a large and important class of musical sounds, (§ I; p. 10.) and constantly employs it in this sense throughout his work. We seem compelled, therefore, to employ some other words than "tone and semitone" to denote the distances between tones, and perhaps no terms are more natural and intelligible, and, upon the whole, more suitable for this purpose, than the terms "*degree or step,*" and "*half-degree* or *half-step.*"—Tr.

§ XXVII.

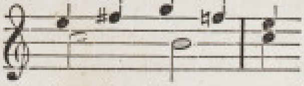
The neutralizing or *canceling sign* (♮,) also called *the restoring or resolving sign*, or concisely *the natural*, neutralizes the effect of a preceding transposition-sign, so that *e. g.* a note which otherwise would, by virtue of a foregoing elevation-sign, have been g sharp, becomes again g natural by means of the canceling sign set before it.

Since the neutralizing sign, as we perceive, revokes at one time a depression and at another an elevation, it is itself, viewed in relation to the revoked depression or elevation, at one time an elevation-sign and at another a depression-sign; or, more strictly speaking, it is the sign of a restored elevation or of a restored depression, and hence it is always in some measure *equivocal or ambiguous.*

REMARK.

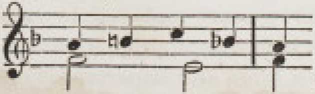
Though this ambiguity is not exactly an *essential* imperfection in our written music, still it were rather to be wished that we had two different signs: one as the sign of a restored elevation, and another as the sign of a restored depression. The equivocalness of the neutralization-sign appears especially inconvenient where a piece of music is to be transposed from one key into another; because, in that case, wherever the natural occurs it must be recognized at one time as an elevation-sign, at another as a sign of depression, and at another as a restoration-sign; and, vice versa, when the sharp (♯) occurs, it must at one time be understood as a sharp, and at another as a natural; so also the flat (♭,) at one time as a flat, and at another as a natural. If *e. g.* a passage, as in fig. 9. *i.*

(Fig. 9. *i.*)



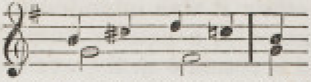
which runs predominately in C major, is to be transposed into F major, as in fig. 9. *k*,

(Fig. 9. *k.*)



it is perceived that at the second quarter note there must be placed a natural instead of a sharp, while at the fourth quarter note there must be a flat in the place of the natural. Vice versa, in transposing the example from F to C, a sharp must be placed at the second quarter note instead of the natural; and, at the fourth quarter note, a natural instead of the flat. In transposing from C to G, fig. 9. *l.*

(Fig. 9. *l.*)

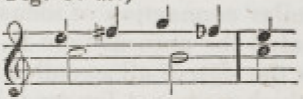


a sharp is again placed in the same situation in which there was a sharp in Example Fig. 9. *i.* and so also a natural occurs again in the same relative situation as the natural in Example Fig. 9. *i.* and thus arises an equivocalness which is attended with the disadvantage that one cannot always at the very first instant determine whether the occurring natural is a sign of elevation or of depression.—The practice of the older musical composers which is adverted to in the following section seems to show that they were sensible of the impropriety of the equivocalness here complained of.

§ XXVIII.

Our older musical composers used the natural (♮) only for revoking the flat (♭,) but not for revoking the sharp (♯,) and thus only as a sign of restored elevation, but not as a sign of restored depression; they preferred to use the flat (♭,) for the sign of restored depression, according, to which method of writing, consequently, the passage in fig. 9. *i.* would appear as follows, in Fig. 9. *m:*

Fig. 9. *m.*)



This mode of writing, however, only puts a greater degree of equivocalness in the place of a smaller one, and is at the present period entirely out of use. It is mentioned here merely in the way of historical information and for the purpose of rendering the old musical writings intelligible.

§ XXIX.

The history of the origin of the chromatic signs—♯, ♭, ♮, combines itself with the history already given in § XX. of the names of our notes.

Inasmuch as previously to the invention of the musical staff, the tones were written by means of the letters, and two different tones were designated by the letter B,* it was practised for the purpose of having some distinguishing sign, to designate the original or natural, unaltered B—the so called B *durum*, by a square formed ♮—after the shape of *the black monk letters* of that period.—(B *quadratum;* in French, Béquarre, Bécarre, also B quarre, more rarely B quarré; in Italian, B *quadro* or *Bisquadro;*) whereas the lowered B —the so called B *molle* was designated by a round shaped b or *b*, and hence was called the round B, after the form of our present Latin or Roman letters, (B *rotundum;* in French, B rond; Italian, B *rotondo* or *ritondo.*)

Moreover, subsequently to the introduction of our system of note-lines, or the so called staff, both of these different Bs were presented on one and the same degree of the staff; but a sign was always written in connection with the note to show whether it was intended to denote the original natural 𝔥, or the lowered *b;* namely, a square formed 𝔥 was placed before the note, in the first case; and a round *b* in the second case.

---

* Originally the letter B represented the tone which we denote by it, but subsequently, when a new tone, a half degree below this, was introduced, the B was taken for the latter, and another letter, namely H, was taken for the former,—a usage which the Germans still retain.—Tr.

When afterwards the other so called chromatic tones came into use, the course of procedure in relation to them was of the same character: every raised or lowered tone was put in the place which belonged to the natural tone, *e. g.* the tone g sharp was represented by a note in the g place on the staff, and the syllable "*gis*" (*i. e.* g♯) was always written before it, &c.

It is plain, however, that the inconvenience of such a mode of writing must soon have been felt, and that shorter signs were sought by means of which it could be signified in the case of any note whatever, whether it was intended to denote an elevated, a depressed, or the natural original tone of the place concerned.

In pursuance of this object, the round *b* was chosen as the sign of *depression.* This selection undoubtedly resulted from the circumstance that this *b*, which was now habitually regarded as the sign of the depression of the tone B, and of course as the sign of the depression of the place itself in which B stood, could conveniently be taken as the sign of the depression of every other place also. (It did not occur indeed, that a new impropriety was introduced by this means, inasmuch as now a universal *chromatic sign* and an individual *tone* came to have one and the same name; that is to say, both are called *b.*) It is the present practice to give to this lowered b the form ♭ or ♭.

In consequence of a similar connection of ideas, the so called square 𝔥, which had hitherto designated the natural tone B, *i. e.* the B not lowered—B natural, was adopted as the sign of all so called natural tones; and hence, not only of all the tones which were not lowered, but also of all which were not raised. (Com. § XXVII). In the written music of modern times the form of this square 𝔥 has become changed into the well known form ♮—*the natural*—(possibly also it may be a corruption of the letter 𝔥.)

Finally, the sign of elevation (♯,) originally called B *cancellatum, the* B *stricken out, stricken through,* the *latticed* B, appears to have arisen from a similar association of ideas; and, as its name imports, it appears actually to have been a doubly crossed B, which was crossed once and again to signify that it was *not to be lowered,* but on the other hand was even *to be raised.*

§ XXX.

It is well known that very frequently, either in the beginning of a piece of music, immediately after the clef, or farther on in the course of the piece, one or more of these transposition-signs, (sharps, flats, or naturals) occurs with a view to a permanent effect. The subject of these *chromatic fore-signs* or *signatures,* is treated in the doctrine of the keys. (Theory § 141.)

(D.)

THOROUGH-BASE.

§ XXXI.

In addition to the hitherto described method of designating tones by notes, there is still another, consisting of a *compound of notes, figures, and* *other signs*, which is called *thorough base*. But as this writing in figures properly presupposes a knowledge of the entire grammar of musical composition, even if not still more than that, it cannot here be explained. In the fourth volume of the Theory it is exhibited in full.

REMARK.

Professor Maas, in his review of the first volume of the first edition of my Theory (in der Leipz. Allg. Mus. Zeitung, 1817, S. 641) regrets to find, in the foregoing explanation of our present mode of writing music, no mention made of its advantages over the designation of tones merely by figures, and that I have not raised my voice also in helping the sooner to suppress "this senseless old practice,—a practice long since known to be worthy of rejection and for this reason long ago abandoned, though now again sought to be revived:—a practice which every intelligent friend of the musical art must desire to see exterminated." I know not how to fill up the chasm here complained of, by a more weighty authority than by quoting the opinion which I have transcribed above from Prof. Maas, relative to the subject in question. Any one, however, who may wish to see an ample exhibition of the advantages of our method of writing music on the lines and spaces of the staff, can find it in Prof. Maas's Treatise in No. 6 der Leipz. allg. mus. Zeitung von 1815. Comp. also *Caecilia* VI. S. 109; VII. S. 133; VIII. S. 25, 261; IX. S. 185.

It did not occur to me as being necessary either, to say anything against *Dr. Krause's method of writing music*, (Leipz. allg. mus. Zeitung, 13. Bd. S. 497. 14 Bd. S. 117, 133,) which would take away all indications of the pitches of tones and would rob us of nearly all the advantages of our indications of the lengths of tones, while it would, on the other hand, most wonderfully sharpen up our eyesight in measuring the lengths of notes and would convert a common music writer into a geometer, or perhaps even a geometer into a writer of music. It moreover seems unnecessary here to declaim against the introduction of a mode of writing notes whose ideal is the cylinder of a barrel-organ.

DIVISION V.

DISTANCES OF TONES,—INTERVALS.

(A.)

IDEA.

§ XXXII.

Thus far we have acquired a knowledge of the tones, of their names, and of the manner in which they are written. In all this, every tone has appeared by itself: but we will now examine them in *their mutual relations as situated one above another; we will contemplate them in relation to their different comparative elevations.*

The relation of *two tones* of *like elevation* is called *unison.*

The relation, however, of two tones *not exactly alike in point of pitch,* the difference between the elevation of one tone and that of another, the distance from a higher to a lower tone is called an *interval, i. e.* an intermediate space, separation of tones, distance of tones. (Another signification appropriated to the technical word *interval,* which does not belong to the present connection, we shall become acquainted with in the doctrine of chords.)

Our technical language has a name for every conceivable interval within the limits of our system of tones, and thereby affords us the convenience of being able to name every greater or smaller difference in the pitch of tones.

(B.)

NUMERICAL NAMES OF INTERVALS.

§ XXXIII.

The name of every interval depends, first of all, upon the number of degrees which it embraces; or, in other words, in the naming of intervals it is first observed how many places on the staff the two tones are apart. The distance from any one place of the staff to the next higher or lower is called *a degree.* A note *which stands one place higher on the staff* than another, as *e. g.* one is *on* a line, and the other *next above* or *below the line;* or , *e. g.* c—d, e—f, &c.,—is said to be *one degree distant from it.*

Of two notes, one of which is in this way one degree higher than the other, the lowest is called *the first, prima* or *the prime,* and the higher one is called *the second, secunda* or *second:* and the interval, *the distance between* the two different tones, is itself called *a second.*

The interval between two notes, one of which is two degrees, *i. e.* two seconds, higher than the other, where consequently the upper one, reckoned onward from the lowest or first, is the *third,* or, briefly, the interval extending over three note-places, as or , is called *a third,* as *e. g.* g—b, f—a, e—g, &c.

Two notes which are three degrees distant from one another, and whose interval accordingly embraces *four* places, as or , constitute a *fourth,* as *e. g.* c—f, f—b, b—e, and the like.

The interval of *five* places, as *e. g.* c—g, is called a *fifth;* of *six,* a *sixth;* of *seven,* a *seventh;* of *eight,* an *eighth;* of *nine,* a *ninth;* of *ten,* a *tenth;* of *eleven,* an *eleventh;* of *twelve,* a *twelfth;* of *thirteen,* a *thirteenth;* of *fourteen,* a *fourteenth;* of *fifteen,* a *fifteenth;* of *sixteen,* a *sixteenth;* of *seventeen,* a *seventeenth.*

It is extremely rare, however, to reckon so far as this: for the most part only the first eight of the above designations are used. As we heretofore perceived the succession of the letters to repeat itself from 8 to 8, and as the eighth note-place is again designated by the same letter as the first (§ XVI,) so the ninth, inasmuch as it is the eighth degree from the second or the second from the eighth, and thus as it were another second, differing only in the circumstance that it occurs after a renewed application of the measuring scale, is also again called *a second*. In the same way the tenth is called the third, because it is as it were a renewed third, only taken within the compass of a higher octave: so the eleventh is regarded as the fourth: the twelfth, as the fifth: the fifteenth, as the octave: the sixteenth, as the second again, &c. as is shown by the following set of numbers arranged under one another:

1	2	3	4	5	6	7	8
8	9	10	11	12	13	14	15
15	16	17	18	19	20	21	22
22	23, &c.						

The higher numerical names of the intervals, however, are not *entirely superfluous;* for, on the one hand, they are needed where it is requisite to point out definitely *at what distance* from the first tone a third is to be understood: whether *e. g.* it is to be taken as an actual third, as c—e, or the tenth, as c—e̅, or even the seventeenth, as c—e̿; and, on the other, the appellation *ninth*, in particular, is employed in a certain specific case which will be mentioned hereafter. Theory, § 77 seq.

§ XXXIV.

The reckoning of intervals is always *from below upwards*, as we have hitherto proceeded, and the term *third*, *e. g.* always signifies the third degree reckoned *upwards*, and accordingly an interval in the opposite direction would be expressed by the additional appellation *under* or *lower*, as *e. g. the lower third* from G, *the lower fifth* from B, *the under octave* from e, &c.

(C.)

ACCESSORY NAMES OF INTERVALS.

§ XXXV.

In the foregoing treatment of intervals according to the number of their degrees it must have occurred to every reader, that not unfrequently intervals of very different extent are found under one and the same numerical name. *E. g.* we called the interval e—f a second, as well as f—g; while the former is only half as large as the latter; for, the one embraces *three* keys, while the other embraces only *two*.

Consequently the number of the degrees is not alone sufficient to determine exactly the magnitude of the distance between the tones, and of course the numerical names alone are not adequate to the exact designation of this distance; but it is necessary that we look farther for some method whereby intervals of the same number of degrees and of the same numerical name, though still of different magnitude can be definitely designated and the exact distance of the tones from one another be made known: the method adopted for this purpose is that of adding to the numerical name a more *specific*, *distinctive appellation*, or *accessory name*, showing whether the interval is of the larger or of the smaller species.

We will accordingly now become acquainted with the intervals in this respect; we will learn to reckon them not merely, as heretofore, according to the *number of their degrees*, but will learn also *to measure* them according to their *magnitude*, and *to designate and name them* hereafter with *more specific* and accurate appellations.

(1.)

SMALL AND LARGE INTERVALS.

§ XXXVI.

We find, even in the series of the natural tones, intervals of *one and the same* numerical name, which are at one time of the larger species, and at another of the smaller. To the former we naturally give the distinctive accessory name "*large*" or "*great;*" to the latter, "*small.*"*

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* The terms "*large*" and "*small*," it will be perceived, are here employed in the place of the more usual terms "*major*" and "*minor*." The former are an exact and literal translation of the terms which the author himself employs, and while it is desirable on this account to adopt them in the translation, it is also desirable for the still more important reason that they are more *simple* and *intelligible* than those which we have been accustomed to use in their stead. "Large" and "small," being pure English words and among the most familiar and earliest known of all the words of our language, have a decided advantage over the Latin words "major" and "minor," on the score of being more universally and easily intelligible and of making at once a more clear, distinct, and perfect impression. Words of the old Saxon stock, such as every English or American child has been familiar with from his cradle, seem, for this reason, to be very especially adapted to be used as technical terms. There has for years been a deepening conviction in the mind of the translator that a great error is committed in the instruction books of most of the arts and sciences, in using too profusely terms which are borrowed from foreign or dead languages. The effect of such a measure must be, as it certainly is, to obscure what it should be a special purpose to make plain. Of all the books in the world, one of elementary instruction should be the most simple

In the first place we find (as has been already observed),

(a.) *two different species of seconds;* or, in other words, the step from one tone to another lying next to it in the series of the tones of the long keys is at one time larger, and at another smaller, just according as it occupies either the distance from the tone of one key to that of the next higher, as *e. g.* e—f, or to *the second* following, so that between the lowest and the highest key there is still one intermediate key, as *e. g.* f—g. The former distance is called *a small* [*or minor*] second, and the latter a *large* [*or major*] second.

On going through the series of the natural tones we shall find the degree or second C—D or c—d, &c, *large;* D—E likewise *large;* E—F *small;* F—G, G—A, and A—B *large;* and B—c again *small:*

C D E F G A B c d, &c.
Large, large, small, large, large, large, small, large.

In addition to these large and small seconds lying in the series of the natural tones, many other great and small degrees or seconds also may be formed by means of chromatic elevations or depressions of one of the tones or of both. *E. g.*

Small seconds: f♯—g, c♯—d, g♯—a, d♯—e, a♯—b, e♯—f♯, b♯—c♯, f×—g♯; a—b♭, d—e♭, g—a♭, c—d♭, f—g♭, B♭—c♭, e♭—f♭, a♭—b♭♭.

Large seconds: e—f♯, B—c♯, f♯—g♯, c♯—d♯, g♯—a♯, d♯—e♯, a♯—b♯, e♯—f×: B♭—c, e♭—f, a♭—b♭, d♭—e♭, g♭—a♭, c♭—d♭, f♭—g♭, B♭♭—c♭.

Many call these large degrees or large seconds also *whole degrees,* and the small ones *half degrees,* because the latter as has been before observed, are in a manner only half as large as the former. Sometimes also even the terms *whole and half tones* have been used in this sense. Com. § XXXVIII.1.

(b.) In like manner also *two different thirds* are found in the series of the natural tones, according as the two degrees of which the third consists are both large, as in the third C—E, F—A, G—B; or the one is great and the other small, as D—F, E—G, A—c, B—d, thus:

small. large. small.
C D E F G A B c d
large. small. large. small.

A third consisting of *two small* degrees does not occur in the series of the natural tones, because in this series no two small degrees come next to one another. (Comp. the diagram above.)

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and intelligible, and in order to its becoming so, it derives very great advantages from employing, as far as possible, for its technical terms, the plain, easy, and universally familiar words of our own language.—It is in pursuance of this conviction, that the translator feels called upon, so far as he can conceive himself justified in so doing, compatibly with a due deference to authority and established usage, to discard whatever is foreign in the mode of expression and to substitute in its place the most familiar simplicity.

In accordance with the above principle, the word "*large*" or "*great*" is used for "*major;*" and "*small,*" for "*minor.*" Thus "*major*" second, "*major*" third, &c. becomes *large* second, *large* third, &c; and "*minor*" second, "*minor*" third, &c. becomes *small* second, *small* third, &c.—Tr.

Besides the above mentioned small and large thirds, lying in the series of the natural tones, many others of the same magnitude may also be formed by a chromatic raising or lowering of one or both of the tones, as *e. g.*

Small thirds: f♯—a, c♯—e, g♯—b, d♯—f♯, a♯—c♯. e♯—g♯, b♯—d♯, f×—a♯, &c.; g—b♭, c—e♭, f—a♭, B♭—d♭, e♭—g♭, A♭—c♭, d♭—f♭, g♭—b♭.

Large thirds: d—f♯, A—c♯, e—g♯, B—d♯, f♯—a♯, c♯—e♯, g♯—b♯, d♯—f×, ... ; B♭—d, e♭—g, A♭—c, d♭—f, g♭—b♭, c♭—e♭, f♭—a♭, B♭♭—d♭ . . .

(c.) So also in the series of natural tones we find *two different species of fourths*, according as two of the three degrees included by the fourth are large and one is small, or all three are large. A fourth of the former species we again denominate a *small fourth*, and one of the latter species a *large fourth*.

C—F, D—G, E—A, G—c, A—d, B—e are small fourths: F—B is a large fourth.

Examples of *small fourths*, which are formed by chromatic transpositions, are as follows:

f♯—b, c♯—f♯, G♯—c♯, d♯—g♯, A♯—d♯, e♯—a♯, b♯—e♯, f×—b♯, &c.; f—b♭, B♭—e♭, e♭—a♭, A♭—d♭, d♭—g♭, G♭—c♭, c♭—f♭, f♭—b♭♭.

Examples of *large fourths* by chromatic transpositions: c—f♯, G—c♯, d—g♯, A—d♯, e—a♯, B—e♯, f♯—b♯, c♯—f×, &c.; B♭—e, e♭—a, A♭—d, d♭—g, G♭—c, c♭—f, f♭—b♭, B♭♭—e♭, &c.

Instead of *small fourth*, the expression *pure* fourth [perfect fourth] is frequently used, and instead of *large fourth*, the term *superfluous fourth* is sometimes employed. But we find it more consistent and congruous to use, for distinguishing the two species of intervals occurring in the series of the natural tones, the terms *small* and *large*, as distinctive accessory names that are perfectly uniform and universal, and to reserve the accessory terms *superfluous* and *diminished*, for the intervals which are of the species mentioned in the following section.

Moreover the *large fourth* is not unfrequently called the *false* fourth, sometimes also *tritone*, because it embraces three large, so called whole degrees, (three whole tones.)

(d.) *Fifths* also are found of two different sizes, according as two of the four degrees of which a fifth consists are small, and two are large, or three are large and only one small. The only *small* fifth is B—f. All the rest are *large*.

Small fifths by means of chromatic transpositions: F♯—c, c♯—g, G♯—d, d♯—a, A♯—e, e♯—b, B♯—f♯, F×—c♯,——; e—b♭, a—e♭, d—a♭, G—d♭, c—g♭, F—c♭, B♭—f♭, e♭—b♭♭——.

Large fifths: B—f♯, F♯—c♯, c♯—g♯, G♯—d♯, d♯—a♯, A♯—e♯, e♯—b♯, B♯—f×——; B♭—f, e♭—b; A♭—e♭, d♭—a♭, G♭—d♭, c♭—g♭, F♭—c♭, B♭♭—f♭——.

Instead of the name *small fifth*, the term *diminished*, or *false* fifth is frequently used; and instead of the word *large*, the term *pure* [or perfect] is not unfrequently employed. But here again we prefer to remain true and uniform to the distinguishing accessory names which we have once adopted. (Comp. remarks under c.)

It will moreover be observed here that the small fifth is the same in respect to the number of keys as the large fourth, and thus is, in this point of view, *equivocal*. We shall hereafter recur to this subject again.

(e.) That is called a *small sixth*, two of whose five degrees are small, and three large. But if four of these degrees are large and only one is small, the sixth is called a *large sixth*. Accordingly the sixths E—c, A—f, B—g, are *small;* those C—A, D—B, F—d, G—e, are *large*.

Small sixths by chromatic transpositions are as follows: F♯—d, c♯—a, G♯—e, d♯—b, A♯—f♯, E♯—c♯, B♯—g♯, F×—d♯,—; d—b♭, G—e♭, c—a♭, F—d♭, B♭—g♭, E♭—c, A♭—f♭, d♭—b♭.

Large sixths, by chromatic transpositions, are as follows: A—f♯, E—c♯, B—g♯, F♯—d♯, c♯—a♯, G♯—e♯, d♯—b♯, A♯—f×; B♭—g, E♭—c, A♭—f, d♭—b♭, G♭—e♭, c♭—a♭, F♭—d♭, B♭♭—g♭.

(f.) In like manner occur *small* and *large sevenths*, according as four of the six degrees of which the seventh consists are large and two are small, or five are large and only one is small. All the sevenths in the natural series of tones are small, except the two C—B, and F—E.

Other *small sevenths* by means of chromatic transpositions are as follows: F♯—e, c♯—b, G♯—f♯, D♯—c♯, A♯—g♯, E♯—d♯, B♯—a♯, F×—e♯; c—b♭, F—e♭, B♭—a♭, E♭—d♭, A♭—g♭, D♭—c♭, G♭—f♭, c♭—b♭.

Large sevenths in the same way are as follows: G—f♯, D—c♯, A—g♯, E—d♯, B—a♯, F♯—e♯, c♯—b♯, G♯—f×; B♭—a, E♭—d, A♭—g, D♭—c, G♭—f, c♭—b♭, F♭—e, B♭♭—a♭.

(g.) *The octave* in the natural series of tones everywhere occurs of one and the same magnitude; or, as it is usually expressed, it occurs only as a *pure* octave, there is no case in which one is found greater than another. Hence the terms *small and great* cannot be predicated of *the octave*, nor, for the same reason, of *the prime*.

(h.) *Small* and *great ninths, tenths, elevenths,* &c. are only repetitions of small and great seconds, thirds, fourths, &c.

(2.)

DIMINISHED AND SUPERFLUOUS INTERVALS.

§ XXXVII.

We have seen that in the natural series of tones, intervals occur of one and the same numerical name, while yet they are of two different magnitudes. The difference between *large* and *small* intervals every where amounts to *just one key*. Greater differences than this do not there occur; but such larger differences may be produced by the help of a chromatic transposition of at least one of the two tones, as, *e. g.* a second f—g♯, which is larger than the one hitherto known to us under the term *large*,—also a third d♯—f, which is smaller than a small third, &c.

Intervals *which are by one key larger or smaller than they occur in the series of the natural tones*, that is, one key larger than large, or smaller than small,—are called *superfluous*, and *diminished*. (Comp. remark at § XVII. No. 11.)

§ XXXVIII.

Accordingly,

(1.) The relation between two tones, both of which stand on one and the same degree or place of the staff, but one of which is one key higher than the other, as *e. g.* g—g#, a^{b}—a, and the like, is denominated a *superfluous prime*, because the difference of pitch between the two tones is by one key greater than it is in the case of the prime in the series of the natural tones. (That is to say, in the latter case, between two tones, both standing on one and the same degree of the staff, there is *no difference at all:* but c and c# are separated by the distance of one key, and, accordingly, the difference between two tones situated on one and the same degree of the staff can amount to one key more than in the series of the natural tones.

The superfluous prime is thus, as it respects *the number of keys*, equivalent to the small second (or small so called half-tone degree,§ XXXVI. 1), and hence *ambiguous.* For, the superfluous prime, as *e. g.* g—g#, just as the small second, g—a^{b}, consists of two tones of two immediately proximate keys, and the two appear on the piano-forte precisely alike.

Still however the two are essentially *different.* For two tones which in relation to one another make out a superfluous prime, stand both together on one and the same degree of the staff and are distinguished only by a chromatic sign; both obtain their name from one and the same letter; the only difference is, that one is distinguished by a chromatic character attached to it; *e. g.* G^{b}—G, G—G#. But in the case of the small second all this is different: there, each of the two tones stands on a different and separate degree of the staff, and each is designated by a distinct letter, as *e. g.* F♯—G, G—A^{b}, &c. (Indeed, if we bring into calculation the fact that the tone G#, *e. g.* is not properly quite so high—or at least ought not to be—as A^{b} [§ XIX], it will appear, in this point of view, that the interval G—G♯ is not strictly quite so large as the one G—A^{b}.)

It results from the first mentioned great *similarity* of the small second and the superfluous prime, that both have received the common name of *a half-tone* [or *half-degree,*] (§ XXXVI); and it is a consequence of the last mentioned *difference*, that, for the sake of a more exact and specific distinction, the small second is called a *large half-tone* [or a *large half-degree*], while the superfluous prime is denominated *a small half-tone* [*or a small half-degree*]. (This is truly a somewhat remarkable and at any rate rather an obscure mode of expression.)

The superfluous prime is often called also a *chromatic interval* (Comp. remark at § XVII. No. 10): (because the two tones differ only so much from one another as a chromatic transposition-sign makes them,) or a *chromatic half-tone or semitone* (see remark above referred to); and, in contradistinction from this, the small second or large half-tone [half-degree] is called *a diatonic half-tone* [*a diatonic half-degree*].

We prefer, instead of all these particular appellations, to use in all cases the terms *superfluous prime* and *small second:* by which means the whimsical distinction of great half and small half, of diatonic half and chromatic half tones [half-degrees] is at once spared.

So also the expression *half-degree* (§ XXXVI. *a.*) should be avoided,* because at one time under this term is understood a superfluous prime (a chromatic or small half-tone), and at another a small second (a diatonic or large half-tone), whereby there easily arises a confusion of ideas which can only with difficulty be avoided by the appendage *large* and *small*, as *large half-degree, small half-degree.*

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* The author's opinion that the term *half-degree* should be discarded is doubtless a just one. Its use is not really necessary in any case, while its abandonment, in common with that of the other terms—*half-tone, semitone, chromatic interval*, and the

In contradistinction from the superfluous prime, the non-superfluous, the real unison (§ XXII), is usually called *the pure* prime.

(2.) A *second* is said to be *diminished* when it is still smaller by one key than the small second, as *e. g.* g♯—a♭, d♯—e♭, a♯—b♭, e♯—f, B♯—c, f×—g, c×—d, c♯—d♭, f♯—g♭; B—c♭, e—f♭, a—b♭♭, d—e♭♭, g—a♭♭. This is hence, so to speak, an enharmonic interval, or, in other words, it is the relation subsisting between two enharmonically parallel tones (§ XIX.) and therefore is in itself an equivocal interval (§ XXI.), inasmuch as on the piano-forte it appears as a pure prime.

The superfluous second is still larger by the distance of one key than the great second, as *e. g.* B♭—c♯, f—g♯, c—d♯, g—a♯, d—e♯, a—b♯, e—f×, b—c×; e♭—f♯, a♭—b, d♭—e, g♭—a, c♭—d, f♭—g, B♭♭—c, e♭♭—f.

(3.) *Diminished thirds* are as follows: c♯—e♭, f♯—a♭, B—d♭, e—g♭, A—c♭, d—f♭, g—b♭♭;—g♯—b♭, d♯—f, A♯—c, e♯—g, B♯—d, f×—a, c×—e, g×—b. In respect to keys, the diminished third is a large second, *e. g.* C♯—D♯ is the same thing as D♭—E♭.

Superfluous thirds are as follows: e♭—g♯, B♭—d♯, f—a♯, c—e♯, g—b♯, d—f×, A—c×, e—g×;—A♭—c♯, d♭—f♯, g♭—b, c♭—e, f♭—a, B♭♭—d, e♭♭—g.

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like, would evidently be attended with the advantages which the author suggests, namely: it would, on the one hand, conduce to simplicity by uniformly employing only one term instead of half a dozen; while, on the other, it would leave a term to be exclusively employed which is entirely specific and definite, a term which would always point out precisely and unequivocally the thing intended. The term *superfluous prime* uniformly means the interval between the tone denoted by a certain letter and a tone denoted by the same letter when sharped or flatted; while the term *small second* as uniformly means the interval between the tone denoted by any letter and the tone denoted by the next letter above when the latter is flatted, or the next letter below when the latter is sharped, and also the interval between the third and fourth, and between the seventh and eighth degrees of the so called natural scale; and thus all is made simple, clear, and definite.

And moreover, whenever we might have occasion to speak of the distances between the successive letters or tones of the scale, without the formality of giving them their technical interval names, we could call them, as the author does, *large degrees* and *small degrees.*

If however the choice were to be made between the use of the terms *half-degree* and *half-tone*, it is plain that the author would decide with the translator in preferring the former. It is on this ground that the translator has, to a limited extent, adopted the term *half-degree.* It was thought that the settled and universal custom, which has obtained with the Americans and the English, of using the terms *tone*, *semitone*, &c. would scarcely permit a total abandonment, at present, of all analogous terms, leaving none that could be employed as substitutes and could be applied in substantially the same way. The term *half-degree* therefore has been adopted as the less of two evils.—Tr.

(4.) *Diminished fourths, i. e.* still smaller than small fourths, are as follows: D♯—G, E—A♭, B♯—e, c—f♭, F×—B, F—B♭♭, &c.

Superfluous fourths in our sense of that term, *i. e.* fourths by one degree larger than large fourths, are as follows: f—b♯, f♭—b, c—f×, b♭♭—e, E♭—A♯, &c.—That the term *superfluous fourth* is used by many music teachers in a different sense, has already been observed on page 56.

(5.) *Diminished fifths* in our sense of the word, *i. e.* fifths smaller by one degree than the small fifths, are as follows: B♯—f, B—f♭, F×—c, E—B♭♭, and the like. Here also we again call attention to the fact, as remarked on page 56, that many musicians understand a different thing under the term diminished fifth.

Superfluous fifths are as follows: C—G♯, G—d♯, A♭—e, e—b♯, F♭—c, B—f×, B♭♭—f, and so on.

(6.) *Diminished sixths* are as follows: B—g♭, A♯—f, e♯—c, E—c♭, F×—d, D—B♭♭, F♯—d♭, &c.

Superfluous sixths: E♭—c♯, G♭—e, F—d♯, G—e♯, c♭—a, B♭♭—g, E—c×, A♭—f♯, &c.

(7.) *Diminished sevenths* are as follows: B—a♭, G♯—f, C♯—B♭, B♯—a, G—f♭, F×—e, F—e♭♭, F♯—e♭, &c.

Superfluous sevenths: F♭—e, c—b♯, G—f×, E♭♭—d, A♭—g♯, &c.

(8.) The *octave* also, which in the series of the natural tones we found to be only of one and the same magnitude—only *pure* (or perfect), page 57, can, by chromatic transposition, be presented as *smaller* and *greater* than it is in the series of the natural tones. In the one case—*i. e.* when smaller,—we apply to it the term *diminished;* in the other, the term *superfluous,* as, *diminished octave, superfluous octave.*

Diminished octaves are as follows: E—e♭, D♯—d, F—f♭, B♯—b, C×—c♯, E♭—e♭♭, &c.

Superfluous octaves: E♭—e, B♭—b, D—d♯, F♭—f, B—b♯, C♯—c×, E♭♭—e♭, &c.

In contradistinction from the diminished and the superfluous octave, that which is neither diminished nor superfluous, is, as we have already observed, called the *pure* octave.

(9.) *Diminished* and *superfluous ninths, tenths,* &c. are only repetitions of the like seconds, thirds, &c., one octave enlarged.

(3.)

DOUBLY DIMINISHED AND DOUBLY SUPERFLUOUS INTERVALS.

§ XXXIX.

Doubly diminished and *doubly superfluous intervals* are also conceivable, as *e. g.* a doubly superfluous second: g♭—a♯,—a doubly superfluous octave: G♭—g♯, B♭—b♯,—a doubly diminished octave: G♯—g♭, B♯—b♭, &c.

Indeed, even *more than doubly* diminished and *doubly superfluous* intervals may be conceived of.

(D.)

SIGNS FOR THE DIFFERENT INTERVALS.

§ XL.

For the purpose of representing the different distances of tones by short signs, we find it convenient to employ our ordinary figures, making the figure 2 represent the interval of the second; the figure 3, a third; 4, a fourth, &c. We will specifically designate *the small* [or minor] intervals by a *dot placed* BEFORE the figure, and *the large* [or major] intervals by a *dot placed* AFTER the figure; *the diminished* intervals by *two* dots *before* the figure, and *the superfluous* by *two* dots placed *after* the figure.

According to this plan

the sign •6, *e. g.* denotes a small sixth,
“ “ 6• a large sixth,
“ “ ••6 a diminished sixth,
“ “ 6•• a superfluous sixth.

(E.)

EQUIVOCALNESS OF INTERVALS.

§ XLI.

By casting a glance over all the intervals hitherto enumerated, it will be observed that they are all without exception equivocal. We have already directed attention to this equivocalness in some particular instances, as *e. g.* in the case of the small fifths, the superfluous prime, and the diminished second. But all the rest also are of the same character.

To wit, in respect to the number of keys, the following intervals coincide:

(1.) *Large* intervals with others that are *small.* This is the case in respect to the large fourth and small fifth, as *e. g.* F—B and B—f, G♯—d and d—g♯, and the like.

(2.) *Large* intervals with *diminished* intervals, namely:

(*a.*) The large second with the diminished third, as *e. g.* B—c♯ and B—d♭, c—d and B♯—d, &c.

(*b.*) The large thirds with diminished fourths, as, *e. g.* c—e and c—f♭, or B♯—e.

(*c.*) The 5• with the ••6, as *e. g.* E—B and E—c♭; c—g and B♯—g;

(*d.*) The 6• with ••7, as *e. g.* A—f♯ and A—g♭, B♭—g and A♯—g;

(*e.*) 7• with ••8, as *e. g.* C—B and C—c♭; B♭—a and A♯—a.

(3.) *Small* intervals coincide with others that are *superfluous:*

(*a*) The •2 with 1••
(*b*) " •3 " 2••
(*c*) " •4 " 3••
(*d*) " •6 " 5••
(*e*) " •7 " 6••

In like manner it will be found that *diminished* intervals coincide with *superfluous*, and vice versa: *e. g.* ••6 and 4••; E♯—c and F—B♯, &c.

All the intervals might now, though in a less extended and formal manner, be again gone through in respect to the point here involved, and perhaps a table be made out after the following form:

"Two tones belonging to one and the same key, may be either a pure unison, as *e. g.* e—e, or a diminished second, as *e. g.* e—f♭."

"Two tones belonging to two immediately proximate keys, may be either a superfluous prime, or a small second, or a doubly diminished third, as *e.* g. e—e♯, e—f, e♯—g♭, &c."

"Two tones, when one key lies between, can be either 2•, as *e. g.* e—f♯, or ••3, e—g♭, &c."

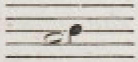
"Two tones, between which there are two keys, may be—&c. &c."

(F.)

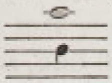
INVERSION OF INTERVALS.

§ XLII.

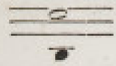
If the lower of two different tones, is raised by one octave or *by a double octave,* &c. *so that it becomes higher than the other which before was the highest;* or, which amounts to the same thing, *if the higher tone is lowered by octaves until it comes to be lower than the other,*—in short, if the two terms of an interval are reversed so that the lowest becomes the highest and the highest lowest, as *e. g.* if the lowest tone of the interval represented here at J

J


is transposed by an octave higher as at K,

K


or if the higher is made an octave lower as at L,

L


(which last is the same as it respects the point in question, inasmuch as it amounts to the same thing, whether the lower tone is raised above the higher or the higher is put down below the lower, since in either case the lowest becomes the highest, and the highest lowest,) an *inversion* of an interval [*or a turning of an interval upside down*] is said to take place.

Thus the foregoing example in K is an inversion of that in J, or, which is the same thing, J is the inversion of K. For if K is again inverted, the position J again occurs, as a matter of course. Accordingly the two different positions are, as well backwards as forwards, reciprocally inversions of one another.

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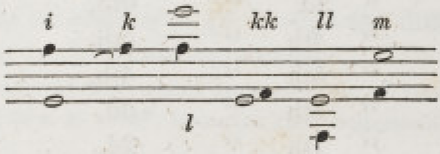
§ XLIII.

As the nature of an inversion consists in the circumstance, that, of two different tones, the lower becomes the higher, or vice versa, it follows,

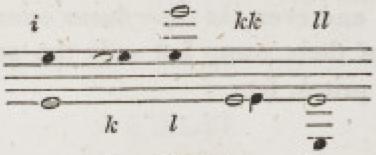
(1.) That the unison or pure prime is not susceptible of inversion, because, of two tones, neither of which is higher than the other, *the higher* cannot of course be placed under *the lower;* and it follows,

(2.) That, in order to invert two tones which are farther from one another than a diminished octave, the upper tone must be lowered two or more octaves, or the lower raised two or more octaves, or *both at the same time must be mutually transposed by one or more octaves.* For if, in order to invert a ninth, if you please, as *e. g.* $\bar{e}$—$\bar{\bar{f}}$ at *i* in the following example,

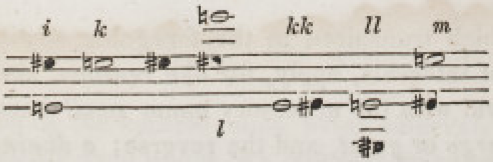


we were only to raise the lower tone $\bar{e}$ by one octave as at *k*, the interval $\bar{e}$—$\bar{\bar{f}}$ would then be changed only into $\bar{\bar{e}}$—$\bar{\bar{f}}$, in which case the $\bar{\bar{e}}$ would still remain below the $\bar{\bar{f}}$, and so consequently there would yet be no inversion. An inversion is not effected until the $\bar{e}$ is raised by *two octaves*, as $\bar{\bar{f}}$—$\bar{\bar{\bar{e}}}$, as at *l*. So likewise the example at *i* is not inverted by the transposition *kk*, the inversion not occurring until as at *ll* or *m*.

So also the pure octave cannot be said to be inverted in such a form as at *k* and *kk*, but only as at *l* and *ll*.



and the superfluous octave also, fig. *i*, is not inverted as at *k* and *kk*, but only as at *l*, *ll*, and *m*.



§ XLIV.

It is plain to be seen, that, in every inversion, the distances of the tones do not remain the same. The two tones which in the example on page 62, at J, were at the distance of a second from one another, become, on being inverted as at K or L, a *seventh* apart: or, according to the usual way of speaking, a second becomes by inversion a seventh. In like manner the third becomes by inversion a sixth, as, *e. g.* c—e become e—c̄, or E—c; the fourth becomes a fifth, as c—f; f—c̄ or F—c: (for which reason therefore many call the second, third, and fourth *radical intervals*, and the rest *derived intervals*.) And since, as we see, every thing here holds good reciprocally taken, as well one way as the other, it follows that, vice versa, the 7th becomes changed by inversion into a 2d, the 6th into a 3d, and the 5th into a 4th; *e. g.* d—c̄ becomes c—d or c̄—d̄; e—c̄ becomes c—e or c̄—ē; f̄—c̄ becomes c—f or c̄—f̄. (Hence we can with equal propriety call the 7th, 6th, and 5th radical intervals, and regard the 2d, 3d and 4th as derived from them.)

A general view of the above alterations and derivations is presented by the following table:

The 2d becomes a 7th,
" 3d " 6th,
" 4th " 5th,
" 5th " 4th,
" 6th " 3d,
" 7th " 2d,

or 2, 3, 4, 5, 6, 7.
7, 6, 5, 4, 3, 2.

where the highest figure or number always stands opposite to the lowest, and the lowest opposite to the highest; because, in an inversion, the whole is reversed.

The pure octave alone gives by inversion no other interval, but presents again a pure octave, and consequently only the same interval again in a higher or a lower position.

Moreover also, all intervals which are greater than a pure octave, as *e. g. the tenth, the ninth*, &c. and even *the superfluous octave itself* give likewise no peculiar intervals of their own, but only the same as the third, the second, the superfluous prime, &c.

§ XLV.

The remarks which transpired in the foregoing section relative to the numerical names of intervals, apply, for like reasons, also to the accessory names. An interval with the accessory name *small* becomes one with the accessory name *large* or *great*, and the reverse; *a diminished* interval becomes a *superfluous* one; and a *superfluous* interval becomes a *diminished* one, as follows:

•2 — 7• — •2
•3 — 6• — •3
•4 — 5• — •4
•5 — 4• — •5
•6 — 3• — •6
•7 — 2• — •7

••2 — 7•• — ••2
••3 — 6•• — ••3
••4 — 5•• — ••4
••5 — 4•• — ••5
••6 — 3•• — ••6
••7 — 2•• — ••7
••8 — 1•• — ••8

or •2, •3, •4, •5, •6, •7,
7•, 6•, 5•, 4•, 3•, 2•,

and ••2, ••3, ••4, ••5, ••6, ••7,
7••, 6••, 5••, 4••, 3••, 2••.

i. e. small seconds become *large* sevenths, and, on the contrary, *large* sevenths become *small* seconds. *The small* seventh becomes a *large* second, and the *large* second a *small* seventh. And so also ••2 becomes 7••, and 7•• becomes ••2. ••8 becomes 1••, and the latter becomes ••8, &c.

In like manner, as can easily be perceived, doubly diminished intervals become doubly superfluous ones; and the latter, again, doubly diminished intervals, &c.

It might be useful *as an exercise* to go through the different inversions of the intervals somewhat in the following manner:

The *prime*, that is to say, the *pure* prime is susceptible of no inversion.

The *superfluous* prime, as *e. g.* c—c♯, becomes the diminished octave, as C♯—c or c♯—c̄.

The *second* becomes by inversion the seventh, that is,

The *diminished* second becomes the superfluous seventh, as, *e. g.* B—c♭ becomes C♭—B or c♭—b, F♯—g♭ becomes, &c.

The *small* second becomes 7•; as *e. g.* G—A♭ becomes A♭—g, &c.

The *large* second becomes—&c.

The *superfluous* second becomes—&c.

The third becomes, &c. &c.

(G.)

GENERAL VIEW OF THE INTERVALS.

§ XLVI.

In our investigation of the intervals thus far we have found,

That the fifth, sixth, and seventh are inversions of the fourth, third, and second.

That the octave, ninth, tenth, &c. are only repetitions of the prime, second, third, &c.

That, in the series of the natural tones, every interval, except the prime and the octave, presents itself under two different magnitudes, and that the difference between large and small intervals consists in one key more or one key less.

That an interval which is by one key smaller or larger than it occurs in the series of the natural tones, is called diminished or superfluous; that any interval which is still larger than the superfluous is denominated doubly superfluous, and any one that is still smaller than the diminished is termed doubly diminished; &c.

That, finally, the large intervals become by inversion small, and, vice versa, the small become large; the diminished become superfluous, and the latter become diminished; the doubly diminished become the doubly superfluous, and the reverse.

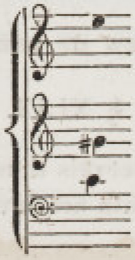
This view very much facilitates an acquaintance with the numerously multiplied different intervals. For if one only once understands the series of the natural tones, nothing is more easy than to distinguish the large and small seconds, thirds, and fourths from one another, and, by comparison with these, to know immediately all the other intervals also,—namely the large and small sevenths, sixths and fifths, as inverted small and great seconds, fourths, and thirds; and all the superfluous intervals, by the circumstance that they are one key greater than the great; and all diminished intervals by the fact, that that they are still smaller than the small. In a similar manner one comes to a knowledge of the doubly diminished and the doubly superfluous intervals, in case such occur.

This view not only saves an intolerable wearisomeness to the memory, but it also furnishes, instead of a mere knowledge got by heart, a clear apprehension of the real relations of the intervals.

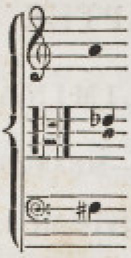
It will always be quite a useful exercise for a beginner, as a method of practising himself into a knowledge of the intervals, to take the trouble to write in notes all the species of intervals separately on all possible degrees of the staff, and then to play them on the piano-forte. It will especially be well also, in writing as above suggested, not only to use interchangeably, at one time one clef and at another time another, but also to write the intervals not merely on one and the same staff, but sometimes on two or more.

In fig. 10, below, *e. g.*

(Fig. 10.)



the tone $\overline{g}\sharp$ is the superfluous fifth of $\bar{c}$; e is the small sixth from g♯ and the large third (the large tenth) from $\bar{c}$; $\overline{g}\sharp$ is the small under-sixth from $\bar{\bar{e}}$ (or sixth below $\bar{\bar{e}}$); $\bar{c}$ is the large under third (under tenth) from $\bar{\bar{e}}$. Or, fig. 11:



$\bar{c}$ is the small fifth from f♯; $\bar{e}\flat$ is the diminished seventh from f♯, and small third from $\bar{c}$; $\bar{a}$ is a small third (or tenth) from f♯, the large sixth from $\bar{c}$, the large fourth from e♭,—f♯ is a small under fifth from $\bar{c}$, a diminished under seventh from e♭, a small under third (under tenth) from $\bar{a}$; $\bar{c}$ is a small under third from $\bar{e}\flat$,—&c.

REMARK.

The musical literati have *disputed much as to how many intervals there properly are.* One assumes 52, others teach that there are only 35, 24, or even only 18, and explain the rest as "merely chimerical and imaginary intervals." But this view of the subject seems to me to be a very strange one, and the controversy involved in it, to be both a singular and an unmeaning one!

How many different grades of distance between two tones, are, in themselves and according to the nature of our system of tones, conceivable, we have already seen; the dispute can no more be on this point, than there can be a dispute in mathematics on the question, how many different magnitudes there are!

This therefore cannot properly be the meaning of the contending parties; they enter the field only on the question, *what intervals actually occur in music?* With *this* question *we* have nothing to do—at least in *the present connection*, where our only purpose is to adopt such a nomenclature as will afford us a name of a definite meaning for every conceivable species of distance between tones, whether such species of distances occur frequently, or seldom, or even never; somewhat in the same manner as we designate every point of the earth's surface, whether frequented or inaccessible, according to degrees of length and breadth [of longitude and latitude]. But who is found in this department to contend on the point, how many degrees of latitude there really are? whether there actually is *e. g.* the 89th degree? and perhaps calling this 89th degree a chimerical, a mere imaginary latitude, because he regards it impossible that it ever should be explored by a human being?

CHAPTER III.

PRELIMINARY.

RHYTHMICS.—MEASURE OF TIME.

DIVISION I

IDEA OF RHYTHM AND MEASURE.

§ XLVII.

The musical art requires, in addition to the connection of different tones, still another property, which, though it is not absolutely essential to the nature of music,* has nevertheless the power of very much enhancing its beauty. This is *rhythm* or *measured movement*, and consists in the circumstance that the times in which the tones and combinations of tones sound, are exactly *measured* in relation to each other by quotas or proportional parts, and that the times thus measured out are also accurately adjusted *in relation to the stress of voice respectively appropriate to each*, and are symmetrically accented.

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* The author does not mean by this, that rhythm is not material to *the excellence* of music, for he repeatedly and expressly affirms the contrary. He only means to say that rhythm is not absolutely essential to the essence of music, in such a sense as that music cannot exist without it. A man may still preserve his identity and retain his essential properties as a human being, though all his limbs be cut off, and all the symmetry of his proportions be destroyed, and all his beauty be effaced: he is still a man, it is true; but no longer a man of the appropriate human comeliness and beauty, no longer possessed of the attributes which alone can give the appropriate grace and loveliness to his form, or can render him an object desirable to behold. It is in this sense that music may be robbed of rhythm, and yet be music. It is still music in essence, in the same way as a man is still a man, though deprived of his limbs, his proportions, and his beauty.

That rhythm is material to *the goodness* of music, is one of the plainest of all truths. No property is more indispensable; none is more universally appreciated by the instinctive capacities of every musical constitution. Indeed, it is not too much to say, that musical genius and the rhythmical sense are co-ordinate qualities, and that the one ascends or descends the scale of perfection precisely with the other. It probably will be found universally true, that the higher is a man's native musical genius in the general, the more delicate, acute, and prominent is his appreciation of rhythm. If there be a property in music that can charm and enwrap the feelings and that can carry us away with its fascinating and delightful impressions, it is that exact, even, regular, uniform, symmetrical movement which we call rhythm. Of all the attributes, therefore, which pertain to the musical art, this should be the last to be sacrificed.—Tr.

I say that rhythm does not belong necessarily to the nature of music, because it is a matter of fact that not all music is rhythmical or measured. In the usual choral singing of the church congregations, *e. g.* the longer or shorter duration of the tones in relation to one another is not at all adjusted to measure, but each tone is held out at pleasure, one about as long as another; and the most that is done is sometimes to accent this or that tone more or less, according to the greater or less stress of voice due to the syllable of the text. But after all, this is not a measured movement, it is not rhythm; there is in the case no such measuring and accentual adjusting of the times, as we find in rhythmical music; one can beat no time to such a performance.

If, on the contrary, a symmetrical measured division of the times is found in a piece of music, *i. e.* the time is distributed into exactly equal general divisions, and these are again divided into equal parts, and the latter are farther separated into equal smaller quotas or proportional parts, &c. and the duration of the tones in relation to one another is exactly measured according to such divisions of time, so that a general division always appears as a symmetrically arranged group of several smaller portions of time, and these taken together as a smaller subordinate group of yet smaller parts, and the accent is also symmetrically apportioned amongst all these divisions of time,—then the music is measured and rhythmical, and sustains the same relation to unrythmical music, as poetry does to prose. This is the music by far the most in use at the present day.

Its essential nature, accordingly, consists in a perfect symmetry, as it respects the duration and the accent of the tones. This symmetry is designated by the terms *rhythm*, *measure*, and also *metre*.

The doctrine of rhythm is called *rythmics*, and also *rhythmopœia*, and *metrics*.

DIVISION II.

THE MARKING OF THE DURATION OF TIME.

(A.)

DURATION OF THE NOTES AND RESTS.

§ XLVIII.

How long or short is to be the duration of a tone, is shown, in written music, primarily* by the different forms of the notes. These forms, (not to mention those employed in the most ancient times and not occurring at all at the present day,) are as follows:

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* There are two ways of showing the duration of tones. One is to indicate it by the particular *form of the notes*, and the other is to denote it by certain *marks of expression* placed either at the beginning of a piece of music or over particular notes along the course of a piece. The former is what the author calls *the primary* method.—Tr.

(*a.*) 𝆶, called the *Maxima, the largest*,

(*b.*) 𝆷, *Longa*, the long;

(*c.*) 𝅜 or |𝅜|, |𝅜|, ‖𝅜‖, *Brevis*, the short, or quadrangle;

(*d.*) 𝅝, *Semibrevis*, the half-short;

(*e.*) 𝅗𝅥 or 𝅗𝅥, *Minima*, the smallest;

(*f.*) 𝅘𝅥 or 𝅘𝅥, *Semi-minima*, the half-smallest;

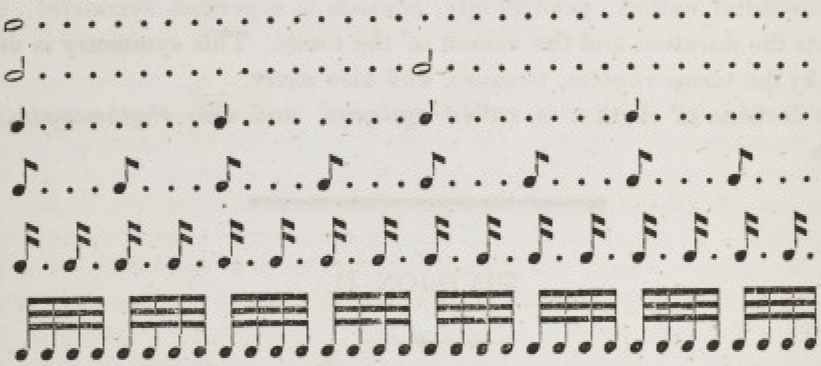
(*g.*) 𝅘𝅥𝅮 or 𝅘𝅥𝅮, *Fusa* or *Unca*, the extended, or hooked [stemmed];

(*h.*) 𝅘𝅥𝅯 or 𝅘𝅥𝅯, *Semi-Fusa* or *Bis-Unca*, the half-extended or twice-crooked [double-stemmed];

(*i.*) 𝅘𝅥𝅰 or 𝅘𝅥𝅰, *Sub-semifusa* or *Ter-unca*, the thrice crooked, [tripple-stemmed,] &c.

Each preceding note indicates, as the above names, in some of the instances, would lead one to suppose, always a duration of time twice as long as the following. The time of each following note is half as long as that of the preceding, as is shown by the diagram in fig. 12, borrowed from *Logier*.

(Fig. 12.)



Hence arose the more modern German mode of designation which probably, to most readers, is better known. To wit: the *semibrevis*, 𝅝, is taken as unity, and the name *whole-note* is applied to it. The *minima*, 𝅗𝅥, inasmuch as it is only half so long as the former, is called a *half-note;* the *semi-minima*, 𝅘𝅥, being half as long as the so called *half*, is accordingly denominated a *quarter-note*, and so on: 𝅘𝅥𝅮 *eighth-note;* 𝅘𝅥𝅯 *sixteenth-note*, &c. Those forms of notes which are greater than the *semibrevis* have from time to time changed their meaning, and are at the present period but very seldom used. No modern names for them have, therefore, been introduced, and, in case they anywhere occur, they must still be called by their original names, *brevis*, *longa*, and *maxima;* or perhaps *double*, *four-fold*, and *eight-fold notes*.*

Moreover musicians are generally accustomed to teach, with entire inaccuracy, that the *brevis* has the length of *two measures;* the *longa*, *four measures;* the *semibrevis*, *one measure;* the *minima*, *half a measure:* for all this applies, as we shall soon perceive, only to certain species of measure, whereas to all the rest it does not apply. (§ LVI. LVIII.) Yet even Sulzer has adopted that gross error in his Theory of the fine Arts, in the article on notes. The *minima* has either the length of *two quarter notes* or of *four eighth notes*, &c.;—the *semibrevis*, *two half notes* or *four quarter notes*, &c.;—the *brevis*, *two semibreves* or *whole notes*, or four halves, &c.;—the *longa*, *two breves*, &c. &c.

§ XLIX.

The whole matter of the meaning and value of notes, as it has just been presented, reduces itself, as one perceives, merely to this, that (*a*.) each larger or longer note represents *the double*, *the fourfold*, *the eightfold*, &c. of a smaller one; but that we have no form of note to represent *the threefold*, *the sixfold*, *the ninefold*, &c. of a smaller note; and that thus, (*b.*) vice versa, each smaller note is either *the half*, or *the fourth*, or *the eighth* part of the larger form of note, while there is no note to distinguish *a third*, *a sixth*, *a ninth*, &c. part of a larger one.

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* It may not perhaps be without utility, to advert in this connection to the Italian and French appellations of the lengths of the notes. It is to be observed, however, in respect to these Italian and French technical terms, that their meaning is for the most part very fluctuating and undetermined; for, neither the Italians nor the French are agreed among themselves on this point, though the latter have more recently, since the time of the revolution perhaps, adopted a more definite terminology and have retained it with a tolerable degree of firmness.

𝆶 The *Maxima* is in Italian *Massima*, in French *Maxime*;

𝆷 The *Longa*, Italian *Lunga*, French *Longue;*

□ or 𝅜 The *Brevis*, Italian *Breve*, French *Brève* or Carré;

𝅝 The *Semibrevis*, Italian *Semibreve*, French *Sémibrève* or Demibrève, also *Ronde;* at the present time *Blanche;*

𝅗𝅥 The *Minima*, Italian *Minima*, French formerly *Minime* or *Blanche*, but now *Demiblanche;*

𝅘𝅥 The *Semiminima*, among the Italian theorists and writers, *Semiminima*,—among practical musicians the more usual term is *un Quarto*,—French formerly *Demiminime*, but now *Noire;*

𝅘𝅥𝅮 The *Fusa* or *Unca*, Italian *Croma*, (Comp. Remark at § XVII.) French *Croche;*

𝅘𝅥𝅯 The *Semifusa* or *Bis-Unca*, Italian *Semicroma*, also after the German method—*un Sedecimo;* in French formerly *Semi-Croche*, but now *double croche;* by many—and even in several Italian and French dictionaries, the term is very erroneously taken to be *Biscroma*.

𝅘𝅥𝅰 The *Subsemifusa* or *Terunca*, Italian *Biscroma*, French Triple-croche. (One will readily notice that the appellation *Biscroma*, as here employed, does not stand in a proper relation to the term *Semicroma* (𝅘𝅥𝅯); but yet it is now currently used in this manner.)—French *Triple-croche*. (Previously to the sixteenth notes being called *Semicroches*, the thirty-second notes were termed *Double croches*, by which means there arose again among the French writers a false relation between the terms, and, with it, a confusion of their significations themselves.)

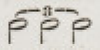
𝅘𝅥𝅱 Among the Italian practical musicians, this is called *Semibiscroma*, French *Quadruple-croche*.

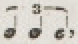
It has been sought to supply this twofold defect in two different ways. (*a.*) In the first place, it has been determined that a point, (originally perhaps a second small head of a note, placed after a note, shall enhance its value to the amount of one and a half of itself, so that *e. g.* a note otherwise having the value of only two halves, a so called *whole*, becomes, if we furnish it with a dot 𝅝.
equal in value to three half notes; a pointed *half*
𝅗𝅥.
becomes in like manner equal to three quarter notes or six eighths ♩. ♩.

It is practised moreover to put a second dot after the first; in which case the last dot has half the value of the first, &c.; and thus *e. g.* the following form in a piece of music 𝅝..
represents seven quarter notes, or fourteen eighths, &c.: namely, *the semibrevis* represents four quarters; the first point, two quarters; and the second point, half as much as the first, *i. e.* one quarter; and thus, in all, there are seven quarters.

In this way we are enabled perfectly to represent the one-and-half fold, the three-fold, the six-fold, twelve-fold, &c.—and also the seven-fold, the fourteen-fold, &c. of every unpointed note; since, as was just observed, the form 𝅝. represents one-and-a-half of the whole, or three half-notes; and so also the form 𝅗𝅥. three quarter-notes or six eighths, or twelve sixteenths, &c.;—the form 𝅝.. represents the $\frac{7}{4}$ fold or the $1\frac{3}{4}$ fold of 𝅝, or $3\frac{1}{2}$ half notes, or seven quarters, or fourteen eighths, &c.

(*b.*) In the second place, in order that we might not be limited in the subdivision of simple notes, exclusively to halves, quarters, eighths, &c., *triplets* or *trioles*,* (in French *triolets*, *triols*, or *triads*,) *sextoles*, *quintoles*, and the like, have been introduced. The substance of this mode of designation consists in representing three individual thirds of a note by three notes of the next smaller species, as *e. g.* three thirds of a whole note by three half notes, with a figure 3 written over them, to signify that these half notes are not designed to represent halves, but thirds of the next higher species of note (thirds of 𝅝):



Such a form of notes is called *a triole* or *triplet* (*i. e.* a thing of three parts, a three, a three-unit form) of half-notes; and in the same manner, three thirds of a half-note can be represented by writing three quarter notes with a figure 3 over them , and so on (comp. § LX.); and in a similar way can also be represented subordinate divisions into forms of five parts, forms of seven parts and the like, (*quintoles, septimoles*, &c.)

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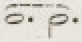
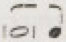
* The term *triole* is a diminutive derived from the Greek numeral adjective τρεις or from the corresponding Latin *tres*, *three*, and hence means *a little three*. Its signification, therefore, is the same as that of *triplet;* but inasmuch as we are obliged to employ the terms *quintole*, *sextole*, *septole*, &c. for similar diminutive combinations of notes, it is thought desirable, for the sake of uniformity, to use the term *triole* in preference to *triplet*. TR.

But all these expedients are still always defective and unsatisfactory.

For, in the first place, as it respects the enhancing of the value of a note by the addition of a point, it is after all impossible to represent in this way such forms as that of *nine eighths*, or *nine quarters*,—say the *nine quarters* of a 9-4 measure,—in a piece of music; and there is no other means of doing this than to change a whole note by the addition of a point into a one-and-a-half fold or six-quarter note, and so also a half-note into a three-quarter note, and then to bind the two together by a curved line, (⁀), thus:  or perhaps to couple together an eight-quarter note and a one-quarter note, thus: , and the like.

So also, the subdivision into *trioles*, *quintoles* and the like, leaves much yet to desire. This subject however we can more conveniently treat in § LXII.

The consideration of the fact, that, in more ancient times, the values of notes were, in the so called *modo perfecto*, divided into threes and threes, is not appropriate to the present connection, but belongs rather to the history of the art.

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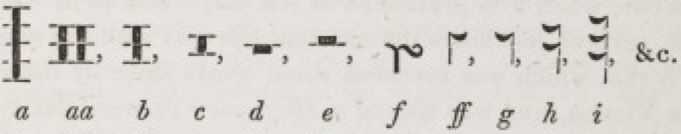
§ L.

The different forms of the notes or signs of tones, have different forms of *the marks of silence, pauses,* or *rests,* corresponding to them as follows:



Here also each character signifies the double of the next following: character *a* or *aa* denotes 32 quarters, or 16 halves or 8 wholes.—Character *b* denotes 16 quarters, 8 halves, or 4 wholes; character *c*, eight quarters; character *d*, four; character *e*, two, and character *f* or *ff*, one quarter, &c.

We often hear modes of expression employed in reference to this subject which are entirely incorrect, or at least in the highest degree inappropriate, namely: character *a* or *aa* denotes *eight measures;* character *b*, four *measures;* character *c*, two measures, &c. A little farther on, we will show that this is true only in certain species of measure.

(B.)

DESIGNATION OF TIME.

§ LI.

The above mentioned rhythmical signs indicate the duration which a tone or a rest is to have merely in *a comparative, relative* point of view; but not *positively, absolutely* or *unconditionally;* in other words, they merely tell how many times *longer* or *shorter* one tone is *than another*, but not how long a tone is *in itself*, absolutely considered.

In order to indicate this last, that is the so called *tempo*, or, as it is also termed, the degree of *the rythmical movement*, or the measure, the only method practised, until modern times, was to employ the technical terms, *allegro*, *andante*, *adagio*, and many others, or the correspondent terms in the vernacular language of each country where music was written.

But as these designations are very uncertain and variable, the necessity of a more sure scale for the measurement of time has long been felt. (See Leipz. Musikal. Zeitung, 1813, No. 27, S. 441.)

To meet this exigence, various machines have been invented and proposed since the seventeenth century, under the names of *Measure-measurers*, *Measure-clocks*, *Musical Time-measurers*, *Chronometers*, *Rhythmometers*, *Metrometers*, *Measure-indicators*, *Tempo-indicators*, and the like, which were intended to strike quicker or slower, just according as they were regulated to this or that particular number; and hence, in compliance with this plan, musical composers, instead of employing the technical terms *Allegro*, *Andante*, and the like, were now, with reference to these striking machines, hereafter merely to place the following signs at the commencement of their piece of music, namely: ♩ 36 or 𝅗𝅥 45, &c. that is: "in the former piece of music, a quarter note is to be taken as often as there occurs one stroke of the machine, when it is adjusted to No. 36;—and in the latter piece of music, the half notes are to be performed as rapidly as the strokes of the machine occur, when it is graduated to No. 45;" and so of the rest.

Of these several machines the one that has met with the most universal reception is that which was invented some years since by the mechanician *Maelzel*, in Vienna, and was named *a Metronome* (a word derived, as many suppose, from *metron*, measure, and *nomos*, song; in which case, the form of the word would more appropriately be, *Nomometer*;—or the term is, perhaps, more correctly derived from the Greek inspector or supervisor of measures, *μέτρονόμος*; or, literally, *metri-modus*, the prescribed manner of the measure.) The inventor, in his numerous journeys into Germany, Holland, England, France, and many other places, succeeded in persuading a large number of living musical composers into a formal subscription to his machine, in which they usually committed themselves to him to indicate the time in their compositions thereafter, according to the degrees of his machine, and by this means he was enabled to go into a profitable manufacture of these metronomes.

In fact Mälzel's machine really merited this fortune in preference to any other yet invented, partly on account of its fine internal and external mechanism, but especially because the inventor has given it such a division that its numbers always show at the same time how many such strokes make out the duration of a minute of time. Adjusted, *e. g.* to the number 60, it strikes just 60 times in a minute; thus each stroke continues a second. At the number 120 it strikes 120 times in a minute; at 50, fifty times, &c.

Now in case the time [tempo] is designated in a piece of music by this method, as *e. g.* ♩= 60 Mälzel Metron.

this tempo or time, as one perceives, is not only unequivocally determined for ever, for all periods of time; but every reader can immediately recognize and execute the degree of movement thus indicated, in case he only possesses one of these machines and has it at hand at the time when its use is required, provided it is made and adjusted precisely like that which the musical composer himself employed in measuring and indicating his tempo or time, without any derangement or corruption; (all which indeed it is not always easy to find.)

REMARK.

It is to be regretted that the presuppositions in this case are so numerous, and particularly that such metronomical signs are not only useless to all those who do not possess these machines, but also even to those who have them, except in cases where the machine can be placed close by.

The more important and interesting the article is in itself, the more must we regret this infelicity, and the more strongly must we wish in some way to surmount it.

Now this can in fact be done* by using, instead of Mälzel's machine, as can be done with entire satisfaction, merely a simple thread pendulum, *i. e.* any small weight as *e. g.* a lead ball of any size that may be preferred, suspended by a thread; an instrument, which every one can manufacture for himself in two minutes' time.

A pendulum, it is well known, swings faster in proportion to the shortness of the string; and slower in proportion as the string is longer. That is to say, a pendulum of 38 Rhenish or Vienna inches, *e. g.* strikes just once a second, and hence just as fast as Mälzel's metronome at No. 60;—a pendulum of 9 inches, as fast as Mälzel's machine at 120;—of 55 inches, as Mälzel at 50, &c. The table standing below contains a complete comparison and reduction of the degrees of Mälzel's metronome to the different lengths of a pendulum, both in Rhenish or Vienna inches and in French centimeters.† The table is to be read thus: the strokes of Mälzel's machine, when it is adjusted to No. 50, are equal to the strokes of a pendulum of 55 Rhenish inches, or 143 centimeters;—Mälzel No. 52 is equal to a pendulum of 50 Rhenish inches or 132 centimeters;—Mälzel 80 is equal to a pendulum of 21 Rhenish inches or 56 centimeters;—Mälzel 160 is equal to a pendulum of 5 Rhenish inches or 14 centimeters, &c.

Mälzel.		Rhen. Inch.		Centimeters reduced to Metres.
50	=	55 nearly	=	1.43.
52	=	50 “	=	1.32.
54	=	47 “	=	1.22.
56	=	44 “	=	1.14.
58	=	41 “	=	1.06.
60	=	38 “	=	1.00.
63	=	34 “	=	0.90.
66	=	31 “	=	0.82.
69	=	29 “	=	0.75.
72	=	26 “	=	0.70.
76	=	24 “	=	0.62.
80	=	21 “	=	0.56.
84	=	19 “	=	0.50.
88	=	18 “	=	0.46.
92	=	16 nearly	=	0.42.
96	=	15 “	=	0.38.
100	=	14 “	=	0.35.
104	=	13 “	=	0.33.
108	=	12 “	=	0.30.
112	=	11 “	=	0.28.
116	=	10 “	=	0.26.
120	=	9 “	=	0.25.
126	=	8 “	=	0.22.
132	=	7½ “	=	0.20.
138	=	7 “	=	0.18.
144	=	6½ “	=	0.17.
152	=	6 “	=	0.15.
160	=	5 “	=	0.14.

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* As I attempted to show in the year 1813 in der Leipz. Musikal. Zeitg. S. 441.

† A French centimeter is a measure of length equal to .3937 of an English inch. TR.

(Mälzel's metronome does not extend beyond 160.)

Thus, in order to be able to execute *e. g.* the designation *Mälzel* 𝅗𝅥 = 60, without the aid of the metronome itself, we have only to take the thread of a pendulum 38 inches long (or 1.00 centimeters), and cause the ball thereon, perhaps by an impulse from the hand, to swing back and forth a few times; each stroke of the pendulum then gives the time of a half-note, corresponding to the designation, Mälzel 𝅗𝅥 = 60.

This operation is the more easy, inasmuch as such a proceeding with the pendulum requires throughout no particular exactness and care, farther than only perhaps that one do not allow the pendulum to make too large or wide vibrations, because in this case the ball imperceptibly retards its motion. On the other hand, it is not at all necessary to measure the inches with very particular exactness; for even *a very considerable* difference of length, as *e. g.* the difference between 15 and 16, amounts, musically considered, to a mere nothing; and even that between 15 and 17 or 18 is scarcely perceptible.

For this reason, therefore, in the above table of comparison, all complicated fractions of inches, *e. g.* $\frac{3}{4}$ or $\frac{5}{4}$ and the like, inasmuch as such niceties are in practice entirely imperceptible, are in part wholly suppressed, and in part reduced to the simpler fractions (to half inches) to which they approximate; and one may without hesitation even discard these simpler fractions in practice, and may *e. g.* instead of $6\frac{1}{2}$ concisely take at pleasure either 6 or 7. So *millimeters*, &c. are also disregarded.

Calculated with extreme exactness, the lengths of pendulum corresponding to the degrees of Mälzel's metronome would be as follows:

Mzl.	Rhen. In.	Centimeters reduced to Metres.	Eng. Inch.	Mzl.	Rhen. In.	Centimeters reduced to Metres.	Eng. Inch.
50	54.708	1.4298	56.340	100	13.677	0.3574	14.085
52	50.581	1.3220	52.090	104	12.645	0.3305	13.022
54	46.903	1.2258	48.302	108	11.725	0.3064	12.075
56	43.613	1.1399	44.914	112	10.903	0.2844	11.228
58	40.657	1.0626	41.870	116	10.164	0.2656	10.467
60	37.992	0.9929	39.125	120	9.498	0.2482	9.781
63	34.459	0.9006	35.487	126	8.615	0.2251	8.872
66	31.398	0.8205	32.334	132	7.848	0.2051	8.083
69	28.727	0.7508	29.584	138	7.181	0.1877	7.396
72	26.383	0.6895	27.170	144	6.595	0.1723	6.792
76	23.679	0.6188	24.385	152	5.918	0.1547	6.096
80	21.369	0.5585	22.007	160	5.342	0.1396	5.502
84	19.383	0.5065	19.961	(168	4.845	0.1266	4.990)
88	17.661	0.4615	18.188	(176	4.415	0.1154	4.547)
92	16.156	0.4225	16.638	(184	4.039	0.1056	4.159)
96	14.839	0.3878	15.283	(192	3.709	0.0969	3.820)

The difference arising from the greater or less weight of the ball is still less perceptible than that produced by the slight variation in the length of the string; it even amounts to nothing at all. The same is true of the influence of the barometrical or thermometrical state of the air, and of the circumstance that a pendulum vibrates slower near the equator than it does near the poles, and the like. All these extremely nice differences are in music entirely imperceptible.

We see from all this, with what perfect convenience a mere simple thread pendulum can supply the place of a metronome; and that it would not therefore be amiss, if the composer should write the corresponding lengths of pendulum alongside his designation of time according to the degrees of the metronome, as *e. g.*

Andante, Mälzel metron. ♩ = 60 (Pend. 38 Rhen. inch);

for, such a designation of time would be immediately practicable to every one, as well by means of a simple thread pendulum, as by means of a metronome, and might thus be understood by thousands of readers, players, or music directors, to whom a designation of time written merely according to metronomical degrees is unintelligible, for the want of an opportunity to consult the oracle of a metronome or of a reduction table. One might, moreover, for the accommodation of those who may not be acquainted with the inch used, or who may not have it immediately at command, cause an inch scale to be printed in connection with this designation of the time. Then it would be *entirely* immaterial, whether one should use the Rhenish or the Parisian inch, the English inch, the French metre [mètres], or whatever else, as a measure; for, a piece of music thus marked, carries with itself, wherever it goes, its measure of time together with the measure of the inch employed in designating the time.

Finally, the most concise method of designating the time would be that of merely giving it *according to the lengths of a pendulum alone*, and thus concisely to write:

Andante, ♩ = 38 pend.

as I proposed before *the metronome* was thought of.*

Contemplating the matter in this point of view, it were indeed to be wished that Mr. Mälzel had written on the scale of his metronome the inches of a pendulum corresponding to its degrees, as *e. g.* 38 or 1 metre, where 60 stands; in which case the strokes of the metronome are just as quick as those of a simple pendulum 38 inches or 1 metre long;—so also 14, or 0,35 met. where 100 stands;—55 or 1,43 at 50, &c. His machine would thereby afford the additional advantage that it would at once serve the double purpose of enabling one to ascertain as well a time that is given by proportional parts of a minute, as one that is designated by lengths of a pendulum. The machine thus prepared would likewise enable the composer to give his intended time by means of it at once and without the necessity of a reduction table, according to the proportional parts of a minute and according to the lengths of a pendulum—both, at the same time; and every composer moreover who indicates his time by the lengths of a pendulum, at once thereby gains the advantage of being not merely intelligible to those only who have Mälzel's metronome before them, but to every one who will employ a mere simple thread pendulum.

In conclusion, and as additional proof and illustration of the positions assumed in the above tables, the two following lemmas may be here introduced from the subject of Dynamics:

(1.) Pendulums of equal lengths vibrate in equal times, even if their weights are unlike.

(2.) In pendulums of unequal lengths, the times in which they vibrate are as the square root of their lengths; and thus the lengths of the pendulums are as the square root of the times in which they vibrate.

Therefore a pendulum which is *e. g.* to vibrate *twice as slow* as another, must be *four times as long*, and vice versa, only a quarter as long in order to strike twice as fast.

Therefore, according to the table on page 75, Mzl. 56 is = 44, but Mzl. 112 is = $\frac{1}{4}$ of 44, *i. e.* = 11;—Mzl. 50 is = 55, but Mzl. 180 = $\frac{1}{4}$ of 55 = 13$\frac{3}{4}$ (or briefly = 14;—and according to the table on page 76, Mzl. 80 is = 21.369 Rh., but Mzl. 160 is = $\frac{1}{4}$ of 21.369, thus = 5.342; and Mzl. 40 would be = 4 times 21.369, thus = 85.476

Mzl. ♩ 120, or ♩ 9.498 Rh. would be = Mzl. 𝅗𝅥 60, or 𝅗𝅥 37.992 Rh.

This subject I have more fully discussed in another place,† where I have presented a general survey of the history of the chronometer from the year 1698 onward down to the latest time.

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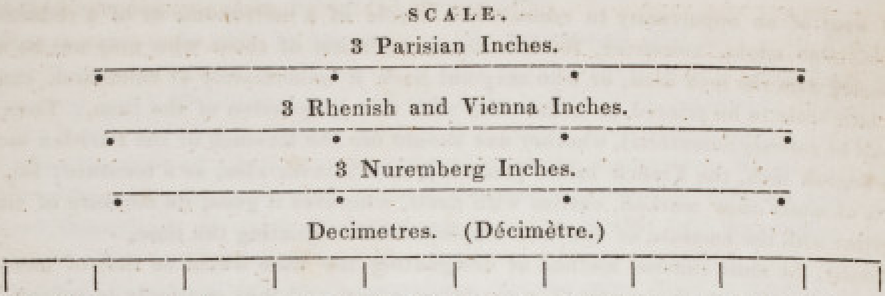
* In the year 1813 in No. 27 der Leipz. Allgem. Mus. Z. S. 441, (also copied in der Wiener Allg. Mus. Zeitung.)

† In der Leipz. Allg. Mus. Zeitg. v. Jan. 1813, No. 27, S. 441,—v. J. 1814, No. 27, S. 445; 1815, No. 5, S. 81, also in der 1. Aufl. dieser Theorie 1. Bd. S. 119 and 2. Bd. S. 334, also the article *Chronometer* der Erschischen Allgem. Encyklopädie der Wissenschaften und Künste.



The difference in the measure of the inch, as one perceives, is so little, that, as was observed on page 76, it can scarcely be deemed worthy of consideration.

DIVISION III.

DIVISION OF MEASURES.

§ LII.

Rhythm, as we see, consists in a symmetrical combination of different groups of time, partly larger and partly smaller. These groups of time are of two different species: the one consists of times which are unequal among themselves and are subordinately arranged under one another;* while the other consists of times which are equal among themselves, and are placed side by side one after the other as equal and parallel groups.†

The best known measure of such groups of time is that which we technically call *a measure*, and which, in written music, we are accustomed to bound by the bar. Hence, in treating the subject of rhythm, we will *begin with measures.*

A musical measure, it appears, is the measure of *several times.* The times of which it consists are called *parts of the measure* [or *measure-parts*]. These parts of measure are subdivided into *members of the measure* [or *measure-members*]; these are again divided into subordinate *smaller portions of time*, &c.

§ LIII.

A measure has either *two* or *three times* or *parts.*

A measure consisting of *two times* or *parts*, is called *even measure;* a measure consisting of *three times* or *parts* is called *uneven measure.*

---

* As *e. g.* the successive subdivisions of an individual measure. *A measure* in this case is the largest time or portion of time, its *parts* are the next largest, its *members* (consisting of halves of the parts) are the next largest, and so on. Thus there is here a group of times of unequal lengths, subordinately arranged under one another.—Tr.

† As *e. g.* measures, all of which are precisely equal throughout a piece of music. Tr

The reason why only a division into *two* or *three* parts is here spoken of, and nothing is said of measures consisting of *four*, *five*, *six* or more parts, will appear hereafter.

§ LIV.

The parts of a measure can be represented as well by the larger species of notes, as by the smaller; *i. e.* we can at pleasure either take the so called half-notes as the parts of the measure, or the so named quarter-notes, or eighths, or even whole notes, &c.

According as in this way the parts of a measure are formed by the one or the other species of notes, there arise different subordinate species of measure.

The latter are usually designated by the well known signs $\frac{2}{2}$, $\frac{3}{2}$, $\frac{3}{4}$, $\frac{3}{8}$, and the like.

This species of designation, called *the rhythmical signature*, depends upon the following idea:

The signature is to show, *in the first place*, whether the measure is two-fold or three-fold? and *secondly*, what species of notes are to represent the parts of the measure? The answer to these two questions is given by two figures placed the one above the other in the form of a fraction. The upper figure gives the answer to *the first* question, *i. e.* it shows, of how many parts the measure consists. The lower figure, as the answer to *the second* question, tells with what species of notes the parts of the measure are made. The designation $\frac{2}{2}$ is accordingly that of *two*-part or *two*-fold measure, whose parts are represented in the form of *half*-notes; the sign $\frac{3}{2}$ denotes *three*-part or *three*-fold measure, where again *half*-notes represent the parts of the measure; $\frac{3}{4}$ means *three*-part or *three*-fold measure, in which, *quarter*-notes represent the parts of the measure, &c.

At earlier periods of time, other signs were employed for rhythmical signatures, as:

O, ⊙, Φ, C, ₵, 2, 3, 2̸, &c.

and several others, whose signification has changed from time to time, and therefore has become variable and uncertain. At the present time, only a part of them are in use, as is shown in the following enumeration of the different species of measure.

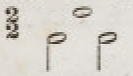
(A.)

THE DIFFERENT SPECIES OF EVEN MEASURE.

§ LV.

The simplest species of even measure, and the one that corresponds best to the usual division of notes and to the mode of naming them according to their values, is that which is formed by representing the two parts or two *halves* of a measure by *half-notes.* In that case, *the whole-note* really represents *a whole measure; a quarter-note, a fourth part* of the measure, &c. See fig. 13. *n.* below.

(Fig. 13. *n.*)



This species of measure is therefore very properly called *two-half measure.*

It is represented by the sign $\frac{2}{2}$; not unfrequently also by a large figure 2 with a perpendicular stroke through it; or also by a C with a similar stroke through it, (a half circle with a perpendicular stroke drawn through it,) thus:

$\frac{2}{2}$, 2̸, ₵.

The last two signs are frequently used also for the large alla-breve measure, to which we shall attend in § LVII.

The $\frac{2}{2}$ measure also is sometimes called alla-breve measure; by the by, it would be well always to distinguish it from the above mentioned large, proper alla-breve measure, by the additional appellation of *small alla-breve* measure.

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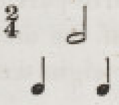
§ LVI.

But, instead of forming the parts of a two-fold measure by half-notes, we may construct them with *quarter-notes,* and thus arises *the two-quarter* measure, as in fig. 13. *o.* below:

(Fig. 13. *o.*)

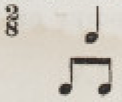


The sign for this species of measure is $\frac{2}{4}$, because such a species of measure consists of *two quarter*-notes; yet it is an improper designation, because *the quarters* here are properly *halves.*

Consequently the terms *quarters, eighths,* &c. are not here appropriate; for, the so called *half* is here *the whole* measure, *the quarter*-note is *half* of the measure, &c.

The two-eighth and *two-sixteenth* measure readily explain themselves from what has been presented above. The former occurs when we represent the parts of the measure by eighth-notes as in fig. 13. *p.*

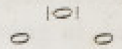
(Fig. 13. *p.*)



This species of measure is but little used. What was said of $\frac{2}{4}$ measure is easily applied to this, as also to the still more unusual $\frac{2}{16}$ measure.

§ LVII.

The two parts of two-fold measure may also be designated by *larger* notes than halves, namely by *semibreves* or whole notes, thus making what may be called *two-one measure*, or *alla-breve measure.*



The sign for this species of measure is either $\frac{2}{1}$, or a complete circle with a stroke through it, or a large figure **2**, or, which is still more distinguishing, a large figure **2** intersected by a perpendicular line, to wit:

$\frac{2}{1}$, ϕ, **2**, **2**.

It is frequently represented also by the sign which is more appropriate to the two-half measure, namely 𝄵; or by a 𝄴 without a stroke; this last sign belongs rather to the four-quarter measure, which we shall treat farther on.

This species of measure, therefore, is more justly entitled to its name, *alla-breve* measure, than the previously introduced *small* alla-breve measure, inasmuch as a *brevis* or *breve* just makes out one measure in this larger species of alla-breve measure.

(B.)

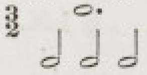
DIFFERENT SPECIES OF UNEVEN MEASURE.

§ LVIII.

Uneven measure is that which consists of *three* parts.

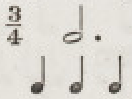
If we take half notes for the designation of such three parts of the measure, we obtain the three-half measure, $\frac{3}{2}$. A pointed whole in this case represents the duration of the whole measure, as in fig. 13. *q.*

Fig. 13. *q.*)



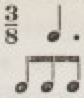
If we designate the three parts of the measure by *quarter-notes*, we have *the three-quarter* measure, $\frac{3}{4}$, as in fig. 13. *r.*

(Fig. 13. *r.*)



If we conceive *eighth notes* to represent the parts of the measure, we then have *the three-eighth* measure, $\frac{3}{8}$, as in fig. 13. *s.*

(Fig. 13. *s.*)



In a similar manner is explained the $\frac{3}{16}$ measure, not now in use.

If we choose to represent the three parts of the measure by very *large* notes, by *whole-notes, e. g.* we produce thereby *three-one* measure, which now seldom occurs. It is denoted by $\frac{3}{1}$ or by a large 3.

According to the usual division of our notes in respect to their length, there is no note which, taken by itself simply, can represent a three-part or three-fold measure (§ XLIX), and, in general, the names, *half*-notes, *quarter*-notes, &c. as can easily be seen, apply to all species of uneven measure in an improper and figurative sense only; the same is true also of the designations and appellations applied to these species of measure, as *e. g.* three-half, three-quarter, three-eighth, &c.; for in the $\frac{3}{2}$ measure *e. g.* the halves are properly *thirds;* and so in $\frac{3}{4}$ measure, the quarters are thirds, &c.

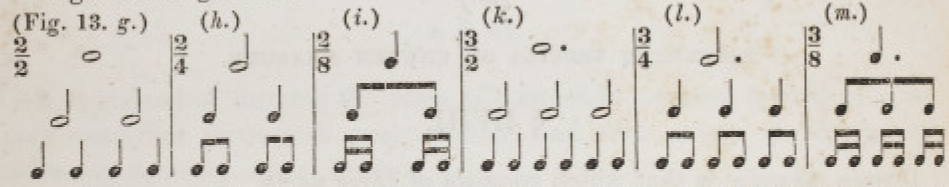
(C.)

SUBDIVISION OF THE PARTS OF THE MEASURE.

§ LIX.

The parts of every measure admit of being still farther separated into two or into three subdivisions.

Figures 13. *g.* to *m.* contain *even* subdivisions; *g. h. i.* contain even subdivisions of *even* parts of measure; but *k. l. m.* even subdivisions of *uneven* parts of measure.



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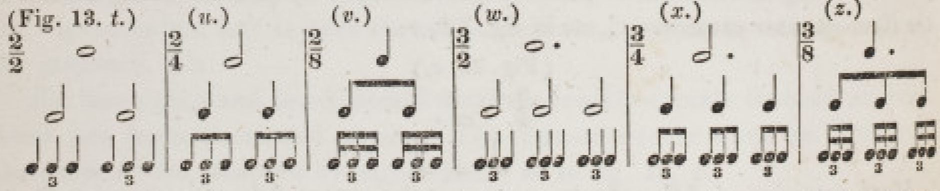
§ LX.

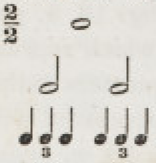
Uneven subdivisions are found in fig. 13 *t.* to *z.*



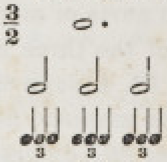
uneven subdivisions of *even* parts of measure occur in *t. u. v.;* uneven subdivisions of *uneven* parts of measure, in *w. x.* and *z.*

Since, as we have already remarked in § XLIX. page 71, our musical notation has no form of note to represent the third part of another note, so there is none to represent such an uneven subdivision of a part of the measure; but this defect must be supplied, according to § XLIX. page 71, by reducing three notes, two of which, under other circumstances, make out the value of the next larger species of note, to the value of two by means of a figure 3 placed over them. In order, *e. g.* to represent the third parts, as in fig. 13. *t.* and *w*,

(Fig. 13. *t.*)

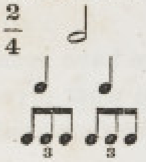


(Fig. 13. *w.*)

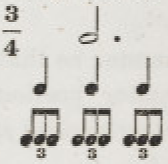


into which each half-note is distributed, we have no other sign than the quarter note, three of which now represent a half, and consequently *three quarters must have the value of a half.* Such a little group of three quarter notes is then called *a quarter triole*, *a triole*, (a thing of three parts, a three, a three-fold number of *quarter-notes*, in Italian, *terzina.*) So also eighth-trioles, are found in fig. 13. *u.* and *x*,

(Fig. 13. *u.*)

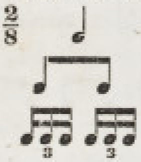


(Fig. 13. *x.*)

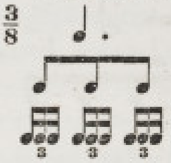


and sixteenth trioles in fig. 13. *v.* and *z.*

(Fig. 13. *v.*)



(Fig. 13. *z.*)



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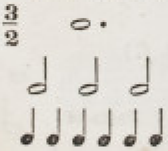
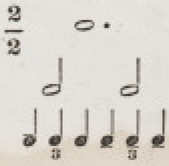
§ LX½.

It will moreover be perceived, that many of the divisions hitherto enumerated are in a certain respect very similar to one another and seem to be almost one and the same. Thus, *e. g.* the $\frac{3}{2}$ measure in fig. 13. *k.* below consists of six quarter notes, as well as also the $\frac{2}{2}$ measure in fig. 13. *t.*

(Fig. 13. *k.*)



(Fig. 13. *t.*)



So also it is perceived that, in fig. 13. *l.* on page 82, just as in fig. 13. *u.* on page 82, six eighth-notes fill the measure; and in like manner in fig. 13. *m.* on page 82, as also in fig. 13. *v.* on page 82, six sixteenths fill the measure.

By a somewhat closer view it will be perceived at the same time, that the division in fig. 13. *k. l. m.* on page 82 is still, fundamentally considered, essentially different from that in fig. 13. *t. u.* and *v.* on page 82. For in fig. 13. *k.* on page 82, the six quarter-notes are even parts or halves of uneven parts of measure, whereas in fig. 13. *t.* on page 82, they are uneven parts, thirds, of even parts of measure; in fig. 13. *k.* page 82, two quarter-notes make out one of the three half-notes which represent the parts of the measure; but in fig. 13. *t.* page 82, three-quarters make out such a part of the measure. In like manner, as will be perceived without farther explanation, fig. 13. *l.* page 82, differs from fig. 13. *u.* page 82, and fig. 13. *m.* page 82, from fig. 13. *v.* page 82.

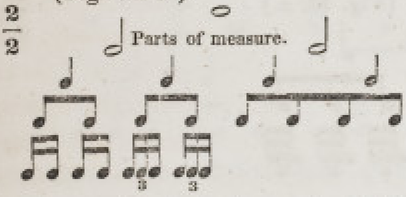
Still another essential distinction consists in the totally different division of the accents, to which subject we shall soon recur. (§ LXVII.)

§ LXI.

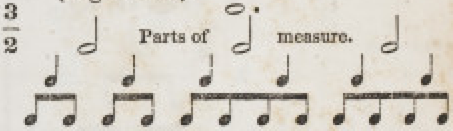
After the same manner as that in which we have seen the parts of measures divided into smaller portions of time, in what precedes, these last admit of being still *farther divided into yet smaller times*, either even or uneven.

In fig. 14. *a.* and *b*

(Fig. 14. *a.*)



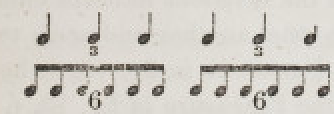
(Fig. 14. *b.*)



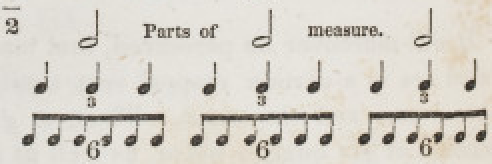
each quarter-note is again divided into two eighth-notes.

In fig. 14. *c.* and *d.*

(Fig. 14. *c.*)



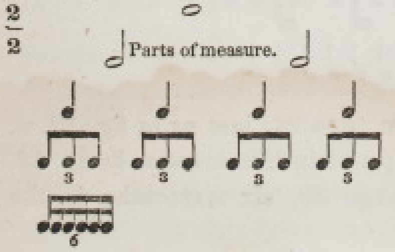
(Fig. 14. *d.*)



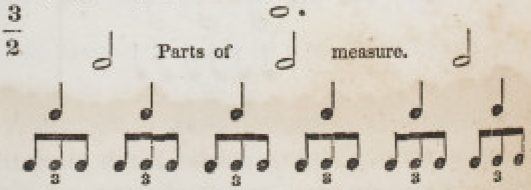
each quarter-note of the quarter trioles is farther divided into two eighths.

In fig. 14. *e.* and *f.*

(Fig. 14. *e.*)

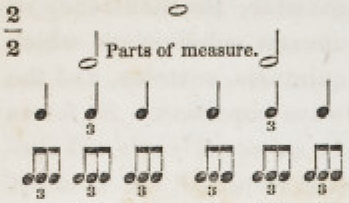


(Fig. 14. *f.*)

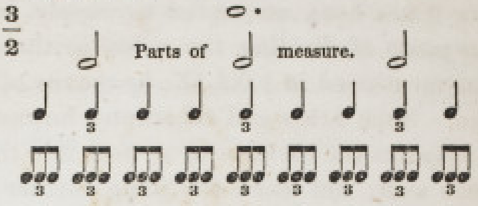


each quarter note is subdivided into an eighth-note triole; and in fig. 14 *g*. and *h*.

(Fig. 14. *g*.)



(Fig. 14. *h*.)

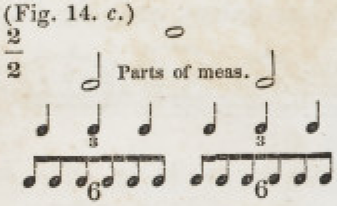


even each quarter note of the quarter trioles again separates itself into an eighth triole.

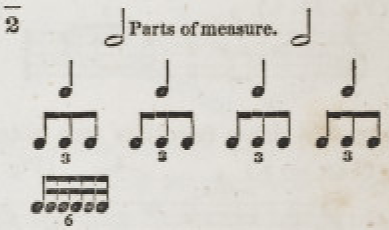
In fig. 14. *a*. on page 84, and in fig. 14. *e*. below, still farther subdivisions are exhibited, as, *e. g.* into sixteenth notes, into sixteenth-note trioles and sextoles.

The case in fig. 14. *e*. must not be confounded with that in fig. 14. *c*.

(Fig. 14. *c*.)

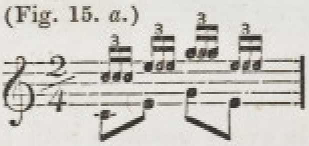


(Fig. 14. *e*.)



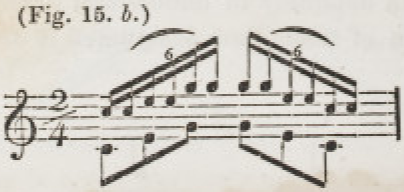
It is perceived that in both, twelve eighth-notes fill the measure; but these eighths in fig. 14. *e*. are uneven parts, thirds, of even parts, *i. e*. of the four quarters; whereas in *c*, on the contrary, the eighth-notes appear as even parts, halves, of uneven, *i. e*. of the three quarter-notes of a quarter triole. In fig. 14. *e*, the three eighth-notes make a real quarter; but in fig. 14. *c*. two eighth-notes make one of the three quarter-notes of a quarter triole. The example in fig. 15. *a*,

(Fig. 15. *a*.)



compared with that in fig. 15. *b*,

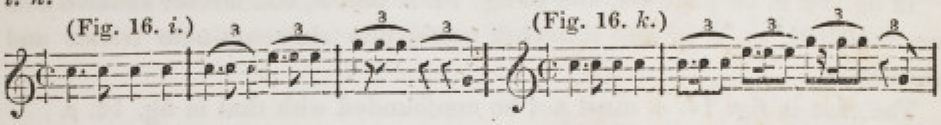
(Fig. 15. *b*.)



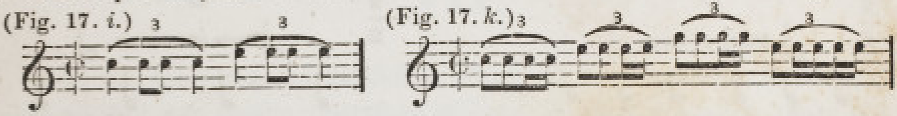
will show the difference still more conspicuously. (Comp. § LX½.) Here again there is another essential difference, depending upon the different species of *division in the accent*, to which we will again advert hereafter. (§ LXVII.)

§ LXII.

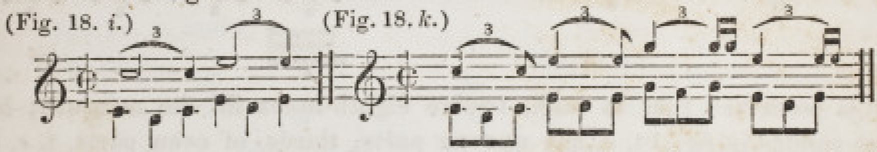
From what has been presented in § XLIX. and in §§ LX—LXI, we see how it has been attempted to supply, as far as possible, the deficiency of our mode of dividing the notes in the case of uneven subdivisions which was mentioned in § XLIX, by means of trioles, quintoles, sextoles, and the like. Such helps and substitutes however are always imperfect. So far as it respects the division of a note into three or into six *equal parts*, all operates well; but when any thing farther than this is required, the mode of designation easily becomes complicated and almost confused; as, *e. g.* when one would point a note of a triole, or would make a rest in it, as in fig. 16. *i. k.*


(Fig. 16. *i.*) (Fig. 16. *k.*)

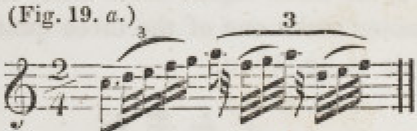
or would split *only one or two* notes of a triole into halves, as in fig. 17. *i. k.*


(Fig. 17. *i.*) (Fig. 17. *k.*)

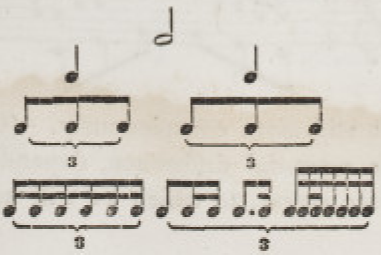
or would draw together two notes of a triole into one, as in fig. 18. *i. k.*


(Fig. 18. *i.*) (Fig. 18. *k.*)

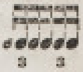
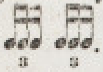
In case one would separate every note of a triole into three parts, the division would become still more complicated and entangled, as in fig. 14. *g. h* on page 85, &c. or perhaps as in fig. 19. *a.*

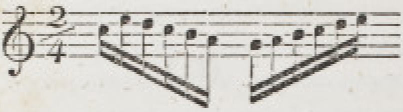

(Fig. 19. *a.*)

It fortunately happens that such complicated subdivisions only seldom occur, (only sometimes in very slow passages.) A brace or curved line (⁀‿⁀ or ⁀) subjoined in every instance with the figure 3 would at least be very servicable on the score of perspicuity, since by means of this the reader would be given definitely to understand immediately upon the first glance, that the form of notes thus designated is *originally of a three-fold division*, as *e. g.*

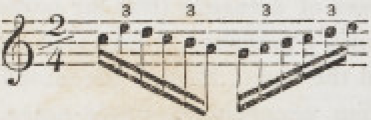
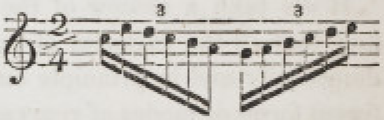


§ LXII½.

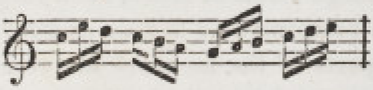
A peculiar species of indeterminateness and ambiguity to the eye of the reader sometimes arises from the fact that two small trioles, for the sake of convenience in writing, are not separated from one another but are connected together by the so called ribs or longitudinal strokes, as, *e. g.*  instead of . It is true indeed that if the figure 3 is added to each triole, as in the present instance, no ambiguity takes place; but these figures are sometimes omitted, as, *e. g.*

J 

and in such a case it remains undetermined to the eye, whether four sixteenth trioles are intended, or, which would also be a possible case, two eighth trioles subdivided into sixteenth notes, as, *e. g.*

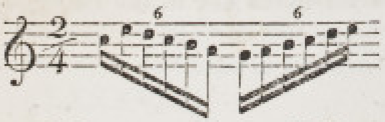
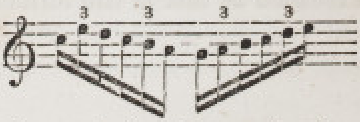
whether K  or L 

The latter is indeed the less usual, (because, as has already been observed in former sections, further divisions of triole notes but rarely occur,) and therefore, in such cases of doubt, the former meaning is always to be preferred, as being the more usual one, and accordingly the above example in fig. J is to be read as consisting of four sixteenth trioles, and thus like K and not like L. But in cases where such doubtfulness is liable to occur, it is always more certain and unequivocal never to write two trioles connected together by longitudinal strokes as in the examples J, K, or L, but rather to write each separately and by itself, as below in L L.

LL 

or, in case one chooses after all to write them connectedly, a figure 3 should always be placed over each triole, as above in K.

But instead of this perfectly clear and unequivocal manner of writing, we often find the figure 6 used in such cases instead of two 3s, as, *e. g.*

 instead of 

and such forms are then called *sextoles,* (Ital. *sestola.*) To say the least of it, this mode of writing is not so perfectly unequivocal in all cases as the latter method just mentioned, inasmuch as the figure 6 is not unfrequently employed also as the sign of a triole separated into 6 small parts, as above in fig. L, and by this means both the figure 6 and the name *sextole* are rendered equivocal.

REMARK.

I had myself, in a former edition, taken the term *sextole* in this *latter* sense as being the more usual one, namely, as a triole divided into six notes; but it is altogether more appropriate and consistent to take the name *sextole* as meaning a *pair of trioles*, and the figure 6 as their designation, (so that *e. g.* an eighth-note sextole sustains the same relation to an eighth-note triole, as $\frac{6}{8}$ measure does to $\frac{3}{8}$ measure;) whereas a triole distributed into six notes should not be named *a sextole* but *a triole* as before, and should be designated with a figure 3 and not with a 6,—both which coincide better with what is observed in the end of § LXXVII. and in the end of § LXII. Indeed this meaning is really the more usual one.

(D.)

REMARKS ON THE DIFFERENT SPECIES OF MEASURE THUS FAR PRESENTED.

§ LXIII.

If we take a review of the species of measure thus far passed over, we find that all the varieties of $\frac{2}{1}$ measure, $\frac{2}{2}$ measure, $\frac{2}{4}$ measure, &c. are fundamentally and in principle one and the same, though presented under different forms or modes of representation, according as whole-notes, half-notes, quarter-notes, &c. are chosen for the designation of the parts of the measure; and so also the different grades of uneven measure are properly only varieties of one species, only different ways of representing one and the same thing by signs.

§ LXIV.

It follows from this, that in a species of measure where the parts of measure are represented by large forms of notes, such large notes, other circumstances being alike, are performed as fast as smaller notes in those species of measure where the parts of the measure are represented by notes of a smaller form. As in $\frac{2}{2}$ measure *e. g.* the half-notes represent precisely the same thing that the quarter-notes do in $\frac{2}{4}$ measure; and quarter-notes in the former, the same as eighth-notes in the latter; eighth-notes in the former, the same as sixteenth-notes in the latter, &c;—so it appears that half-notes are executed as fast in the former, as quarter-notes are in the latter, &c.

§ LXV.

Hence it appears, finally, even a matter of indifference, which mode of writing a man chooses; every piece of music in $\frac{2}{4}$ measure might be written not only in $\frac{2}{2}$ measure, but also in $\frac{2}{1}$ measure, or $\frac{2}{8}$ measure, &c.

Thus the matter stands, considered in itself and in its relation to time; but it is conceded, that, the $\frac{2}{2}$ measure should have a somewhat different *mode* *of delivery* from the $\frac{2}{4}$ or the $\frac{2}{8}$ measure,—and that the $\frac{3}{2}$ measure also should have a mode of delivery somewhat different from that of $\frac{3}{8}$ measure; that is to say, a piece of music is in a manner delivered more lightly and softly [delicately] in proportion as it is written in the smaller notes, or, in other words, the larger is the denominator—the lower figure of the fraction; and, on the other hand, the delivery is more heavy and firm, in proportion as the species of note is greater; and thus *e. g* the manner of delivering quarter-notes in *allegro*, is different from that of delivering sixteenth-notes in *adagio*, though the latter are perhaps as quick in their movement as the former.

In *this* respect, the difference in the designations of the measure furnishes the composer with an additional means of indicating, in a certain particular, the character in which he wishes to have his composition delivered; and consequently it is not unimportant to choose the most suitable designation of the measure. The more ancient composers were so very particular on this point, that we sometimes find in their works $\frac{2}{16}$ and $\frac{3}{16}$ measure.

DIVISION IV.

MUSICAL ACCENT.

§ LXVI.

It is not *alone* the symmetry of the exactly measured *lengths* of the times, that constitutes the essential nature and the peculiar charm of the rhythmical arrangement; but our internal feeling superadds still a certain other property. That is to say, we as it were involuntarily [and instinctively] lay more stress on the first time [or part] of each smaller or larger group, than on the following time, or on the two following times [or parts]; so that a symmetrical alternation of a heavier and a lighter impulse of voice on the successive rhythmical times corresponds to the symmetrical succession of like lengths of time, which fact gives definiteness, life, and meaning to the whole performance.

The rhythmical times which in this way receive a greater or a less stress of voice, are called *heavy* and *light* times. We also use, as designations in this case, the terms *good* and *bad*, *strong* and *weak*, and indeed *long* and *short* times (derived from the intrinsically,* long and short syllables in poetic metrics),—and also in certain connections the names *down-beat* and *up-beat*. § LXXXVIII.

In our method of writing music, the bar is always placed immediately before a more heavy time, or, in other words, the measure is regarded as beginning with the heavier time or part.

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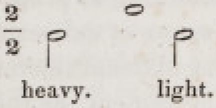
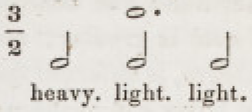
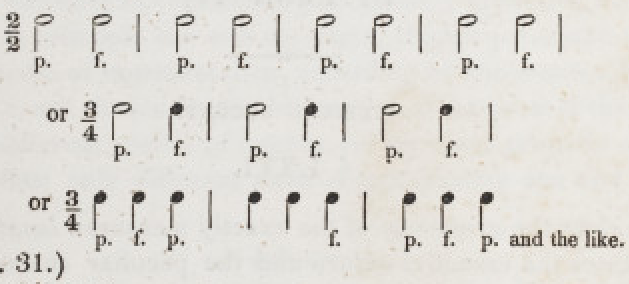
* An *intrinsically* long syllable is one that is long in itself, in contradistinction from one that is made long merely by occurring in a certain connection in poetry. The same is true of an intrinsically short syllable. TR.

Thus, in every two-part or two-fold measure, a lighter part always follows a heavier part; but in three-fold measure, *two* lighter parts follow a heavier part. So *e. g.* in $\frac{2}{2}$ measure, the first half-note is heavy, and the second light; and in $\frac{3}{2}$ measure, the first is heavy, and the second and third are light, as, *e. g.*



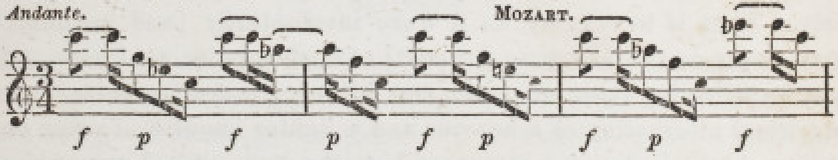


What is here said of heavy and light parts of the measure is not to be so understood as that a so called heavy or light part of the measure must really in all cases be delivered more heavily and strongly (more *forte*) than the so called light or weak part; we here speak rather of an *internal*[*] weight which our rhythmical feeling spontaneously gives to every heavy time.—Still however, so much as this is true, that a kind of shock—a revulsive sensation is produced in our feelings, if, *on the contrary, a lighter* time is rendered more prominent by *a greater external strength of tone* than a time that is internally more heavy, as, *e. g.*



(See also fig. 31.)

(Fig. 31.)



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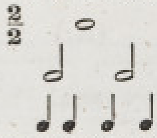
[*] The appellation *internal* is here used to signify the properties which are appropriate to a thing in itself considered, that which belongs to a thing according to its own nature, &c. Thus, an internal weight of a portion of a measure is that weight which naturally belongs to such portion of the measure, that weight which such part of the measure possesses as a property of its natural, constitutional structure, and which it always actually has, except when deprived of it by some foreign, extraneous circumstances. But sometimes such extraneous causes do deprive the accented portion of the measure of its natural and appropriate strength. Sometimes, *e. g.* the poetry which is set to music is so constructed that an unaccented portion of it falls to an accented portion of the measure, in which case the natural weight which belongs to that portion of the measure has to yield to the rhythmical structure of the poetry and consequently to lose its appropriate strength; and in this way a portion of the measure which is internally, intrinsically strong, becomes weak in the mode of delivery. Thus the appellation *internal* or *intrinsic*, as employed in this case, means the weight which is appropriate to a portion of the measure in itself considered, in contra-distinction from that which is actually given it in delivery; the latter being called *external*. TR.

§ LXVII.

As in the case of two or three parts of a measure, belonging together, the first always falls more heavily upon the ear than the second or the third; so a similar difference of internal weight or accentuation takes place also in the case of *members* of the measure and in that of the smaller subordinate parts of times and in their still more minute sub-divisions.

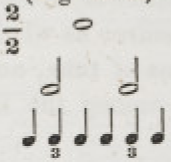
Thus *e. g.* in $\frac{2}{2}$ measure with even sub-divisions, as in fig. 13. *g.* below,

(Fig. 13. *g.*)



the first quarter note is the strongest, the third less strong, and yet stronger than the second and fourth; but in uneven sub-divisions, fig. 13. *t.*

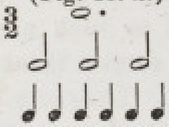
(Fig. 13. *t.*)



the first and fourth are heavier than the second and third, the fifth and the sixth.

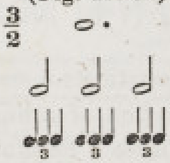
So also in $\frac{3}{2}$ measure, in even subordinate divisions, as in fig. 13. *k.*

(Fig. 13. *k.*)



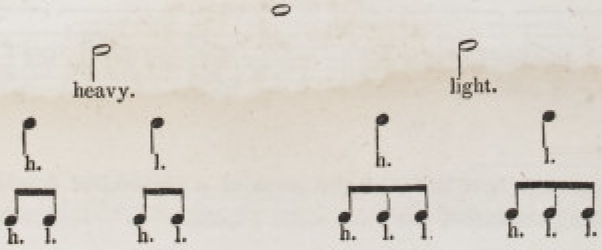
the second, fourth, and sixth quarters are lighter than the first, third, and fifth; but in uneven sub-divisions, as in fig. 13. *w.*

(Fig. 13. *w.*)



the first, fourth, and seventh are more heavy than the second and third, fifth and sixth, eighth and ninth. (Comp. § LXI. at the end.)

In like manner also the heavier portions are always distinguished from the lighter among the still more minute subordinate divisions of the times of the measure. (Comp. § LX ½. LXI. and LXII ½.)



DIVISION V.

HIGHER RHYTHM.

(A.)

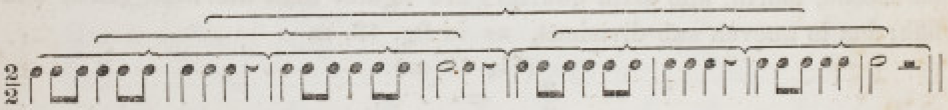
IDEA.

§ LXVIII.

Thus far we have seen how parts of measures group themselves together by pairs, or by thirds, into measures as wholes, and how they divide themselves down into smaller portions of time, and how there thus arises a symmetrical structure of members among the times of a measure, even down to the smallest sub-divisions.

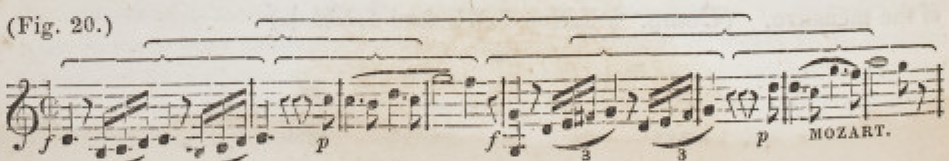
But there is still a *higher* symmetry than this. That is to say, as parts of times taken together form small groups, so also can several groups taken together be presented as parts of a larger group, of *a greater* or *a higher rhythm*,[*] of *a rhythm of a higher order*.

We may go still farther, and to such a greater rhythm we may annex moreover a second and a third, so that these two or three together constitute again a still higher rhythm. Thus *e. g.* in the following set,



two measures taken together constitute a small rhythm; two of these taken together, constitute again a rhythm of a higher species, and again two of the latter taken together, constitute a capital or principal rhythm. Such a combination is, in the language of music, about the same thing as a sense [sensus] in the language of speech, or the same as a verse, or a strophe, in metrics. See also fig. 20 to 24.

(Fig. 20.)



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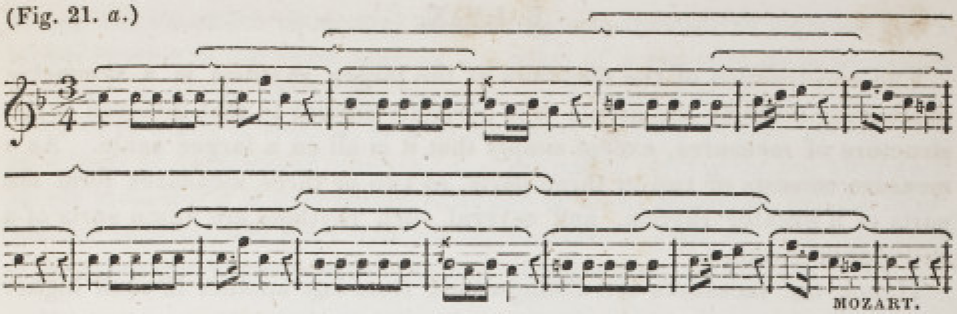
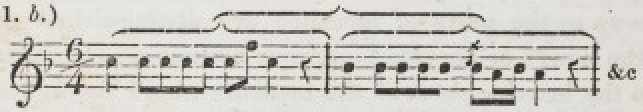
[*] The word *rhythm* is here taken in the sense of *a rhythmical combination*, a group of several smaller portions of time. Tr.

(Fig. 21. *a.*)

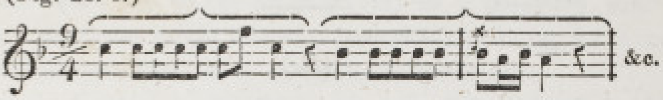


MOZART.

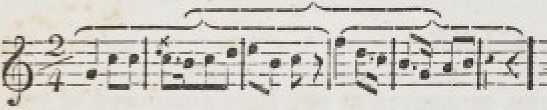
(Fig. 21. *b.*)



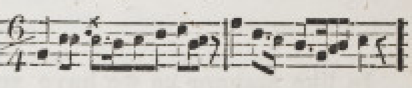
(Fig. 21. *c.*)



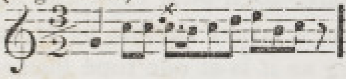
(Fig. 22. *a.*)



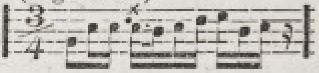
(Fig. 22. *b.*)



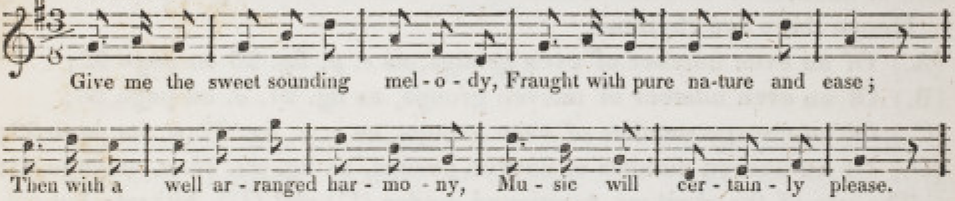
(Fig. 22. *c.*)



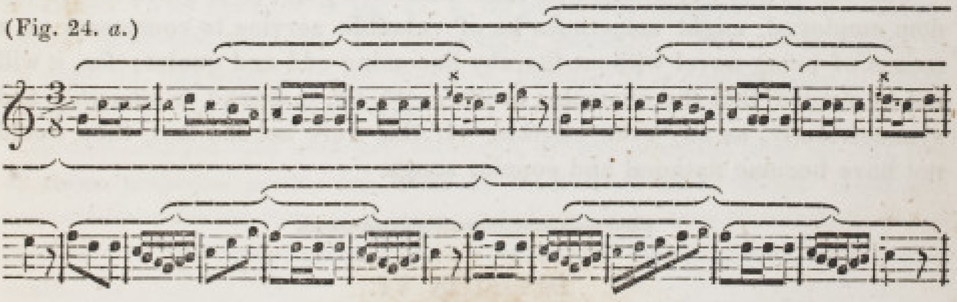
(Fig. 22. *d.*)



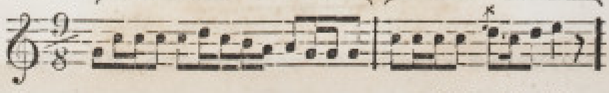
(Fig. 23.)


Give me the sweet sounding mel - o - dy, Fraught with pure na-ture and ease;
Then with a well ar - ranged har - mo - ny, Mu - sic will cer - tain - ly please.

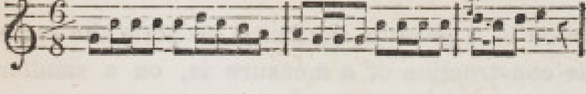
(Fig. 24. *a.*)



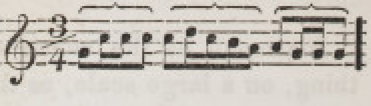
(Fig. 24. *b.*)



(Fig. 24. *c.*)



(Fig. 24. *d.*)



§ LXIX.

The construction of the members of the larger rhythms is a symmetry proceeding more by the great; it is perfectly similar to that involved in the structure of measures, except simply that it is all on a larger scale. As a measure consists of two or three parts, so two or three measures form the parts of a greater rhythm, and several such rhythms are again parts of a still higher group.

Hence the measures are distinguished from one another in such higher rhythms, in respect to their greater or less internal weight or accentuation, in the same way as the parts of measure are distinguished among themselves; *i. e.* the heavy or accented *measures* assume a prominence above the lighter, as do the heavier *parts* of the measure above the lighter.

(B.)

DIFFERENT SPECIES.

§ LXX.

In like manner as we have seen measures at one time composed of two, and at another, of three parts, and have seen both even and uneven measures produced in this way, so also can a larger rhythm be at one time even and at another uneven, just according as it is at one time formed of an even and at another of an uneven number of even or uneven groups.

Hence there are rhythms

(A.) Of an even number of even groups, as *e. g.* fig. 20 on page 92;
(B.) Of an even number of uneven groups, as fig. 21. *a.* on page 93;
(C.) Of an uneven number of even groups, as *e. g.* fig. 22. *a.* on page 93;
(D.) Of an uneven number of uneven groups, as fig. 23. 24. *a.* on page 93;

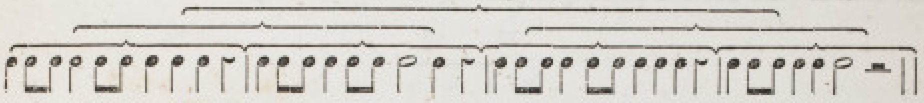
The use of the rhythms mentioned under (C) and (D), hitherto but seldom employed, might sometimes be of valuable service to composers as a means of being novel without thereby becoming odd and quaint; for, it will not be denied that the examples in 22. *a.* 23. 24. *a.* sound as smoothly and symmetrically, as any even rhythm. If this were not the fact, they would not have become national and popular songs.

DIVISION VI.

DIFFERENT SPECIES OF COMPOUNDED MEASURE.

§ LXXI.

Inasmuch as the construction of a greater rhythm is properly the same thing, on a large scale, as the construction of a measure is, on a smaller scale; and inasmuch as several measures group themselves together into a higher rhythm in the same way as the parts of a measure do in forming a measure, and thus the former becomes, as it were, a measure of a higher order or of a larger species, so it is *sometimes actually written in the form of a large or compounded measure; i. e.* instead of placing the bar after each simple measure, it is only placed after two or more measures, and the intermediate bars are left out. The set represented on page 92, *e. g.* consisting of two-measure rhythms, admits also of being written as follows:



and thus there arises by this means a $\frac{4}{2}$ species of measure. So also the minuet, written under fig. 21. *a.* on page 93, in $\frac{3}{4}$ measure, and consisting of two-measure rhythms, might likewise be written as in fig. 21. *b.* on page 93. in measures of six quarter notes, and thus in $\frac{6}{4}$ measure.

In like manner the dance, fig. 24. *a.* on page 93, written in $\frac{3}{8}$ measure, and consisting of three-measure rhythms, might also be written as consisting of large measures, as in fig. 24. *b.* on page 93, where consequently we have compounded measures consisting of nine eighth-notes—$\frac{9}{8}$ measure. Comp. also fig. 22. *a.* and *b.* on page 93.

It is to the cause here indicated, that our different species of compounded measure owe their origin. Their nature will now easily become known.

§ LXXII.

Every measure, thus compounded of 2 or 3 two-fold measures or three-fold measures, consists, as such, of at least four, or six, or nine parts of measure. The example in fig. 21. *b.* on page 93, composed of two three-part or three-fold measures, has six parts of measure. The one in fig. 24. *b.* on page 93, has nine parts of measure, because it is compounded of three three-part or three-fold measures.

Such a compounded measure, however, always contains after all only two or three *principal parts;* for, each of the two or three simple measures connected under the form of a compounded measure, now represents a *principal part* of the compounded measure, estimated or measured by a larger scale.

The same relations of accent take place in these combined or principal parts of the measure, as subsisted in the case of the simple. (§ LXVI.) That simple measure which was before the heavier one, becomes in the compound a heavier *part* of the measure, and those measures which before were light, become now light parts of measure. So also the relation of the parts of measure among themselves remains in the compound the same as before.

Accordingly, each compounded measure has more than one heavy part of the measure, but only one heavy *principal* part, and the heavy part of the heavy principal part of the measure is the heaviest of all. There are, in fig. 21. *b.* on page 93, six parts of the measure; among them there are two heavy ones (the first and fourth quarters.) But though there are six parts of measure in this example, there are still but two principal parts, of which the first is heavier than the second; and for this reason it is that the first quarter, (the first heavy principal part of the measure,) is heavier than the fourth (the second principal part of the measure.)

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§ LXXIII.

Having thus far considered the nature and properties of compounded measure in general, we pass now to the enumeration of the different species of compound measures.

Thus, in accordance with the division presented on page 94, we will consider the combinations

(A.) Of an even number of even measures,
(B.) Of an even number of uneven measures;
(C.) Of an uneven number of even measures;
(D.) Of an uneven number of uneven measures.

We shall first consider those species of compound measure which are compounded of *simple measures merely*, (*i. e.* of *two* or *three* simple measures), then

(E.) Those compound measures which are composed of other compound measures, and finally

(F.) We shall add some remarks on these different species of measure.

(A.)

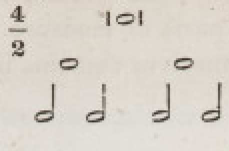
EVEN COMPOUNDS OF EVEN MEASURES.

§ LXXIV.

Two two-part or *two-fold* measures drawn into one measure by the omission of the intermediate bar, become *a four-part* or *four-fold* measure.

Two $\frac{2}{2}$ measures drawn together in this way produce the so-called *great whole* measure—$\frac{4}{2}$, where, namely, four half-notes represent the parts of the measure, as in fig. 13. *a.* below.

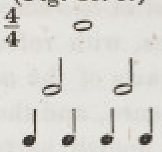
(Fig. 13. *a.*)



This species of measure is also designated by the sign of a whole circle without a stroke through it—○ or ⊙. In accordance with what was said on pages 95 and 96, the first and third parts of the measure are here the principal parts of the measure, and so of course are the heaviest parts; but, though both these are heavier than the others, still the first is the heaviest of all.

Two $\frac{2}{4}$ measures successively connected together produce the very usual four-quarter measure, fig. 13. *b*.

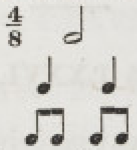
(Fig. 13. *b*.)



which is designated either by $\frac{4}{4}$, or by the sign C.

Two $\frac{2}{8}$ measures, drawn into one measure, would give a $\frac{4}{8}$ measure, fig. 13. *c;*

(Fig. 13. *c*.)



and two $\frac{2}{16}$ measure would produce a $\frac{4}{16}$ measure.

The $\frac{4}{2}$ measure is now but seldom used, and the $\frac{2}{8}$ and $\frac{2}{16}$ measure still less.

(B.)

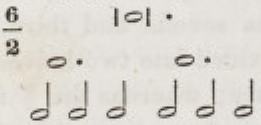
EVEN COMPOUNDS OF UNEVEN MEASURES.

§ LXXV.

Two *three-fold* or *three-parted* measures put together into one, constitute a *six-fold* or *six-parted* measure.

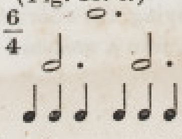
Thus, two $\frac{3}{2}$ measures drawn together, make a $\frac{6}{2}$ measure; this however is now but little used. Fig. 13. *d*.

(Fig. 13. *d*.)



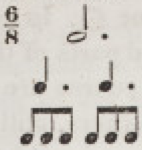
Two $\frac{3}{4}$ measures produce a $\frac{6}{4}$ measure. Fig. 13. *e*.

(Fig. 13. *e*.)



and 21. *b*. on page 93. And two $\frac{3}{8}$ measures give the well known $\frac{6}{8}$ measure, Fig. 13. *f*.

(Fig. 13. *f.*)



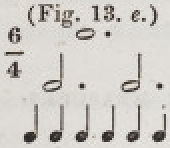
Two $\frac{3}{16}$ measures would make a $\frac{6}{16}$ measure.

Inasmuch as these species of measure, compounded as they are out of two three-fold measures, consist of *two* three-fold groups, they are always to be regarded as *even* measures, with reference to this principal two-fold division. The two principal parts of the measure are as follows: the first part of the first half of the measure, and the first part of the second half of the measure, *i. e.* the first and fourth parts of the measure; hence these two parts are the heaviest or most accented ones; the first indeed is the heaviest of all, but both are more so than any of the rest.

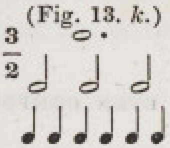
§ LXXVI.

From what has been said we may perceive how these species of measure, compounded of two three-fold measures, differ essentially from certain simple three-fold measures which they in some respects resemble. We have, *e. g.* six quarter notes in $\frac{6}{4}$ measure, just as we do in $\frac{3}{2}$ measure; (Comp. Fig. 13. *e* with fig. 13. *k:*)

(Fig. 13. *e.*)



(Fig. 13. *k.*)



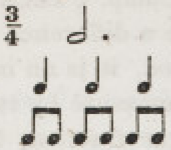
but in the former, the quarter notes are grouped by *threes,* whereas in the latter they are grouped by *twos;* in the latter, moreover, the quarter notes are *even* sub-divisions (halves) of *uneven* parts of the measure (three half notes—thirds of the measure; whereas in $\frac{6}{4}$ measure, the quarter notes are *uneven* parts (thirds) of *even* divisions or parts (two halves of the measure.) In $\frac{3}{2}$ measure, the first, third, and fifth quarter notes are heavier or more accented than the second, fourth, and sixth; but in $\frac{6}{4}$ measure, the first and fourth are heavier than the second and third, the fifth and sixth. The $\frac{6}{4}$ measure admits of being divided into two halves, each of which begins with a heavy part of the measure; whereas the $\frac{3}{2}$ measure cannot be divided into halves, without cutting in two one part in the middle.*

---

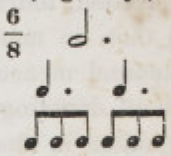
* In other words, without destroying the character of the measure and converting it into one essentially different, *i. e.* into a measure of a *double* (or sextuple) instead of a *triple* character. Tr.

Thus, the distinction between $\frac{3}{4}$ measure and $\frac{6}{8}$ measure becomes clearly apparent, as in fig. 13, *l* and *f* below;

(Fig. 13. *l.*)



(Fig. 13. *f.*)



so also that between $\frac{3}{8}$ measure and $\frac{6}{16}$ measure, or that between $\frac{3}{1}$ measure an $\frac{6}{2}$ measure, &c.

(C.)

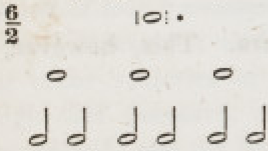
UNEVEN COMPOUNDS OF EVEN MEASURE.

§ LXXVII.

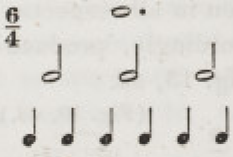
Thus far we have considered two different species of compound measure; namely, one that is produced by bringing together two two-fold measures, and another that arises from the union of two three-fold measures; in both these cases, the resulting compounds consist of two (even) general divisions and are therefore *even.* We now proceed to a consideration of *uneven* compounds.

Three two-fold measures brought together into one, now produce a *six-fold* measure; but inasmuch as it consists of THREE *principal parts,* it is uneven measure. Several varieties of this species of measure are shown in fig. 13. *aa. bb. cc.*

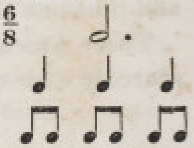
(Fig. 13. *aa.*)



(Fig. 13. *bb.*)



(Fig. 13. *cc.*)



and in fig. 22. *b.* on page 93.

These species of six-fold measure, compounded of *three two-fold* measures, are indeed similar to those mentioned in § LXXV, compounded of two three-fold measures, in the circumstance that the former, equally with the latter, consist of six parts of measure (Comp. fig. 13. *d.* on page 97, with fig. 13. *aa.* above, fig. 13. *e.* on page 97, with fig. 13. *bb.* above, fig. 13. *f.* on page 98 with fig. 13. *cc.* above, and fig. 21. *b.* on page 93, with fig. 22. *b.* on page 93;) but they are essentially diverse in the fact that a measure compounded of two three-fold measures is, in respect to its principal division, a two-fold measure; whereas the one now under consideration, formed as it is of three two-fold measures, is three-fold measure. The former consists of two groups, each containing three parts of measure; but the latter consists of three groups, of two parts each. In the former, the first and fourth parts of the measure are heavier than the second and third, the fifth and sixth; whereas in the latter, the first, third, and fifth are more heavy than the second, fourth, and sixth. (Comp. § LXXVI.)

There being then so material and so wide a difference between the two species of compound measure aforementioned, it is an infelicity, that, in the usual mode of denoting the species of measure by two figures placed one above the other in the form of a vulgar fraction, both species are marked in the same way, that is to say, the signs $\frac{6}{2}$, $\frac{6}{4}$, $\frac{6}{8}$, &c. are indiscriminately employed to designate both of these different species of six-fold measure: hence, in the case of such a designation, applying as it does to both varieties in common, it is impossible to determine which of the two is intended.

Since, however, composers are ordinarily in the habit of employing only those species of measure which are compounded of two three-fold measures, and almost never those compounded of three two-fold measures, one may pretty safely assume, so long as the practice of composers remains what it now is, that every designation whose upper figure is a 6, does not denote an uneven compound of even measures—a species of measures consisting of three two-fold measures, but a compound made up of two three-fold measures. (Comp. § LXXXII. at the end.)

(D.)

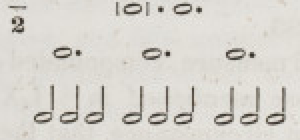
UNEVEN COMPOUNDS OF UNEVEN MEASURE.

§ LXXVIII.

Three three-fold measures, brought into one, produce a *nine-fold* measure, and thus one that is uneven in all respects.

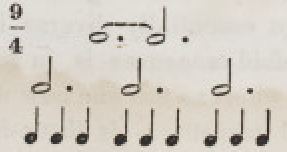
Three $\frac{3}{2}$ measures, accordingly, produce a $\frac{9}{2}$ measure. This, however, scarcely ever occurs. Fig. 13, *dd.*

(Fig. 13. *dd.*)



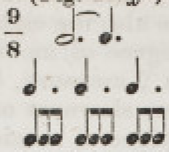
Three $\frac{3}{4}$ measures make a $\frac{9}{4}$ measure. This species of measure may very well be employed. Fig. 13, *ee.*

(Fig. 13. *ee.*)



Three $\frac{3}{8}$ measures constitute a $\frac{9}{8}$ measure,—a species of measure which occurs not unfrequently. Fig. 13, *ff.*

(Fig. 13. *ff.*)



An example may also be seen in fig. 24. *b.* on page 93.

In these species of measure, the first, fourth, and seventh parts are heavier than the second and third, fifth and sixth, eighth and ninth.

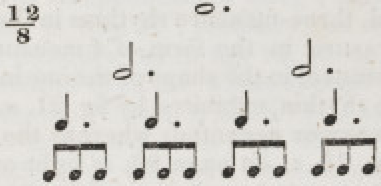
(E.)

SPECIES OF MEASURE STILL FARTHER COMPOUNDED.

§ LXXIX.

Two or three compound measures may be united into one, and in this way new species of compounds are produced.

There is however scarcely more than a single species actually in use out of this whole class, and that is the $\frac{12}{8}$ measure, compounded of two $\frac{6}{8}$ measures, (or four $\frac{3}{8}$ measures:)



It is very much more seldom that we meet with the similar $\frac{12}{4}$ measure, composed of four $\frac{3}{4}$ measures or of two $\frac{6}{4}$ measures; the $\frac{12}{2}$ measure, composed of four $\frac{3}{2}$ measures or two $\frac{6}{2}$ measures; also $\frac{12}{16}$ measure, consisting of four $\frac{3}{16}$ measures; and twelve-fold measure formed of six two-fold measures; or other varieties of compound measure still more complicated, as *e. g.* eight-fold measure, sixteen-fold, eighteen-fold, twenty-four-fold, twenty-seven-fold, and the like.

All that we have said in relation to compound measures generally, applies also to these additionally compounded measures.

(F.)

REMARKS UPON THE SEVERAL SPECIES OF COMPOUND MEASURE.

§ LXXX.

Since a compound measure is nothing else than a group of two or more simple measures, it follows, first, that the parts of a compound measure, other circumstances being the same, are to be passed over, in performing, neither faster nor slower than those of the corresponding simple measure;

as, *e. g.* the quarter notes in $\frac{4}{4}$ measure are to be performed only just as fast as they are in $\frac{2}{4}$ measure; so also the eighth-notes in $\frac{6}{8}$ measure are to be passed over with the same degree of movement as the eighth-notes in $\frac{3}{8}$ measure, or in $\frac{9}{8}$ measure, or in $\frac{12}{8}$ measure, &c. (Comp. § LXIV.)

So far, then, as quickness or slowness of movement is concerned, it is wholly immaterial, whether a piece of music be written in simple measure or in compound. It is to be observed, however, that on another point there is a difference. Custom has appropriated a different style of delivery to compound measure from that which obtains in the simple; $\frac{12}{8}$ measure, *e. g.* has a mode of delivery different from the light $\frac{3}{8}$ measure, and the like. (Comp. § LXV.)

§ LXXXI.

Moreover, it is self evident, that not every piece of music, written in simple measure, can be converted into any species of compound measure at pleasure; for, it is only compound measures of even principal divisions, that are suitable for rhythms* of even measure-numbers,† whereas, on the contrary, rhythms of uneven measure-numbers are alone appropriate to measures unevenly compounded. Hence it would evidently be very improper, *e. g.* to undertake to write rhythms composed of *two* simple measures, in the form of nine-fold measure, as *e. g.* rhythms consisting of two $\frac{3}{4}$ measures, in the form of $\frac{9}{4}$ measure, (*e. g.* fig. 21. *a.* on page 93, as at fig. 21. *c.* on page 93.)

Or, on the other hand, three-measure rhythms in the form of six-fold measure, as *e. g.* three $\frac{3}{8}$ measure in the form of $\frac{6}{8}$ measure, (the example in fig. 24. *a.* on page 93, for instance, in the shape of the one in fig. 24. *c.* on page 93.) For, in the two-measure rhythm, exhibited by fig. 21. *a.* on page 93, every first and third measure is heavy or accented, whereas the third principal part of the $\frac{9}{4}$ measure, as in fig. 21. *c.* on page 93, is light or unaccented; and so of the rest. Thus the two-measure rhythm of fig. 21. *a.* does not at all correspond to the $\frac{9}{4}$ measure, but is far more accordant with the $\frac{6}{4}$ measure found in fig. 21. *b.* on page 93. So, on the other hand, the rhythm of three $\frac{3}{8}$ measures, as in fig. 24. *a.* on page 93, may very appropriately be converted into $\frac{9}{8}$ measure, as in fig. 24. *b.* on page 93, but not into $\frac{6}{8}$ measure, as in fig. 24. *c.* on page 93.

Hence it follows also that a piece of music in which small rhythms occur which are interchangably at one time even, and at another uneven, (as *e. g.* a piece in $\frac{3}{8}$ measure with rhythms, at one time, of two measures, and, at another, of three measures,) cannot properly be written either in $\frac{6}{8}$ measure or in $\frac{9}{8}$ measure. A piece of music written in any species of compound time must, on the other hand, always have its small rhythms of only one and the same kind; and a diversified, heterogeneous alternation of, at one time, even rhythms, and, at another, uneven, is not at all admissible in this case. When, therefore, a composer selects any species of compound measure in which to write, he virtually thereby imposes upon himself the obligation to construct nothing but homogeneous rhythms, those which are entirely alike among themselves; and hence arises that peculiar rhythmical roundness, that smooth and finished neatness of movement, which usually characterizes musical pieces written in such compound measure.

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* The word "rhythms" means rhythmical forms, rhythmical combinations of notes. See §§ LXVII, LXIX, LXX. Tr.

† A measure-number is the leading number in any species of measure, as *e. g.* 2 is the measure number in all double or two-fold measure; 3, in all triple measure, &c. In other words, it is the number which shows how many parts the measure is divided into,-the upper number in the usual fractional designation of time. Tr.

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§ LXXXII.

It cannot, moreover, have escaped the attention of the reader, while passing over the treatment of the different species of measure thus far, that, in many cases, compound measure is, fundamentally and in principle, precisely the same thing as simple measure written in larger notes; the only difference being in the mode of representation, or even, as is the fact in some instances, in nothing but the name.

If *e. g.* we compare the simple $\frac{2}{2}$ measure in fig. 13. *n.* page 80, or fig. 13. *g.* page 82, with the $\frac{4}{4}$ measure in fig 13. *b.* page 97, we find the two to differ only in the simple circumstance, that, in the former, the half-notes are parts of the measure, while, in the latter, they are *the principal* parts of the measure;—and farther, that, in the former, the quarter-notes are subordinate divisions, while, in the latter, they are the principal divisions or the regular parts of the measure. Thus, the difference lies, as it were, only in idea, or in the form of writing.—In like manner, $\frac{2}{4}$ measure and $\frac{4}{8}$ measure, as in fig. 13. *h.* on page 82, and fig. 13. *c.* on page 97, resolve themselves into one and the same; so also $\frac{2}{8}$ measure and $\frac{4}{16}$ measure.

So likewise, $\frac{3}{2}$ measure, as in fig. 13. *k.* on page 82, is substantially the same thing as $\frac{6}{4}$ measure compounded of three $\frac{2}{4}$ measures as in fig. 13. *bb.* on page 99. The same is true of $\frac{3}{4}$ measure, as in fig. 13. *l* on page 82, and a corresponding $\frac{6}{8}$ measure, as in fig. 13. *cc.* on page 99.

This coincidence renders even the whole species of uneven compounds of even measures superfluous, (Comp. § LXXVIII. at the end;) since, instead of designating by $\frac{6}{4}$, as in fig. 22. *b.* on page 93, we can designate by $\frac{3}{2}$, as in fig. 22. *c.* on page 93, and, besides, we can at the same time by this means entirely avoid the equivocalness above mentioned, (§ LXXVII.) The same thing can moreover be expressed also by $\frac{3}{4}$ measure, as in fig. 22. *d.* on page 93.

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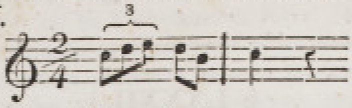
§ LXXXIII.

A similar coincidence takes place between the species of measure composed of two uneven measures and simple two-fold measure with the division into trioles; *e. g.* the $\frac{6}{4}$ measure in fig. 13. *e.* on page 98, coincides with the $\frac{2}{2}$ measure in fig. 13. *t.* on page 82; the $\frac{6}{8}$ measure in fig. 13. *f.* on page 99, with the $\frac{2}{4}$ measure in fig. 13. *u.* on page 82, and the like; and in the same way also, the uneven compounds of uneven measures coincide with uneven simple measure, as *e. g.* fig. 13. *ee.* on page 100, with fig. 13. *w.* on page 91, fig. 13. *ff.* on page 101, with fig. 13. *x.* on page 82, &c.

Meanwhile, usage has here also, on the one hand, introduced one mode of delivery for the parts of a compound measure, and another mode of delivery for the trioles. (Comp. §§ LXV. and LXXX.)

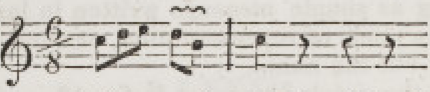
On the other hand, there is much music that admits of being written far more conveniently in $\frac{6}{8}$ measure, than in trioles of $\frac{2}{4}$ measure, and the reverse; also more easily in $\frac{9}{8}$ measure, than in trioles of $\frac{3}{4}$ measure. For, if one would write the example occurring in fig. 24. *b.* on page 93, now written in $\frac{9}{8}$ measure, in the form of trioles of $\frac{3}{4}$ measure, he must write the triplicate groups standing in the parts of the $\frac{9}{8}$ measure, in the form of trioles in the $\frac{3}{4}$ measure, as in fig. 24. *d.* on page 93, which mode of writing, as we have already remaked on page 86, is much more circumstantial and particular. If, on the contrary, we would convert the following example—J

J.



where, in the first measure, there first occurs an uneven sub-division and then an even one,—from $\frac{2}{4}$ measure into $\frac{6}{8}$ measure, we should indeed meet with no difficulty in writing the first three notes in the form of three eighth notes of a $\frac{6}{8}$ measure, as in *K.*

K.



but what, in this case, shall we do with the following two eighths? We have no method of representing them in $\frac{6}{8}$ measure; for, all that we have the means of doing, according to our present method of notation, is merely to diminish *three* notes to the value of *two* by placing a figure 3 over them, but not, on the contrary, *to extend two* notes to the duration of *three.* (This latter practice however might with propriety be introduced.)

DIVISION VII.

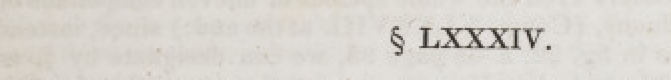
FIVE-FOLD, SEVEN-FOLD, AND OTHER SIMILAR COMBINATIONS.

§ LXXXIV.

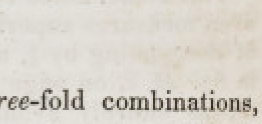
Thus far we have spoken only of *two*-fold or of *three*-fold combinations, only of *two*-fold and *three*-fold measure, or of the union of *two* or *three* such measures into four, six, eight, nine, twelve, sixteen, or eighteen-fold measure; and so also only of the subdivisions of two, three, four, six, eight, nine, twelve, sixteen, or eighteen, &c. parts of the measure, into *two*, or *three* still smaller subdivisions. That is to say, the only measure-numbers thus far treated have been simply the first primary even number 2, and the first primary uneven number 3, or such others as have arisen from the multiplication of one of these primary numbers by 2 or by 3.

Other combinations or groupings, as *e. g.* those of five or of seven parts, and the like, are far less agreeable to our ear, as may easily be seen by trying the experiment upon the examples of five-fold and seven-fold measure, found in fig. 25. *i.* to *q.* and fig. 26. *i.* to *q.*

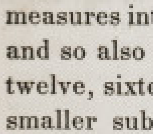
(Fig. 25. *i.*)



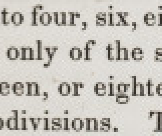
(Fig. 25. *k.*)



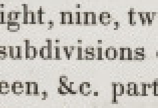
(Fig. 25. *l.*)



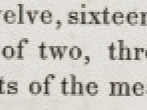
(Fig. 25. *m.*)



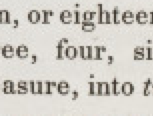
(Fig. 25. *n.*)



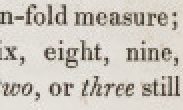
(Fig. 25. *o.*)



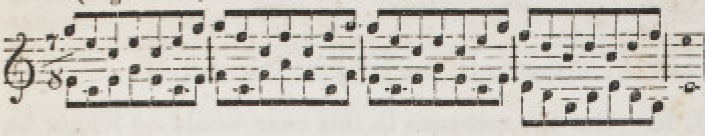
(Fig. 25. *p.*)



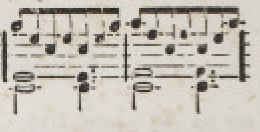
(Fig. 25. *q.*)



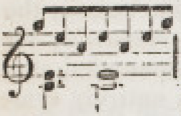
(Fig. 26. *i.*)



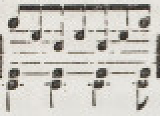
(Fig. 26. *k.*)



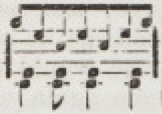
(Fig. 26. *l.*)



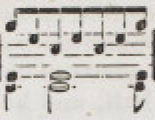
(Fig. 26. *m.*)



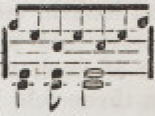
(Fig. 26. *n.*)



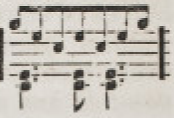
(Fig. 26. *o.*)



(Fig. 26. *p.*)



(Fig. 26. *q.*)



The origin of this fact it seems sufficiently easy to explain. In the first place, it is very natural that our rhythmical sense should not be able *easily to apprehend* groupings or combinations which do not admit of being divided and subdivided by those simplest primary numbers.

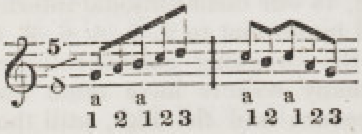
In the second place, such a rhythm has an especially halting and dragging character, arising from the fact that a grouping of this kind has too little of emphasis, that is to say, too many light parts of the measure for one that is strong. In five-fold measure, *e. g.* only the first part would be heavy, while all the following four would be light; and in seven-fold measure there would be even six light parts to one heavy one, &c. Such a scantiness of accented parts of the measure cannot be otherwise than wearisome to the ear.

If it be proposed to avoid this inconvenience by making more than one of the five or seven parts heavy or accented, and hence by considering the measure a compound one, there would arise the new evil that the measure would always in this case have the appearance of being compounded of dissimilar, heterogeneous parts, that is to say, of one even part and one uneven part; thus *e. g.* the $\frac{5}{4}$ measure would appear to be composed of a $\frac{2}{4}$ measure and of a $\frac{3}{4}$ measure. Such a union of dissimilar elements is unrythmical; for, the accentuation, in the case of five parts of the measure, can not possibly be symmetrically divided, inasmuch as it must at one time recur after the second part of the measure, and the next time after the third part.* (Comp. fig. 25. *m.* or *n.* on page 104.)

We can indeed conceive of a species of five-fold measure which would be free from the halting, limping character in question, in so far as that its halves would not be of unequal length; and that is a species of five-fold measure in which the three-fold half should, after the manner of a triole, be so abbreviated that the three parts should take only the same amount of time as the other two, and vice versa,—somewhat as in fig. 25. *r.* or *s.*

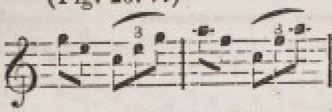
---

* *i. e.* One accent occurs after *two* counts and the next after three counts, or, in other words, one accent has *two* counts after it [*i. e.* two including the accented part as one] and the next accent has *three* counts after it, thus:

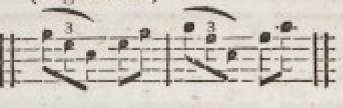


This may be read either: *accent*, one, two; *accent*, one, two, three; *accent*, one, two; *accent*, one, two, three; or: one, two,—*accent;* one, two, three,—*accent;* one, two, —*accent*, &c. Thus the accents follow one another coincidently with the alternation of the two *different* numbers 2 and 3, whereas, to make the movement symmetrical, they should follow one another coincidently with the repetition of the *same* number, *i. e.* after the same number of counts or at exactly equal intervals of time. TR.

(Fig. 25. *r*.)



(Fig. 25. *s*.)

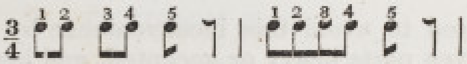


or as on page 104, J. K. But the measure in this case would no longer be properly five-fold measure, but a species of measure consisting of *two* halves of equal length, two-fold measure; and yet, even by this means, the want of symmetry and proportion would not be satisfactorily removed; for every measure of such a piece of music would still be compounded of a two-fold and a three-fold half, and hence again would not be entirely symmetrical.

How we are to regard and treat *seven-fold*, *ten-fold*, *eleven-fold*, and other similar species of measure, must be sufficiently evident already. Seven-fold measure must be compounded of two two-fold measures and one three-fold, or of two three-fold measures and one one-fold measure, or of one five-fold measure and one two-fold measure; or, otherwise, six light parts of the measure would occur successively to one heavy part. (Comp. fig. 26 on page 105.) And finally, how would a ten-fold, or an eleven-fold, thirteen-fold measure, and the like, be compounded?

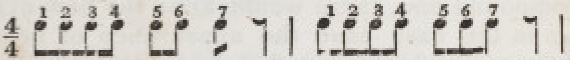
Persons are sometimes deceived in supposing that they hear a five-fold or similar species of measure, because they have counted, *one, two, three*, &c. in the following manner:

(A.)



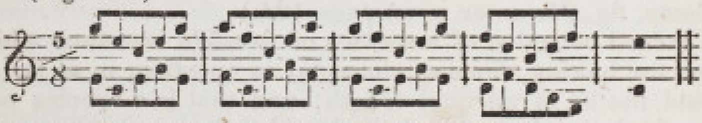
or

(B.)



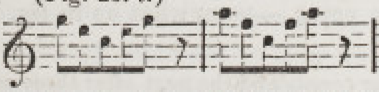
i. e. they make a momentary pause at "five" in the example (A.) and thus produce $\frac{3}{4}$ measure, of which they count five eighths aloud and pause on the sixth; and produce $\frac{4}{4}$ measure in the example (B.) by pausing (or resting) on the eighth eighth-note; or, they deliver such an example as that in fig. 25. *i*.

(Fig. 25. *i*.)

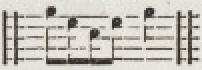


in the manner indicated in fig. 25. *t*. or in fig. 25. *u*.

(Fig. 25. *t*.)



(Fig. 25. *u*.)



or as in *r*. and *s*. above, &c. The very fact that one so involuntarily and unconsciously deceives himself on this point, shows how very natural it is to our rhythmical feeling, to our constitutional internal rhythmical sense, to reduce every rhythmical movement to 2, 3, 4, 6, 8, &c.

It is easy to see from the foregoing considerations, that, notwithstanding the vindication which many writers have often bestowed upon five-fold measure, seven-fold measure and the like, still those species of measure will never meet with general acceptance, or come into general use. Individual scraps of music only have had the appearance of use by being here and there published as curiosities, or similar pieces have been composed, merely as experiments or for the sake of singularity,* with a view merely to show that music really admits of being composed thus. Hence, it is less surprising that such species of measure, notwithstanding so many apologies in their behalf, have met with so little acceptance and have been so little introduced, than that species of measure so little admitted into music should have found so many advocates.

---

* *e. g. Boiel dieu* die Cavatine No. 10, in his *Dame blanche*, in which $\frac{5}{4}$ measure occurs composed of $\frac{3}{4}$ and $\frac{2}{4}$ measure.

§ LXXXV.

It must not be understood however from what has been said, that such five-fold, seven-fold, and other similar divisions of time, are never to be used in music.

In the first place, such a species of measure, on the very ground of its singularity, may sometimes be successfully employed for the production of some particular effect. For, even its peculiar oddness, irregularity, and strangeness find in music at one time or another their appropriate place; and hence whenever one finds it in his power to produce a particular intended effect by the use of such a species of measure, he is always at liberty to employ it.

§ LXXXVI.

Even if our rhythmical feeling is in some degree opposed to measure of this sort when taken as a *species* of measure, as *the* measure for a piece of music, still it is less disinclined to be pleased with such combinations or groupings of *the small subordinate* divisions of time; and accordingly, in the course of a piece of music, our rhythmical sense sometimes tolerates *quintoles*, *septoles*, and the like, in which, on account of the quickness of the transition over them, the unrhythmicalness of the division is almost imperceptible, (at least to the hearer, though by the player the difficulty, and I might say, unnaturalness, of such quintole or septole division is very sensibly felt.) It is indeed a short interruption or suspension of the rhythmical arrangement, while yet the piece as a whole still remains rhythmical, the only exception being that the general rhythmicalness of the piece is not continued down to these minute subdivisions; and since, as we remarked in the commencement, a piece of music may be entirely unrhythmical throughout, so it is not to be deemed an essential* fault, even if an otherwise rhythmical piece is not entirely rhythmical, down to every minute subordinate division. (§ XLVII.)

§ LXXXVII.

In like manner also as we perceived the rhythmical symmetry in such cases not to hold throughout, down to the smallest subdivisions; so we find, and especially in the longer pieces of music, that, on the other hand, such symmetry is not entirely carried through in its *upward* progression, *i. e.* in its connection with higher rhythm; for, we sometimes meet with periods of five, seven, ten, eleven, thirteen measures, and the like; so that the piece of music in this case is not arranged with rhythmical symmetry throughout its entire structure, up to the highest principal divisions.

---

* *i. e.* Not essential in the sense that such partial want of rhythmicalness *radically and entirely destroys the music*, though evidently material, as it respects the appropriate grace and beauty of music. TR.

The remark also applies here, that, inasmuch as rhythmical symmetry is not an absolute and indispensable requisite, so also the inviolate maintainance of it from the most minute subdivisions up to the highest principal divisions, is not absolutely necessary. When we shall come hereafter to treat of rhythmical designations we shall advert to this subject again. (§ XCIII.)

DIVISION VIII.

UP-BEAT, DOWN-BEAT.

§ LXXXVIII.

It is usual, in beating the time of a piece of music, to mark or signalize the commencement of every measure by *a downward* movement or beat of the hand, or of any other article that may be used for the purpose; while, on the contrary, the hand is *lifted up* at *the last* part of the measure, in order to be in a condition to move downwards again immediately afterwards, at the beginning of the following measure. In accordance with this practice it is usual to name that part of the measure in which the down-beat occurs, *the down-beat of the measure;* while, on the contrary, that part on which the up-beat takes place, is termed *the up-beat* of the measure.*

Instead of the term *up-beat*, musical writers sometimes employ the synonymous Greek word *arsis*, (from ἀιρω, *to lift up*, *to raise*, *to elevate;*) and instead of *down-beat*, they use the Greek term *thesis*, (θέσις, from the verb τίθημι, literally *to set*, *to place;* but as used in contradistinction from ἀιρω, it means, *to put* DOWN, *to place or lay down.*—TR.)

The fact that, according to Rousseau's Dictionary of Music, (article *Battre la mesure*, the beat of the measure, and article *Arsis*,) the Greeks were accustomed, on the contrary, to indicate the heavy parts of the measure by up-beats, and the light parts by down-beats, and that thus they designated the heavy parts of the measure by the term *arsis* and the light parts by the word *thesis*,—and moreover that a Scarlatti was in the habit of beating time in this way,—is to be reckoned among the less practical matters of antiquity.

In contradistinction from the first and last parts of the measure which are designated by the down and the up-beats, each part of the measure which may lie between the first and the last, and which hence is usually marked by a motion of the hand or of the beating-rod towards the right or the left side, may be named *a side-beat*.

---

* *q. d.* The down-beat *part* of the measure, and the up-beat *part* of the measure. TR.

Though the term *up-beat* always denotes a last and consequently a light part of the measure, still that term is by no means synonymous with the expression *light part of the measure;* for, while it is true that every up-beat is a light part of the measure, it is not true that every light part of the measure is an up-beat. Inasmuch as in every species of measure which has more than two parts, consequently in every three-fold measure as well as in all varieties of compound measure, there are *several* light parts, of which, only the *last* is denoted by the up-beat; so it follows, that not every light part of the measure is an up-beat, but is often also a side-beat.

It is not uncommon, however, to find the term up-beat improperly applied to designate such parts of the measure, as *e. g.* the second or third quarter of the $\frac{4}{4}$ measure, the second quarter of the $\frac{3}{4}$ measure, the fourth eighth of $\frac{6}{8}$ measure, and the like.

The fact that the term *up-beat* is also often improperly employed in still *other* applications, is adverted to on page 111.

DIVISION IX.

MUSICAL SOUNDS CONSIDERED IN CONNECTION WITH RHYTHM.

(A.)

RHYTHMICAL DELINEATION OF A MUSICAL PIECE.

§ LXXXIX.

The divisions of the measure, together with all the other greater and smaller distinctions in rhythmical measurement, as we have thus far attended to them, are properly the mere dry frame-work, that is to say, *merely the measure* of rhythmical structures, but by no means those structures themselves; in the same way as the yard, foot, inch, and line-measure, and the proportions according to which an architectural work is measured, or the pattern or dimensions according to which a pillar is measured, are not the structure or the pillar itself. In other words, we have thus far directed our attention to the rhythmical measure *merely as measure;* whereas we will now apply it more immediately to the object to be measured, *i. e.* to the rhythmical musical pieces themselves.

We apply the term *figure*, *phrase*, *set*, or *passage*, to every greater or smaller group of musical sounds which by means of its rhythmical formation or structure impresses itself upon our perception as a greater or a smaller whole. Thus *e. g.* the first nine notes on page 92, are perceived as constituting together a figure or rhythmical form, and hence are called *a set*, though indeed only a short and subordinate one; and this set, moreover, taken in connection with the small similar group of the following eight notes, which stands next to it and forms a sort of counterpart to it, constitutes a phrase or period of a higher order, a figure or rhythmical form on a larger scale, &c. One accordingly finds in fig. 21. *a.* on page 93, eight small phrases, each consisting of two measures; in fig. 22. *a.* on page 93, two such phrases, each consisting of three measures; and other similar examples in fig. 23. *a.* on page 93, and fig. 24. *a.* on page 93.

§ XC.

On this branch of the subject we remark, in the first place, that the rhythmical arrangement or structure of a set by no means implies that all the sounds contained in it should be of equal length, but only that they should be measurable by one and the same scale and ratio—that they should be adjusted throughout to a uniform admeasurement. In other words, a passage, in order to be rhythmical, by no means requires to be constituted exclusively of eighth-notes, or of quarter-notes, &c.,--that is to say, entirely of one kind of notes; such an arrangement, on the contrary, would be attended with the most tedious uniformity, and instead of it we are at liberty to employ at one time whole notes; at another, quarters, eighths, sixteenths and the like; and again the same notes pointed, trioles, &c.; while yet the rhythmical uniformity or equality of admeasurement still continues steadily the same, consisting in the fact that all these notes of different lengths stand in such a proportional relation to one another as to coincide with the rhythmical divisions marked by the primary or principal number 2 or 3, and hence are measurable by one and the same scale, are all adjusted to one and the same plan of admeasurement.*

§ XCI.

Again, it is unnecessary that a set or phrase should begin precisely with the commencement of a measure, and close with the end of a measure, in such a manner that the limits of the rhythmical form or structure shall exactly coincide with the dividing points of the measure, *i. e.* with the bars.

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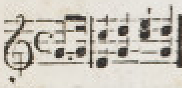
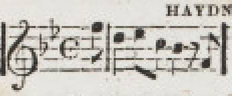
* The idea here may be expressed thus: Long and short notes may be used, mixed up together, consistently with the entire preservation of the rhythm; it being necessary only to give to each note, in delivery, that exact proportional length of time which is demanded by the comparative length of the note; or, reversing the order of the proposition, it stands thus: just in proportion as notes, in any part of the musical piece, are performed quicker than others, there must be more of them used; and, vice versa, just in proportion as any notes are performed more slowly than others, there must be fewer of them used. In this way the rhythmical movement is kept perfectly uniform, the leading rhythmical divisions of the piece, such as the two-fold or three-fold divisions, are exactly coincided with; and thus the regular, uniform duplicate or triplicate character of the movement is throughout perfectly preserved. TR.

On the other hand, phrases very frequently occur whose point of commencement is in the middle of a measure, or somewhat before or after the middle; and the same is true of the terminating point. Hence we find a multitude of periods, alike in the beginning and in the course of a piece of music, which commence with one or more light (unaccented) notes, as *e. g.* in fig. 27 to 30. *i.*

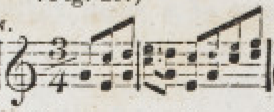
(Fig. 27.)



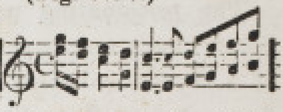
(Fig. 28.)



(Fig. 29.)



(Fig. 30. *i.*)



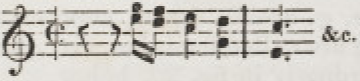
The commencement of a period with a heavy (accented) note is just as little necessary as that the first syllable in every word should be an accented syllable, or that the first word in a rhetorical sentence should be the most emphatic, or the first syllable a heavy, or so called long, accented syllable. A period commencing with a light part of the measure, may be compared to a verse of poetry beginning with an iambic or an anapestic foot, in the same way as a rhythmical commencement with a down-beat corresponds to a trochaic verse.

In ordinary speech it is usual to say of every piece of music which does not begin with the down-beat, that it commences on *the up-beat*, and hence to denominate all that precedes the first down-beat, *the up-beat* of the piece. In accordance with this mode of expression, the first notes in the above mentioned examples, fig. 27. to 30. *i.* above, would be termed the up-beat.

Such a mode of expression is obviously appropriate only in cases where the piece commences precisely with the up-beat, that is, with the last part of the measure, as in fig. 27, above, but not in such cases as those in fig. 28, 29, 30. *i.* above, where the so called up-beat includes more or less than the last part of the measure.

In conclusion, I will farther observe, that commencements of this kind, as in fig. 30. *i.* above, where the so-called up-beat amounts to more than a half-measure, are more usually written as in fig. 30. *k.* below,

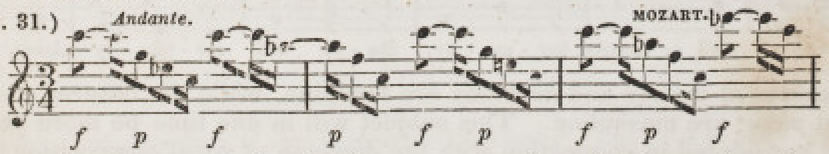
(Fig. 30. *k.*)



in which form they again appear in some measure as beginning on the down-beat.

The end of a set or passage may likewise fall, at one time, on a heavy, and, at another, on a light part of the measure: fig. 22, 23, 24, on page 93. In fig. 31, below,

(Fig. 31.)



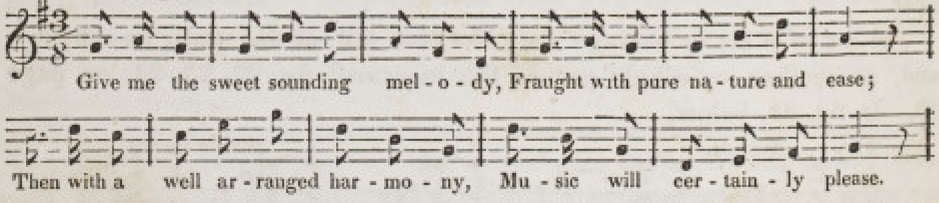
each of the different rhythmical forms or structures begins and ends on different parts of the measure, *i. e.* begins on one part of the measure and ends on a different part of the measure. The first commences with the commencement of the measure and terminates with the second part of the measure; the second begins with the third part of the measure, and ends with the first part of the following measure; the third commences with the second part of the measure, and closes with the third.

§ XCII.

The terminating point of a small rhythmical form or structure, or the point where one period ends and a new one begins, or, in general, the end of a rhythmical form which is immediately followed by another rhythmical form, is usually called *a cesura*.* It is substantially the same thing as a pause or stop in language. At the end of the second measure on page 92, *e. g.* one naturally feels inclined to a pause which corresponds to a comma; and the end of the set, taken in this view, might be called a pause or stop. In fig. 21. *a.* on page 93, one recognizes a censura at the end of the second, fourth, and sixth measures; and equally perceptible are the interpunction points (pauses, stops, cesuras) in fig. 22, 23, 24, on page 93. In fig. 31, on page 111, a cesura occurs after the second part of the measure, another after the first part of the second measure, a third at the end of the second measure, and a fourth cesura after the second part of the third measure, &c.

According as the terminating point of a rhythmical form falls on a heavy or on a light division of the time, on an accented or on an unaccented part of the measure, it is usual to denominate the cesura *a masculine* (strong), or *a feminine* (weak), *cesura*. *I. e.* when the measure or part of the measure on which the last note of a rhythmical form falls is heavier than the foregoing, the cesura is called masculine, whereas in the reverse case it is called feminine. The first, second, and third cesuras in fig. 21. on page 93, are feminine, the fourth is masculine. These appellations are borrowed from poetic metrics. That is to say, in the doctrine of the construction of verses in poetry, a verse is termed a masculine one when it ends with a word whose last syllable is an accented syllable, *i. e.* more heavy than the preceding syllable or syllables, as *e. g.* cre*ate*, de*test*, counter*mand*, &c; while terminations like the following are called feminine, viz. *glad*ly, *song*ster, un*chang*ing, *joy*fully, &c. Accordingly in fig. 23. below,

(Fig. 23.)


Give me the sweet sounding mel - o - dy, Fraught with pure na - ture and ease;
Then with a well ar - ranged har - mo - ny, Mu - sic will cer - tain - ly please.

the cesuras at *mel*ody and *har*mony are feminine, while the cesuras at *ease* and at *please* are masculine. This subject will in due time be more particularly considered in connection with the doctrine of vocal composition.

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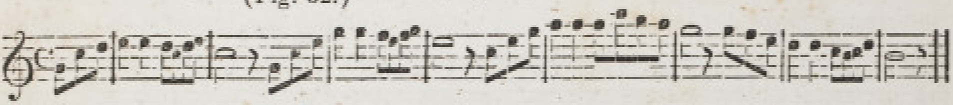
* The literal meaning of this word (from the Latin *caesura*) is *a cutting*, *a gash*, *an incision,—a cutting in two*, *a cutting in sunder;* and such, it will be perceived, is its meaning in the present case: it is a gash or incision which divides what is in other respects a rhythmical whole, into two parts. Tr.

§ XCIII.

Musical sets or passages are usually composed of a rhythmically round number of parts, *i. e.* parts which are ultimately reducible to one of the primary or principal numbers 2 or 3. Such a rhythmical equalization of parts, such a rounding and evening of the rhythmical movement, introduces into the rhythmical structure of the set a peculiar arragement, in consequence of which it (*i. e.* the rhythmical structure or character) becomes especially capable of making a definite and distinct impression upon our feelings, and of being clearly and intelligibly apprehended by the mind.*

The farther, therefore, the rhythmical symmetry in a set is carried, the more round, smooth, and intelligible it becomes. Since however every work of art becomes, by an excess of symmetrical uniformity, invested with an undue and trivial sameness, as *e. g.* fig. 32.

(Fig. 32.)



so it is practiced in the longer pieces of music, not to employ a continued succession of such perfectly rounded symmetrical phrases, but to introduce sometimes also periods of somewhat less easy comprehension. (Comp. page 101.)

(B.)

INDIVIDUAL MUSICAL SOUNDS CONSIDERED IN RELATION TO RHYTHM.

(1.)

RHYTHMICAL DISPLACEMENT OR INVERSION.

§ XCIV.

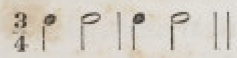
In addition to what has already been observed of the rhythmical delineation and arrangement of a musical structure or form, there still remain some things which are worthy of remark in respect to certain particular modes of placing a note in the rhythmical arrangement.

The first case of this kind which we will consider, is that which is usually termed *a rhythmical inversion* or *displacement;* namely, where, in an uneven division of time, an internally light note follows a heavy part of the measure, which light note has a longer duration than the foregoing internally heavy portion of the measure; in other words, where the lighter note, following a rhythmically heavy portion of the measure, is continued longer in one whole uninterrupted sound, and consequently is of a longer duration or value, than that internally heavy portion of the measure; or, otherwise expressed, where a note, occurring on a light portion of the measure, is held out beyond the duration of this portion of the measure and is continued on through the time of the following equally light portion of the measure, and, in consequence of such a prolongation by means of such a connection of two light portions of the measure, is rendered longer in duration than the heavy portion of the measure preceding it: *e. g.*

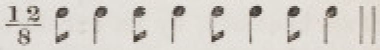
---

* This idea may be illustrated thus: Let a motley jumble of buildings be presented to us, without any uniform order or method in their arrangement; and how confused, indistinct, and imperfect is the impression they make! But let that same group of buildings be all methodically arranged in regular rows of two in each row, or three in each row, and then how perfectly clear, distinct, and impressive is the image they communicate to our mind,—how perfectly easy it now is to obtain a definite and intelligible conception of them! So it is, that the regular, measured equalization of parts in the rhythmical structure of a tune in accordance with certain round numbers, conduces to the clearness, intelligibleness, impressiveness of music. Tr.

(A.)

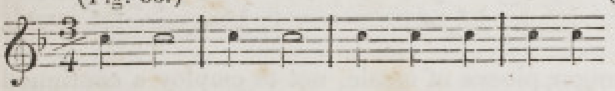


(B.)

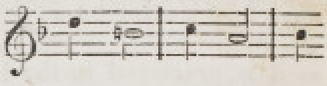


Several examples of this kind are contained in the following fig. 33—37.

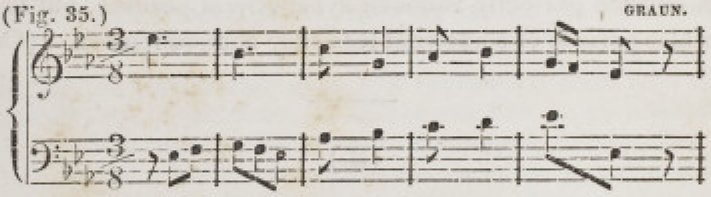
(Fig. 33.)



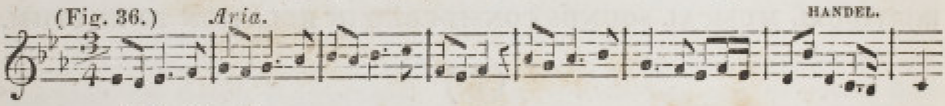
(Fig. 34.)



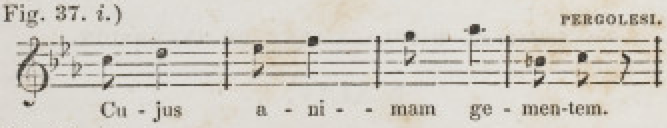
(Fig. 35.)



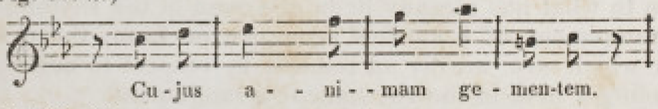
(Fig. 36.)



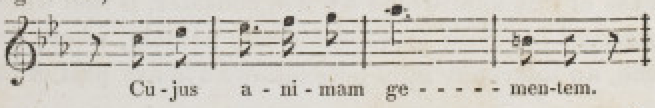
(Fig. 37. *i.*)



(Fig. 37. *k.*)



(Fig. 37. *l.*)



It is easy to perceive that inversions of this character take place *only in the case of uneven divisions of time*, *i. e.* where two light portions of the measure follow one another in immediate succession. The case of an even division of time, where a heavy portion of the measure always immediately follows a light one, as *e. g.* $\frac{4}{4}$ ♩ 𝅗𝅥 ♩ ||, and where a combination of a light portion of the measure with a following heavy portion takes place, belongs to another and different species, which we shall soon treat under the name *syncope*.

§ XCV.

In the case of such inversions, the note which is lighter in respect to accent, though longer in duration, obtains, in virtue of this its longer duration, as it were a superiority, a preponderance over the internally heavier portion of the measure which is shorter in duration; in comparison with the internally heavier portion of the measure, it, so to speak, becomes especially favored and exalted, and the regular symmetry of the rhythm is thereby in a manner reversed, displaced, or inverted; and hence, this mode of construction is called rhythmical *displacement* or *inversion.*

But while it is true that our rhythmical sense always experiences a kind of shock in the case of such an unnatural emphasis and stress upon the internally light portion of the measure, a kind of violent thrusting out of the regular beaten track of the rhythmical arrangement, a distortion of the predominant rhythmical symmetry; yet, after all, this peculiar species of sensation,—this hobbling, justling, jolting in the regular rhythmical movement, —even this very peculiarity, may sometimes, when introduced in its proper place and with due circumspection, be employed with decided advantage.

The question whether, in the example fig. 37. *i.* on page 114, quoted from Pergolesi's *Stabat mater*, the inversion, employed, as it would seem, for the purpose of representing the sobs of the weeping mother, occurs in the right place, was made in former times the subject of a very important controversy among the musical literati.*—Had I been called upon to represent the idea of weeping and sighing (*gemere,*) I should, with all due deference, have written the inversion as in fig. 37. *k.* on page 114, limited to the first syllable of "*gementem,*" if not rather even as in fig. 37. *l.* on page 114, inasmuch as, according to prosody, this syllable has the diastole and the stress, whereas the second of "*cujus*" or of "*animam*" has not. This subject, moreover, does not belong in the present place, but pertains to the doctrine of prosody, scansion, accentuation, and declamation.

Our esteemed forefathers were extremely fond of such rhythmical inversions, and it would seem that they could not hear enough of them. *Kirnberger* recommends such examples as those in fig. 36. † on page 114, as models of the most beautiful airs and of good and correct expression in vocal music,–as patterns for imitation. ‡

(2.)

SYNCOPE.

§ XCVI.

One rhythmical position of a note, especially worthy of remark, is that which we term *syncope.* When, namely, a musical sound commences with a light part of the measure or with a light sub-division of a part of the measure, and continues on without interruption through the following heavier portion of the measure, so that the last half of this note falls on a heavier portion of the measure than the first half, as in the following example, —we call this sound a *syncopated one*, an instance of *syncope.*

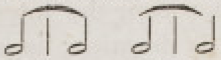
---

* See *e. g. Sulzer's Theorie,* Art. Verrückung, und Leipz. allgem. musik. Zeitung, II, S. 257 flgg.

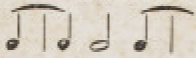
† An air on the text: "*Benche mi sprezzi l'idolo ch'adoro.*"

‡ Siehe s. Kunst d r. Satzes, I, S. 223 flgg.

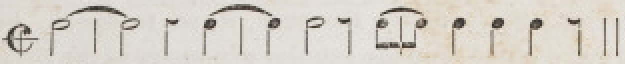
(*J.*)



(*K.*)

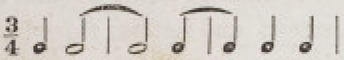


(*L.*)

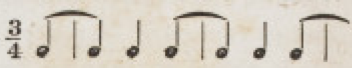


&c.

(*M.*)

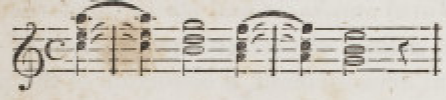


(*N.*)

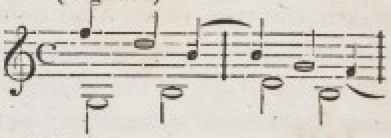


(Compare also fig. 38—44, below.)

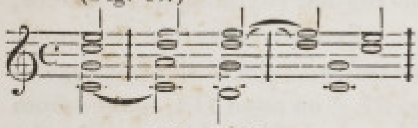
(Fig. 38.)



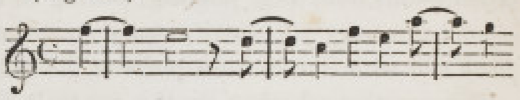
(Fig. 39.)



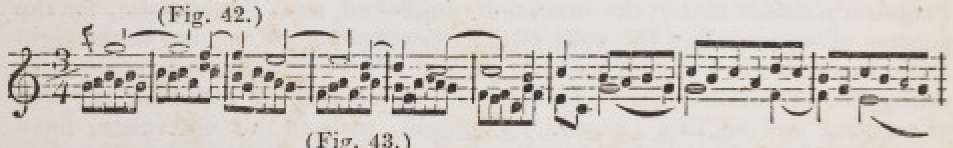
(Fig. 40.)



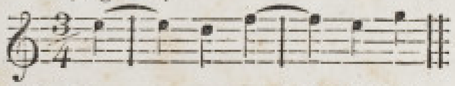
(Fig. 41.)



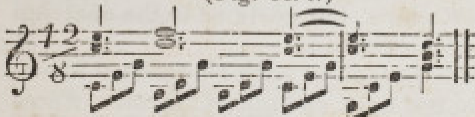
(Fig. 42.)



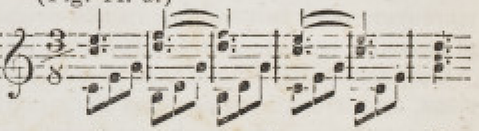
(Fig. 43.)



(Fig. 44. *t.*)



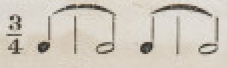
(Fig. 44. *u.*)



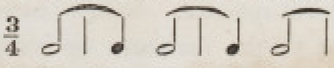
In a case of syncope, therefore, there are always two parts, or two smaller divisions of the measure, concerned, which, if alike in respect to length, are still different in respect to weight or accent, the first being light and the second heavy, and the two being united by the prolonged continuance of one steady sound; or, if it be preferred so to represent the matter, a continuous sound is as it were cut or divided into two halves, or in general into two parts, (and hence the name *syncope* from Συγκοπή *a cutting in two*, or *cutting in pieces*,) by the entrance of a heavier portion of the measure during the time of its performance (*i. e.* in the middle of its duration.)

In the examples of syncope thus far presented, the two parts of the measure connected together were all of equal length; but the following forms also,

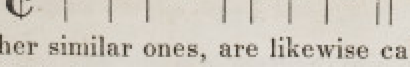
(O.)



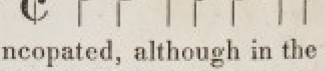
(P.)



(Q.)

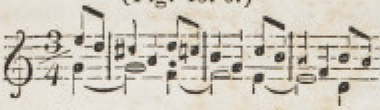


(R.)

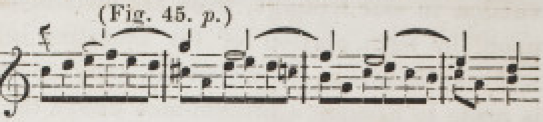


and other similar ones, are likewise called syncopated, although in the example (O.) the part of the syncopated sound falling on the light portion of the measure is only half as long as the second and heavy part; while in the example (P.), on the other hand, the light portion of the note is twice as long as the heavy portion, &c. (Comp. also fig. 45—47. below:)

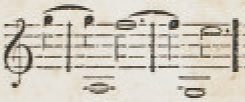
(Fig. 45. *o.*)



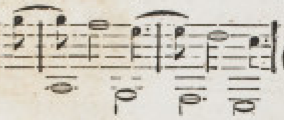
(Fig. 45. *p.*)



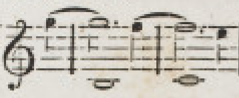
(Fig. 46. *q.*)



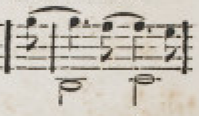
(Fig. 46. *r.*)



(Fig. 47. *i.*)



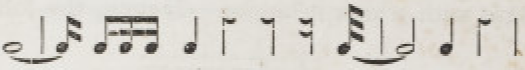
(Fig. 47. *k.*)



These latter cases may be called *unlike syncopes,* while the former may be termed *like syncopes.*

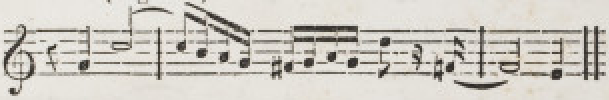
The following and other similar instances of syncope are still more unlike than those that have been mentioned, and indeed they can scarcely be entitled to the name.

(*S.*)



(Compare fig. 48, below.)

(Fig. 48.)

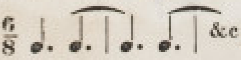


§ XCVII.

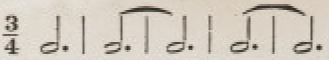
On the point in question, three-fold measure or uneven sub-divisions of members or parts of the measure are attended with the peculiarity, that the triple groups of the portions or parts of measure which occur in this case, do not admit of *an unbroken* series of *like* syncopes connected together. For, inasmuch, as the number 3 does not admit of division into equal halves, it follows that either two of these third parts of the measure always fall to the heavy side of the syncope and only one to the light, as above in O. page 116; or, vice versa, two parts fall to the light and only *one* to the heavy as in the example P. page 116, (fig. 45. *o* and *p.* above,) or, if it be determined to have like syncopes, there must always be an unsyncopated member left in a disconnected state between the syncopated groups, as on page 116, example N. (Comp. fig. 43. on page 116.)

Smaller or larger three-fold groups may, however, be regarded as unities and may thus be connected into like syncopes by pairs, as in the following examples, T and U; or the even sub-divisions of the measure may be syncopated, as in V and W.

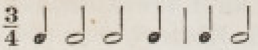
(T.)



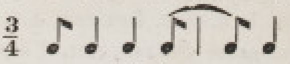
(U.)



(V.)



(W.)



(Compare fig. 44. *t*, *u*,—also fig. 42. on page 116.)

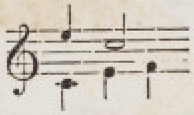
§ XCVIII.

Syncope, like rhythmical inversion, produces a species of shock or revulsion in our feelings, from the circumstance that the stress of voice falls upon the light portion of the measure involved in the syncopated form, whereas *no* stress occurs on the heavy portion; by this means the former is made to assume a prominence above the latter.

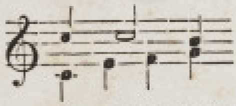
A particular application of syncope takes place in the doctrine of preparatory ligatures or ties. Theory, § 111, 114, 421, 427.

§ XCIX.

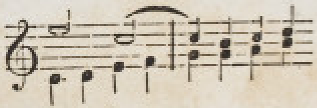
Syncope differs from the rhythmical *inversion* mentioned in former sections, in the circumstance that the merely inverted sound does not, as does the syncopated one, continue on over a portion of the measure which is heavier than that with which it began. Hence, the following set



contains a rhythmical inversion, but no syncope; whereas, in the following sets,



or

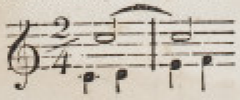


syncopes occur; because in both, in the last no less really than in the first, the portion of the measure with which the syncopated sound commences is lighter than the following one, the latter being in both cases a comparatively heavy portion.

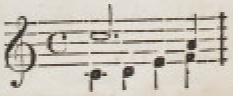
It may be still farther observed that some musical writers include the idea of syncope under the term *rhythmical inversion*.[*]

REMARK.

We also find the idea of rhythmical inversion and syncope defined in the following manner, to wit: "Syncope consists in the fact that a musical sound is cut in two." This intersection (cutting in two) is done as follows: the sound is continued on from a weak portion of the measure into or over a strong portion, and this may happen either when the sound begins with the weak portion of the measure or when it has already commenced on some previous portion of the measure. (In this case the c̄ in the following example would be syncopated:



or



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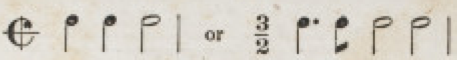
[*] *E. g. Koch* in s. mus. Lexicon, Art. *Rückung*, wo er, abweichend von seinem sonstigen Gewährsmanne *Sulzer*, Art. *Verrückung*, *die Worte Synkope* und *Rückung*, für gleichbedentend ausgiebt.

for, it continues on from the light second part or division of the measure over into the heavier third part.) "But a rhythmical inversion consists in the fact that a sound commences with a weak or light portion of the measure, which [sound] is longer than that connected with the next preceding strong portion of the measure, whether a strong portion of the measure come in during the time of this sound, and thus a syncope arise, or otherwise." (Now, to say nothing of other results, it would follow, that in the examples



the half-note commencing with the second part of the measure must be a case of rhythmical inversion, because this half-note commencing with the lighter, second half of the measure, is longer than the quarter note which occurs in connection with the next preceding heavier portion of the measure.)

And besides the essence of syncope, in accordance with the views of the subject presented in § XCVI, in nowise consists in every union of the parts of a measure into one sound.

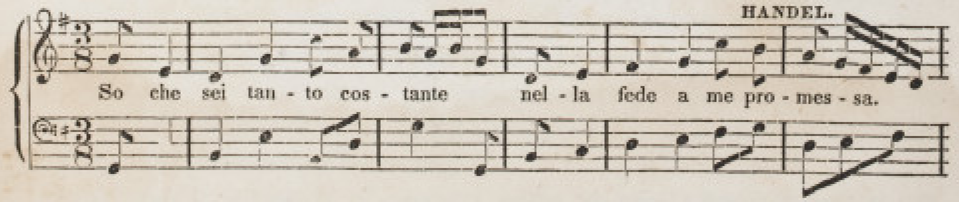
DIVISION X.

INTERRUPTIONS OF RHYTHMICAL UNIFORMITY.

§ C.

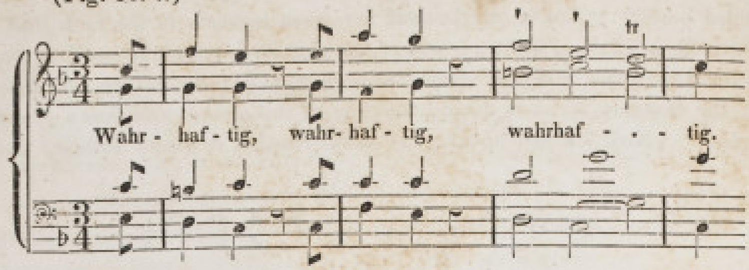
There are, as we observed on page 69, not only pieces of music in which there is no rhythm at all, but there are also cases in which, in pieces which are otherwise rhythmical, the requisite expression sometimes renders it necessary, or at least desirable, in particular places, to disturb in some measure the regular course of the rhythm. The movement, in such cases, is either *accelerated*, (*accelerando, stringendo, più moto,)* or *retarded*, (*ritardando, Rilasciando, più adagio*, and the like,)—or one suddenly makes a *pause* (*fermata*,) and continues it at pleasure; or the regular movement is in some instances *wholly destroyed*, (*senza tempo*, or in *colla parte*.) Under this head, moreover, belongs a practice, considerably usual in former times, namely, that of suddenly inserting in the middle of a piece of music a single measure which is twice as large as the rest; as, *e. g. Handel* in his opera of *Tamerlane*, fig. 49. below,

(Fig. 49.)


HANDEL.
So che sei tan - to cos - tante nel - la fede a me pro - mes - sa.

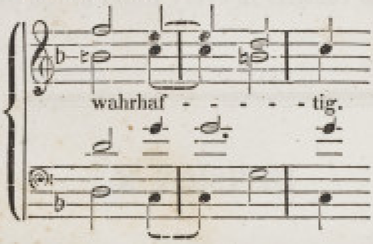
and *Graun*, in his *Death of Jesus*, fig. 50. *i.* on the following page.

(Fig. 50. *i.*)



Niceties of this character are held in less esteem at the present period, or are written in a less strange and singular form, than they formerly were, *e. g.* as in fig. 50. *i.* above, rather than as in fig. 50. *k.* below.

(Fig. 50. *k.*)



Moreover, the cases mentioned above in § LXXXV–LXXXVII, also belong in this class.

The so called *recitative*, in particular, forms as it were, an intermediate species, between rhythmical and unrhythmical music; since, in this case, the duration of the syllables and tones is but indefinitely and loosely indicated by the value of the notes, and it is left to the performer to increase or diminish, *in some measure*, according to his own feeling and choice,—a liberty however which is almost uniformly misused and which is most irrationally construed into the idea that the different values of notes in recitative *have really no meaning at all!*

THEORY OF MUSICAL COMPOSITION.

CHAPTER I.

SINGLE SERIES OR SUCCESSIONS OF TONES, CONSIDERED AS SUCH.

DIVISION I.

VOICES OR PARTS.

(A.)

IDEA OF VOICES AND OF MELODIC PROGRESSION.

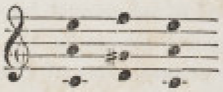
§1.

Having now acquired a knowledge of the elements which the musical art employs as materials with which to operate, we pass to a more particular and direct consideration of the manner in which these elements are combined together and constructed into a musical composition.

The musical art connects the various tones into a musical composition, in two different ways: first, in such a manner as to let us hear them *following one another successively;* and, secondly, in such a way as to let us hear two or more of them *sounding at the same time.*

A series of tones following one another, or, in other words, a successive combination of tones, we denominate in general *a musical series, a series or succession of tones, a tone-series.* In so far as it is constructed conformably to the principles of art, *i. e.* in so far as it has a musical sense, it is called *a melody;* and in so far as a person is conceived of who sings such a series of tones, or an instrument is had in view on which it is played, it is called *a voice.*

In the following set



there are three distinct series of tones: the series of the upper tones, $\bar{\bar{e}}$, $\bar{\bar{f}}$, $\bar{\bar{c}}$, that of the middle tones, $\bar{a}$, $\bar{g}\sharp$, $\bar{a}$, and that of the lower or base tones, $\bar{c}$, $\bar{d}$, $\bar{c}$. Now we can imagine to ourselves three persons, of whom one performs successively the tones $\bar{\bar{e}}$, $\bar{\bar{f}}$, $\bar{\bar{e}}$, while a second performs in like manner the tones, $\bar{a}$, $\bar{g}\sharp$, $\bar{a}$, and the third the tones $\bar{c}$, $\bar{d}$, $\bar{c}$. (The fact that there are instruments on which one person can perform several tones at the same time, and thus can carry along several voices or parts together, does not here come under consideration.)

Every united sounding of several tones at once, every simultaneous combination of tones, may be called *a pluritone* or *plurisound*.* [q. d. *plural tone* or *plural sound*.] In so far as its structure is agreeable to the rules of the art, it is called *a chord*, or *a harmony* in the more general sense of this term.

In pursuing the subject before us we will commence with the consideration of *single successions or series of tones, as such.*

§ 2.

The movement or progression of a voice or part from any one tone to the next following tone is called *a melodic step*. Several melodic steps taken together constitute a melodic form or figure, and several such figures or forms make *a melody*, *air*, or *song*, very much in the same way as a figure in dancing is made up of several individual steps, while a dance is made up of several figures.

The proceeding of a voice or part from tone to tone is called its *progression* or melodic *movement*, (which last is not to be confounded with rhythmical movement or time [*tempo*,] see pp. 73 and 74); when this movement of a voice or part is considered as being caused by a musical composer, it is sometimes called *the carriage* or *conduct* of a voice or part.

The doctrine of the movement of voices or parts, of the course which each voice should or should not take in this or that particular case, and, in general, the doctrine which shows how a voice may or must be carried, is very appropriately called *the doctrine of the movement of voices*, (Dynamics) or *of the carriage of voices*, or, according to §1, *Melodics*, i. e. *the doctrine of melody*, in the extended sense of the word.

In this respect, the carriage of a voice may be contemplated either in a more particular, specific and as it were more limited point of view,

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*It is a matter of regret to the translator, that occasion should ever occur for the introduction of any new, and especially any foreign musical term. In some cases, however, justice cannot possibly be done either to the translation on the one hand, or to our own musical vocabulary on the other, without having recourse to terms which have not hitherto been in use, and which cannot be obtained from the native stock of our own tongue. Such an exigence occurs in the present instance. We have no suitable word for expressing the general idea of that compound musical sound which consists of several simple sounds performed together simultaneously. The word *chord*, it is perceived, is appropriated to a *specific* signification, namely to denote a combination of musical sounds or tones *only under certain particular circumstances*, and consequently is not the proper term to express *the general* idea in question. The same is true of the word *harmony*. It is presumed, therfore, that, however desirable it may be to avoid, as far as possible, the introduction of all novel and foreign terms, for the sake of securing a perfectly simple and clearly intelligible style of communication to the work; still, in an exigence like the present, it will be deemed the less of two evils to introduce the requisite term. The word *pluritone* or *plurisound*, here adopted, is derived from the Latin *plus*, *pluris &c.*—pl. *plures &c.*, which, as employed in compounds, means *divers*, *sundry*, *several*,—and the word *tone*, or *sound*, and thus the term means *a combination of several tones, a compound sound consisting of several simples.* Tr.

or in a higher and more extended one, just according as we either direct our attention to the individual steps of the voice or to the melodic figures formed out of several such individual melodic steps taken together.

If *e. g.* we find that the voice which, on p. 121, gives the $\bar{\bar{f}}$ in the second chord, most conveniently moves downward to $\bar{\bar{e}}$ in the next following chord, and that it would impress the ear disagreeably, if, instead of this progression, the voice were to move upward from $\bar{\bar{f}}$ to $\bar{\bar{a}}$, so this is a consideration of the individual melodic step from $\bar{\bar{f}}$ to $\bar{\bar{e}}$, or from $\bar{\bar{f}}$ to $\bar{\bar{a}}$. But if, on the contrary, we inquire whether a figure consisting of several steps is constructed according to the principles of the art not merely in relation to each individual step, but also whether, as a figure itself, taken as one *whole*, it has a carriage that is agreeable to the ear, and one that is, in the language of musicians, of a *singing* and *melodious* character,—whether its melody has *a flowing progression*, *a graceful outline*, *a smooth and rounded movement*, *an easy and agreeable swing*, or, as it is sometimes expressed, whether it *sings a fine melody*, whether there is in it a real flowing of the voice:—now this is the higher point of view in which to contemplate the carriage of a voice.

It belongs to the theory of musical composition to teach how a voice is to be carried in both these respects.

The treatment, however, which it can bestow upon these two points, must, in the nature of the case, be pretty limited. That is to say, we cannot well prescribe how a voice must be carried, in order that, both in respect to the individual steps of its progression and also in reference to the general delineation of its form, it may be carried in a happy and agreeable manner. All that the theory of musical composition can do, consists chiefly in searching out those progressions which are usualy found to be repugnant and disagreeable to our ear, in deducing therefrom rules which generally (hardly universally!) hold good, and in warning, by means of these, against disagreeable progressions. The agency which the theory employs in the case, therefore, is rather negative than positive.

But even this negative agency of the theory chiefly takes effect only in relation to the individual steps of a voice; far less in respect to the delineation of the course of a voice taken as a whole. It is true we may give many rules, how this or that interval must or may proceed in this or that case; (and this doctrine—the doctrine of the individual melodic steps, musical teachers have hitherto executed with peculiar and really stupendous assiduity, and, to say the least of it, they have left no want in *the abundance* of rules and prescriptions, and especially in the multitude of *prohibitions*.) But true as it is, that a voice whose individual steps are faulty cannot appear well as a whole, and true as it is, consequently, that the following of the rules of the individual melodic steps is a necessary condition of their possessing a good melodic flow as a whole, yet, after all, the mere observance of all such rules and the carriage of the individual melodic steps in conformity with them never can of itself secure a smooth, graceful and happy swing in the melodic outline taken as a whole. On the contrary, a voice whose steps, individually considered, are all perfectly free from blemish, may, notwithstanding, as a whole, be very ungraceful, rough, and without meaning, and may produce a very infelicitous figure; while, on the other hand, the carriage of a voice may be really pleasing to the ear, when it embraces a progression which does not entirely correspond to the rules of progression in the case of individual steps, but which, on account of the agreeable outline of the whole, is not repugnant to the ear,—a fact which we shall hereafter notice in a number of examples. Such a fact affords satisfactory proof, that an agreeable delineation and carriage of a voice as a whole or in its leading features, is not only something entirely different from an agreeable carriage of the individual melodic steps, but also is something higher and more important, and that thus the rules which we possess in relation to the individual progressions of the intervals in this or that case, are far from being rules for that *carriage of a voice as a whole* which is agreeable to the ear,—are far from being rules for the formation of fine melodies or of melodic figures.

In any case, it is not the design of the present chapter to treat the laws which relate to the carriage of voices; for, the movement of a voice must, from the nature of the thing, come in order subsequently to the harmonies and harmonic successions which occur therein, while the latter topics are for the first time introduced in the following chapters, and not until after their treatment is it proper to inquire into the laws for the progression of voices in this or that particular case. It is our present business merely *to point out the method of composing musical forms of one or more voices and to show the different ways of carrying a voice in general.*

(B.)

§ 3.

Every passage of music, as we have already observed, consists either of one or of several voices. In the former case it is called *one*-voiced; in the latter, *several*-voiced; and when it consists of more than *four* voices, it is called *many*-voiced.

Our ear is entirely capable of apprehending such a combined sounding of several tones or voices; and that too, not merely as one total expression, but a practiced ear can distinguish even the progression of each individual voice.

How many voices can thus be distinguished, cannot, as a universal fact, be determined; because this depends upon the cultivation and expertness of the ear. But, at any rate, the musically learned J. J. Rousseau is obviously extravagant when he maintains and even shows by very plausible evidence and incontestibly demonstrates, that the ear can at most distinguish but *two* voices at once, and consequently that there is really no four-voiced composition, or, if there is, that it must necessarily be bad. In his

esteemed *Diction. de Musique*, at the article *Quatuor*, we read: "*Il n'y a point de vrais Quatuors, ou ils ne valent rien. Il faut que dans un bon Quatuor les parties soient presque toujours alternatives, parce que dans tout accord il n'y a que deux parties tout ou plus qui fassent Chant et que l'oreille puisse distinguer à la fois ; les deux autres ne sont qu'un seul remplissage, et l'on ne doit point mettre de remplissage dans un Quatuor.*" "There are no real Quatuors [i. e. fours, quartetts, compositions in four parts,] or at least they amount to nothing. In order to produce a proper Quatuor, the parts must almost always be alternatives, because in a whole chord there are at most but two parts which produce music and which the ear is capable of distinguishing at once: the two others are only a mere filling up [a pleonasm]—a filling up which ought never to take place." Much less, according to the same writer in the article Quinque, is a genuine five-voiced composition conceivable. He says: "*Puisqu'il n'y a pas de vrai Quatuor, à plus forte raison n'y a-t-il de véritable Quinque.*" "Since there are no real Quatuors, there are, for a still stronger reason, no genuine Quinques" [fives, quintetts, five-voiced compositions.]

Now this amounts to about the same thing as to say: the human eye is capable of contemplating only one object at a time, or at most not more than *two* figures at once. Consequently, a group of more than two persons in the plastic arts is a non-entity, and "*il n'y a point de groupe de Laocoon, ou il ne vaut rien:*" "there is no group of Laocoon, or at least it amounts to nothing.

REMARK.

The question, of how many voices or parts a musical composition might consist, it is not easy, in general terms, to decide. *Marpurg* (in s. Generalbass, III. Thl. V. Abschn.) has estimated that at any rate a 133-voiced composition is conceivable. But it may easily be inferred from what has been said above, that a composition of so many voices, though indeed *conceivable*, still is scarcely ever in point of fact to be constructed,—to say nothing of the fact that no human ear could distinguish so many parts as separate voices, especially as they must be continually passing and crossing each other.

This calculation of Marpurg, moreover, is not correct. For, if we examine into the matter and ascertain what his idea was, and correct the typographical error in §11, (c—c instead of c—e), we shall at once perceive that the limits of the actual difference of such voices are not only arbitrarily assumed, and that the process is carried even into the trivial and the puerile, but that the usually acute mathematician has in this instance committed an error even in the outset, by taking the harmonic successions

c——c
g——a
e——f
Base C F

as those in which, on the ground of the common interval of *c*, there would be the largest possible number of different melodic steps: for, in other harmonic successions, in which *two* such common tones occur, as e. g.

c——c
g——a
e——e
Base C——A

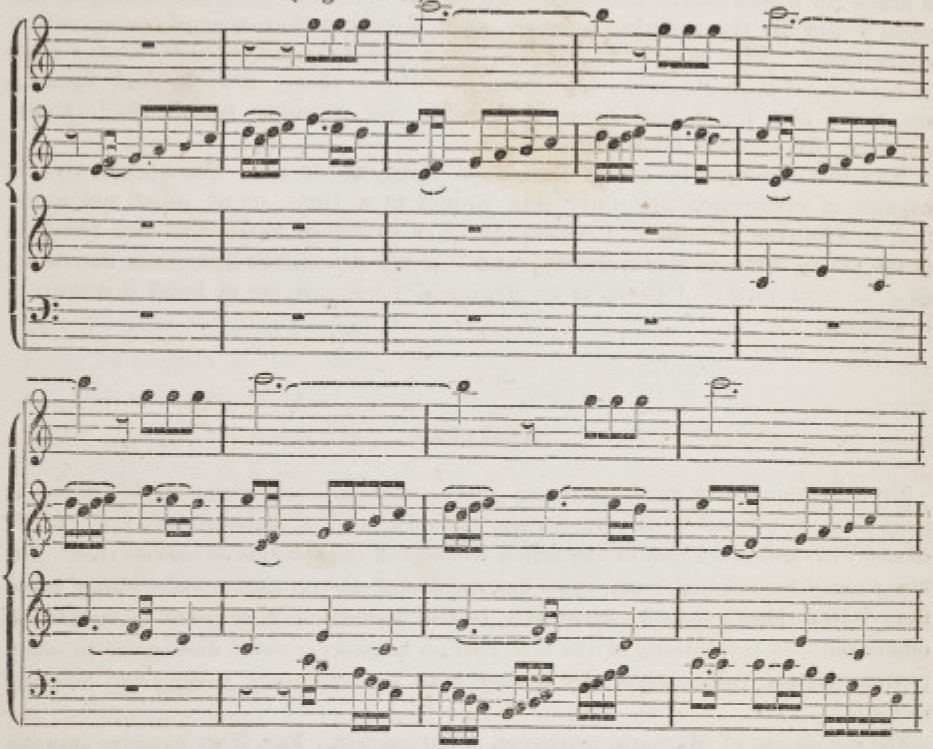
we may obtain, according to Marpurg's idea of the thing, not only 133, but 257 different voices. His calculation accordingly fails, to the amount of 124 voices.

---

§ 31-2.

The apprehending and distinguishing of several voices is often *facilitated* by different particular circumstances. This is e. g. especially the case when each of the different voices has *a peculiar delineation* or *outline* which distinguishes it from the rest, as e. g. in fig. 54, *i.*

(Fig. 54. *i.*)



where the melody of one voice differs entirely from that of the others. Indeed so dissimilar are the voices in this case, that it cannot be difficult for the ear to distinguish them, the one from the other.

Another facility is gained when the several voices do not commence at the same time, but *come in successively*, so that thus the commencement of each can be distinctly observed, as is the case in the foregoing melodies, fig. 54, *i.*, above.

The ear obtains still an additional facility in distinguishing the different voices of a piece of music, from being previously prepared therefor by hearing each of the different melodies *beforehand*, either entirely alone, or at most with but few others. This species of preparation is furnished to the ear in the first six measures of the passage in fig. 54, *i.*, above, at least, as it respects the melodies of the first three voices.

The ear is yet farther aided in distinguishing the different voices by *any difference that may exist in the character of their sound*, as also by the various helps of *instrumentation* and the like, to which subject we shall recur in the proper place. (Comp. also §6, the 2d and 4th paragraphs; §43, the 2d paragraph; §46, &c.)

(C.)

DIVISION AND SPECIES OF VOICES.

(1.)

UPPER AND UNDER, OUTER AND MIDDLE VOICES.

§4.

(a.) *Definition.*

We can divide in different ways the voices which form a several-voiced composition, according to the different grounds of division that we may adopt.

As it respects *the relative elevation* of a voice, i. e. its being situated above others, we call that which delivers the series of the highest tones *the upper voice;* while we name that which gives the lowest series of tones *the under voice*—also *bass* voice, from the Italian word *basso*, which means *low*,—or *base*, from the English word *base*, which also means *low*. (It will of course be understood that the base voice need not always be *in itself very low;* every voice which, though in itself not very low, still is *lower than the rest*, is in this respect properly called, *a base voice;* and equally immaterial is it whether this voice be written with the so called base clef or with any other clef.

Many writers are in the habit of calling the base voice also *the ground* or *fundamental voice*. This appellation, however, is inappropriate, as we shall see when we come to the doctrine of ground or fundamental harmonies and tones.

A voice which has to deliver a series of tones lying somewhere between the highest and the lowest, is called *a middle* voice; and in contradistinction from the middle voices, the highest and the lowest taken together are called by the name *outer voices*.

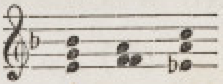
The different voices are often distinguished also by numerical names: *the upper voice* is called *the first;* the next lower is called *the second;* the next lower still is called *the third;* the next, *the fourth*. (It will be observed that in this case we reckon *downwards*, whereas we have hitherto always reckoned *upwards*. Gl. Mus. Tr. § XXXIV.)

Still another method of naming the different voices according to their respective elevations, we shall bring to view in §14.

§5.

(b.) *The concurrence and the crossing of voices.*

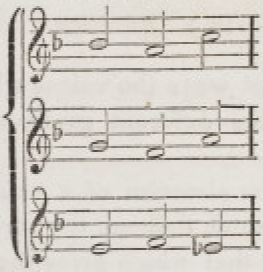
(1.) It sometimes happens that a voice comes in contact with another, (either higher or lower), meets it on one and the same note, coalesces with it in one and the same tone, as e. g. in the following passage:



(Comp. fig. 51, *i.* below.)

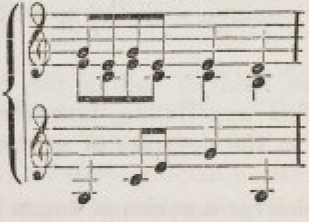
where the middle voice coalesces with the under voice in the tone $\bar{f}$. (More on this subject hereafter.)

(Fig. 51. *i.*)



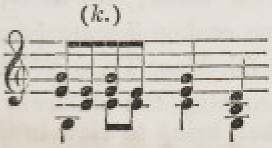
(2.) It sometimes occurs, that a voice for a moment even ascends above another which is otherwise the higher one, or descends below another which is in the main a lower voice, and thus, as it were, jumps over it and crosses its track; as e. g. in fig. 52, *i.* below:

(Fig. 52. *i.*)



where, at the third quarter, the under voice rises above both the others, and thereby, as it were, ceases for a moment to be the under voice, while the passage, taken merely according to its notes, without following the thread of its distinct voices, appears, in consequence of this temporary ascension of the under part above the others, as represented below in *k*

(*k.*)



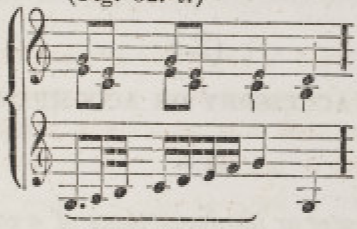
§6.

(c.) *Equivocalness.*

Such a crossing of voices produces a new species of *equivocalness*, by throwing the several distinct series of the different voices into a kind of confused jumble with each other, and by thus, in some measure at least, leaving the ear in doubt, whether it is to regard this or that voice as an upper, middle or under one.

Which side the ear in such cases of doubt will always be most likely to take, cannot, as a universal principle, be exactly determined. It can only be remarked in general, that the ear naturally inclines to follow the thread of the voices; and hence at the third quarter of the above example in fig. 52, *i.* p. 128, it will be likely to recognize in the tone $\bar{g}$ the voice which it heard ascend from *g* through $\bar{c}$ and $\bar{e}$ to this $\bar{g}$. The ear will still more clearly follow this thread, in proportion as the melody of the voice thus ascending distinguishes itself from the others by its peculiar form, and in this way renders itself particularly recognizable, as e. g. in fig. 52, *l*, below:

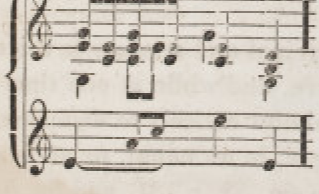
(Fig. 52. *l.*)



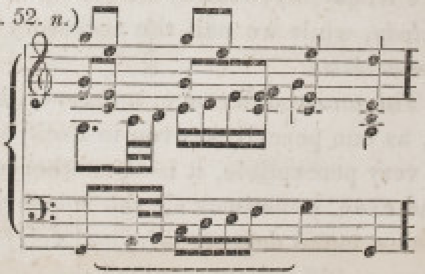
where the under voice not only distinguishes itself, by its intermediate quicker notes, from the other voices, which move much slower than itself, (comp. § 3 1-2,) but it also, by means of these intermediate tones, appears as one unbroken thread, and is on that account more easy to be followed.

The equivocalness in question becomes still farther diminished, when the under voice, in case of its ascending above another, is strengthened by its lower octave, or the upper voice by its higher octave, and is thus more distinctly marked, as is the case, e. g. in fig. 52, *m* and *n*, below:

(Fig. 52. *m.*)



(Fig. 52. *n.*)



Moreover, among other effects of the same cause, there is still an additional facility furnished to the ear in following the thread of a voice, where the voices palpably distinguish themselves from one another by the peculiar character of their sound respectively. (Comp. § 3 1-2.) If e. g. in fig. 52, *i*, p. 128, the two upper voices were both violin voices, and the under voice a clarinet voice, the ear would obviously be able to follow their several threads, though crossing each other, much more easily than if all three voices were performed by violins, or by three clarinets, or perhaps by violins played *pizzicato* in merely detached tones, not in an unbroken thread of tones closely connected together, or all were performed on one and the same instrument, as e. g. a piano-forte, a harp, and the like.

---

§ 7.

(d.) *The characteristic difference of outer and middle voices.*

It may be remarked in general, that the two outer voices usually make a stronger and more definite impression upon the ear than the middle voice,—a fact which is especially true of the upper voice. The outer voices are therefore, even considered as such, always to be regarded as being in this respect *the principal voices*, (§ 8.)

(2.)

PRINCIPAL AND ACCESSORY OR ACCOMPANYING VOICES.

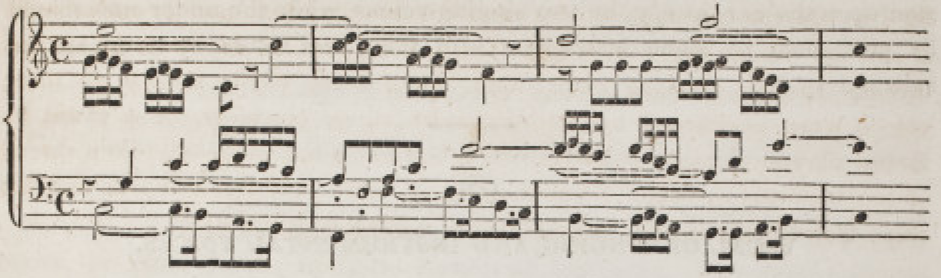
§ 8.

In reference to *the greater or less importance of a voice in comparison with others*, we distinguish *principal* and *accessory* voices.

When among the several voices, airs or melodies of which a composition consists, one or more of them, from some cause, particularly distinguishes itself from the rest—has a prominence which they have not, and by this means draws the attention of the ear especially to itself, we apply to such a voice the title of *principal voice*, *principal melody*, *principal air*, and by way of contrast to it, we call the others *acccessory* or *accompanying* voices. We frequently, moreover, briefly term the principal melody *the air* or *the melody*, while we call the accessory or accompanying voices simply *the accompaniment*.

The entire difference, moreover, between principal and accessory voices is, as one perceives, even in itself merely relative, and while at one time it is very perceptible, it is at another so slight as almost entirely to disappear, and even sometimes all the voices are, as it were, in an equal, or at least almost equal degree, principal voices, as e. g. in fig. 53, p.131, and fig. 54, *i*, on p. 126, where each of the four voices has its own distinct and independent air.

(Fig. 53.)



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§ 9.

For the very reason that the principal voices particularly impress the ear, they require the most careful construction and the most scrupulous observance of the laws pertaining to the good carriage of voices. They demand a more strict compliance with these laws than is indispensable in the case of the accessory voices. In these last, for the opposite reason, slight deviations from the regular and appropriate purity are less striking to the ear, and on this account are more pardonable than they would be in the principal voices.

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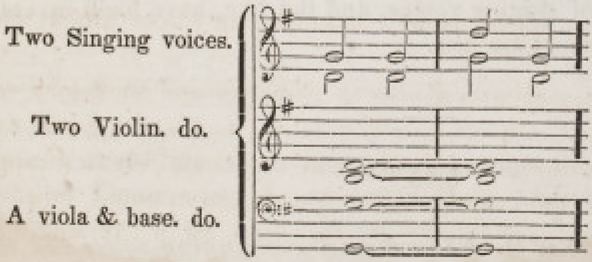
§ 10.

On account, moreover, of the more definite impression made by the principal voices than that produced by the less distinctly marked accessory voices, and on account of the retrocession of the latter behind the former, it becomes necessary also to take care that the principal voices, *taken by themselves and separately from the accessory voices*, form a good composition, so that the music would still remain good, even though the accompaniment were entirely removed.

I will illustrate this by an example. If, in the following passage,



the two upper voices are performed alone, without the others, it will be perceived by every one that such a two-voiced passage sounds very unsatisfactorily. (§ 73.) If, moreover, the aforesaid two series of tones were to be performed by any two voices that would make a particularly distinct impression upon the ear, as e. g. by two singing voices, while the under ones should be performed by some instrument, still the effect would by no means be satisfactory.*

(3.)

VOCAL OR SINGING, AND INSTRUMENTAL VOICES.

§ 11.

As it respects *the different modes of producing sound*, it has already been observed in Gl. Mus. Tr. § VII. that sound, as the technical material of our art, is at one time produced by the human throat, and at another by musical instruments. On these two ways of producing sound is founded the distinction of *vocal* or *singing voices* and *instrumental voices*.

Although this is not strictly the place to treat, even in any measure, the doctrine of the different singing and instrumental voices, since these doctrines—the doctrines of vocal composition and the doctrine of instrumentation, will constitute their appropriate chapters; yet the few following observations in the general may not be entirely out of place.

§ 12.

As it respects the relation of singing voices to instrumental voices, the former always very properly hold a rank in advance of the latter, so that whenever singing and instrumental voices operate together, the latter always appear only as *an accompaniment* to the former, and hence the former, viewed in relation to the latter, always appear as the principal voices. At least, according to the nature of the thing, this always should be the case,—the instrumental accompaniment should uniformly be treated merely as the frame that surrounds the picture. The fact that in very recent times, for the sake of having something that is quite new, instrumental concerts with an accompaniment of singing voices, and the like, have been invented, might be denominated almost *too new*.

§ 13.

In respect to *the nature of the different species of singing voices and their relation to one another*, the following things may be remarked.

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*I have said more on the subject of a proper treatment of accompanying voices in der allgem. *Encyklopädie*, in Art. *Begleitung*, 8 Thl. S. 349, u. ff.

Singing voices divide themselves, according to their nature, into *male* and *female* voices, which last comprise also the voices of *children* and of *castrati* or *eunuchs.* Men's voices are, on an average, just an octave lower than women's.

There are, moreover, higher and lower female voices, and also higher and lower men's voices.

The human voice may therefore be divided in general into the following four principal species.

(1.) *The high woman's, boy's or eunuch's voice: the Soprano, Discant* or *treble voice;* in Italian, *Soprano, Soprano acuto,* and also *Canto:* in French *Dessus,* or *Haut dessus;* in Latin *Cantus* or *Discantus.* The usual compass of this voice consists of the tones, say, from c̄ to g̿ or a̿. (It is to be understood that we do not here or in what follows on the subject of the different species of voices, speak of solo singers, whose compass of voice is often extended considerably farther both below and above.)

(2.) *The low woman's, eunuch's and boy's voice;* called *the Alto* or *Contralto* voice; It. *Alto* or *Contralto;* Fr. *Hautre-Contre;* Lat. *Altus, Altitonans,* and also *Motetus.* Its compass is, say, from *g* to d̿.

(3.) *The high man's voice, or tenor:* It. *Tenore;* Fr. *Taille;* Lat. *Tenor.* Compass from *c* to ḡ.

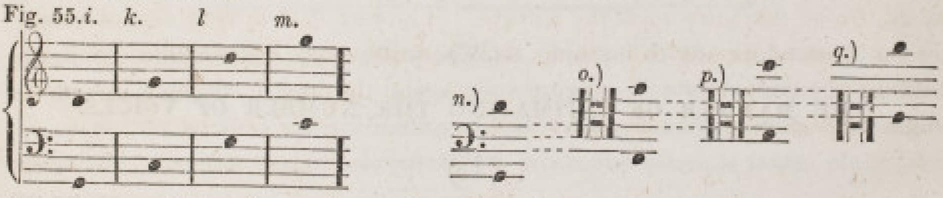
(4.) *The low man's voice* or *base:* It. *Basso;* Fr. *la Basse, Basse chantante;* modern corrupted Lat. *Bassus.* Compass from *G* to d̄.

Besides these four principal species of voice we find also some *intermediate* or *subordinate* species. A singing voice, namely, which does not quite reach the height of the Soprano, nor the depth of the Alto, and which hence holds an intermediate position between the two, is called when in its compass and character it approaches nearer the real Soprano than it does the Alto, *a lower Soprano, a Half-Soprano,* or [*a second treble*],—It. *Mezzo Soprano,*—Fr. *Bas-Dessus* or *Second Dessus:* but when, on the contrary, it approaches near the Alto voice, it is called *a Higher Alto.* In like manner a voice which lies between the tenor and base is called *a Low Tenor, a Half-Tenor, Mezzo-Tenore, Basse Taille,*—or *a High Base, a Half Base, Barytone, Baritono, Concordant,* just according as it comes nearer the actual Tenor or the perfect Base voice.*

Finally, men's voices are sometimes formed, especially in France, which crow up to the height of the Alto, and which are called *Haute-taille,* or *Haute-contre.*†

In fig. 55 below,

Fig. 55.



the compass of the four principal species of voice is represented in a kind of table; namely, *i* and *n* exhibit the compass of the Base voice, *k* and *o* that of the Tenor voice, *l* and *p* that of the Alto voice, and *m* and *q* that of the Soprano voice. It is here perceived that the highest female voice is just an octave higher than the highest male voice, while the lowest female voice is just an octave higher than the lowest male voice; that the highest female voice is a fourth higher than the lowest female voice, and so also the highest male voice is a fourth above the lowest male voice; and that the lowest female voice is a fifth higher than the highest male voice.

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* Vergl. den Art. Baryton in der Encykl. der Wissensch. u. Künste v. *Ersch,* 7r. Bd. S. 471.

† Castil Blaze Dict. 2. p. 380.

It is perceived farther that the different voices *have several tones in common with each other*. Thus e. g. the tones from c to $\bar{d}$ are common to the Base and the Tenor voices, those from g to $\bar{d}$ not only belong to both these but to the Alto also, while the tones $\bar{c}$ to $\bar{d}$ occur in all the four species of voice, &c.

A tone thus occurring in several different voices does not, however, sound exactly alike in them all, but (though in respect to its absolute pitch—its number of vibrations, it is indeed always the same tone,) it is still, in respect to *the quality* or *kind of sound*, very different in the different cases; (p. 11.) The tone $\bar{d}$, e. g. is one of the highest for the Base voice, one of the lowest for the Soprano, and, as it respects the Tenor and Alto, an intermediate tone; consequently it has a distinct and peculiar character in the case of each.

§ 14.

It may be remarked, finally, that musical usage has in a sort of figurative way transferred and applied the names of the four principal species of *singing* voice to every *instrumental* piece also that consists of four voices, so that we not unfrequently hear the highest of four instrumental parts called *the Discant*, the second *the Alto*, and the two following *the Base* and *the Tenor*. In this sense we might, e g. call the highest series of tones in fig. 53, p. 131, the Soprano, the second the Alto, &c., even though they were to be performed by four *instruments*, or perhaps were all four to be played together on a piano-forte or an organ.

Whatever else is to be said in relation to the treatment of the different singing and instrumental voices, whether individually taken or in their connection with one another, belongs to the doctrines of vocal composition and of the knowledge and use of instruments.

(D.)

THE MANNER OF ESTIMATING THE NUMBER OF VOICES.

(1.)

THE PROPER IDEA OF A PLURALITY OF VOICES.

§ 15.

In deciding the question, of how many voices a piece of music consists, we can with propriety reckon only those voices in the composition which are *really different* from one another—those of which each has a peculiar air of its own, materially different from the melody of all the rest, or, as it is said, only *the independent* voices; while two or more voices which have in principle only one and the same air, which convey substantially but one and the same musical idea, and carry only one and the same series of tones, are reckoned as but one.

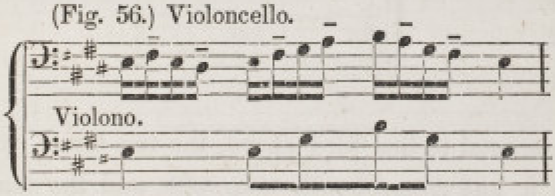
(*a.*) Thus when e. g. in executing a symphony the first violin voice is furnished with ten, twenty, or more violinists, still all these together play but *one* voice.

(*b.*) So likewise it is reckoned as only one distinct voice when e. g. flutes or oboes play the violin voice in connection with the violins in unison (*all' unisono col violino.*) That is to say, this is a mere doubling of the thread—an act by which indeed it becomes stronger and as it were thicker, but yet the web or texture does not become thereby properly several-threaded, nor, in like manner, does the composition become several-voiced.

(*c.*) Again, we consider that but a one-voiced composition in which two voices have one and the same air, with the difference only that one is an octave higher or lower than the other, as e. g. the flutes an octave higher than the violins, or the bassoon an octave lower than the violins, &c. (*all' ottava del violino,—all' ottava bassa.*) This also is a mere strengthening of the thread by another that is thicker or thinner;—the voice is merely doubled in a higher or a lower octave, which doubling cannot be reckoned as a proper additional voice, because fundamentally the two are still only one and the same. Thus, the example in fig. 52, *m.* and *n.* p. 129, is in essence only a three-voiced composition.

(*d.*) Moreover, we are not to take those for two different voices, of which the one performs the air of the other, only somewhat simplified, as e. g. merely the more essential notes, with the omission of the intermediate notes, as in fig. 56 below,

(Fig. 56.)



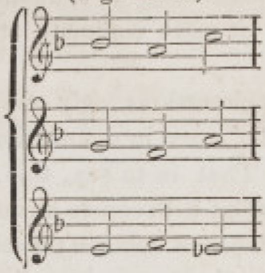
where the violono properly gives only an abstract of the violoncello voice, or the violoncello voice only gives the violono voice with embellishments. This again is a mere strengthening of a thread by another, with this difference only, that the one is more frizzled, while the other is more plain and smooth.

---

§ 16.

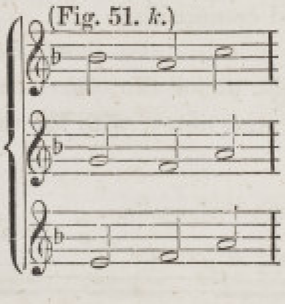
A voice, however, does not cease to be properly a distinct one when in a single instance it happens to coincide with another voice in one and the same tone and to be in unison with it, as is the case in the example already given in § 5; for, notwithstanding this temporary coincidence, each of the three voices has still its own peculiar air, as may be seen in the form presented below:

(Fig. 51. *i.*)



Neither of these voices moves forward with the others in unison,—neither even in a single instance, takes one and the same melodic step as the others, though the two under voices meet once on the note $\bar{f}$ in unison. It would be quite another case, if the two voices which meet in this instance were to proceed on together in unison from this $\bar{f}$ to one and the same following tone, and were thus to take *one and the same melodic step together*, as in fig. 51. *k*, below:

(Fig. 51. *k.*)

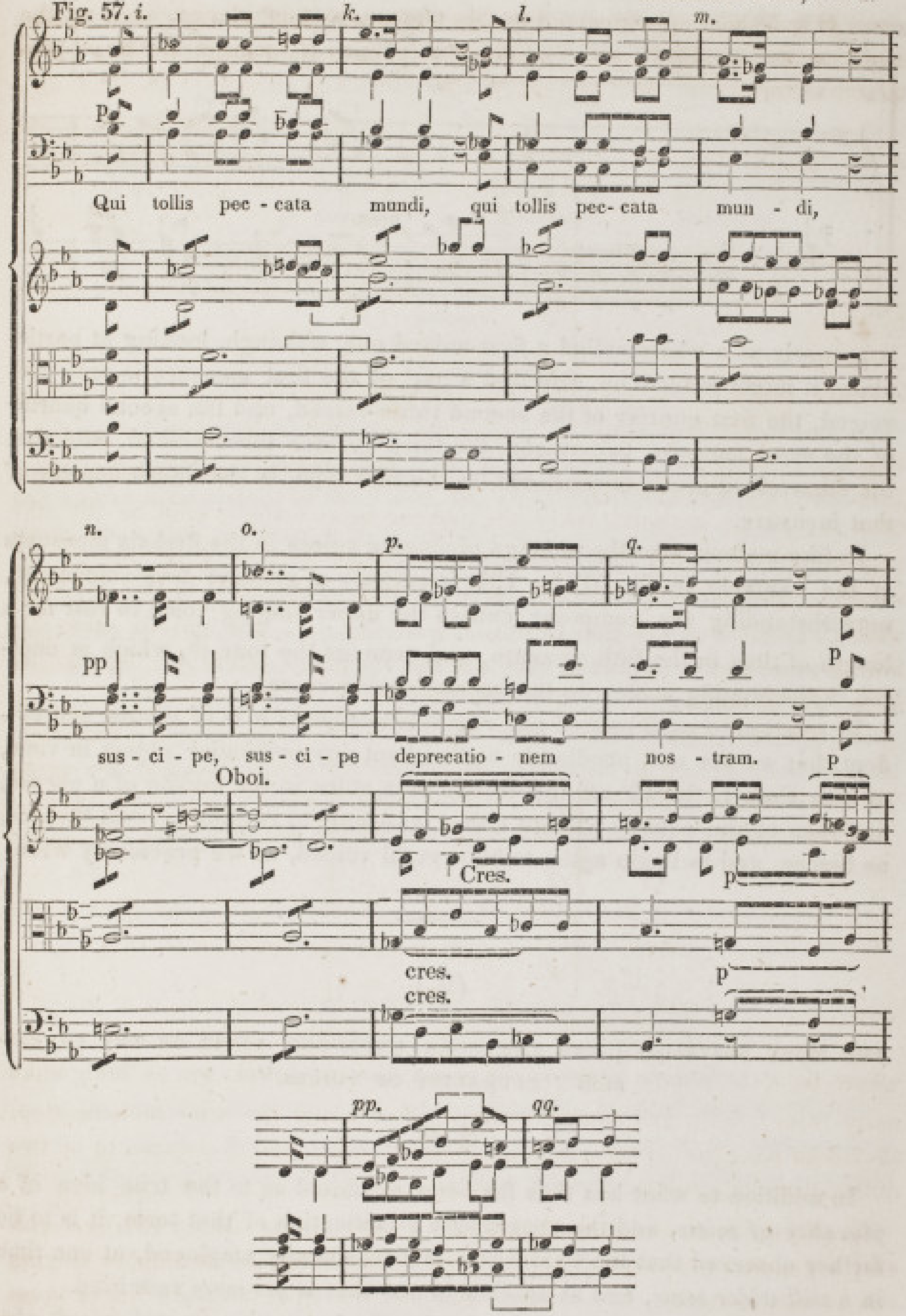


where from the second to the third chord, the two lower voices both alike move from $\bar{f}$ to $\bar{a}$, and consequently take one and the same melodic step, they both have one species of melodic progression, and thus cease to be two different melodies—two distinct voices.

So also the sixth measure of the singing voices in fig. 57, p. 137, is decidedly a genuine four-voiced passage, notwithstanding the two upper singing voices once coincide in one tone. But onward from the point where these two voices take three steps together (from $\bar{d}$ to $\bar{e}\flat$, from $\bar{e}\flat$ to $\bar{f}$, from $\bar{f}$ to $\bar{g}\flat$,) the passage cannot indeed be properly called a four-voiced one. If the composer would still remain four-voiced, he must write somewhat as in the example fig. 57, *pp.* on the following page.

Hummel's Mass, No. 1.

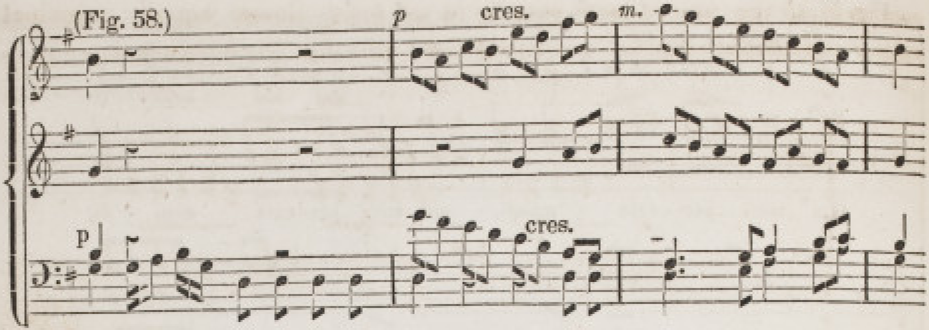
Fig. 57.


i.
k.
l.
m.
p
Qui tollis pec - cata mundi, qui tollis pec- cata mun - di,
n.
o.
p.
q.
pp
p
sus - ci - pe, sus - ci - pe deprecatio - nem nos - tram.
Oboi.
Cres.
p
cres.
cres.
pp.
qq.

§ 17.

Again, the number of voices in a composition is not diminished by the fact that a voice is silent (rests) for a short time. Thus e. g. the passage in fig. 58, on the following page, My Four-voiced Song, op. 17.

(Fig. 58.)



is properly, as a whole, called a four-voiced one, although, looking at particulars, it might indeed be said that a part of the first measure is only one-voiced, the first quarter of the second three-voiced, and the second quarter of the same measure two-voiced, the third quarter three-voiced, and that the four-voiced music commences for the first time, in the fourth quarter of that measure.

In like manner also the passage of singing voices in the first six measures of the example in fig. 57, p. 137, is entirely a genuine four-voiced one, notwithstanding the composer causes the upper singing voice to rest for a length of time in the fifth measure, and commits the tone $\bar{c}\flat$, which is omitted in the singing voices, to the accompanying voices.

In relation to such pauses and recommencements it is of course self evident, that we are not, needlessly and without any particular object in view, at one time to break off the thread of a voice in the middle of a phrase, and then again, equally without object, suddenly to resume several threads, as before, and to begin again to be several voiced, as we previously were.

(2.)

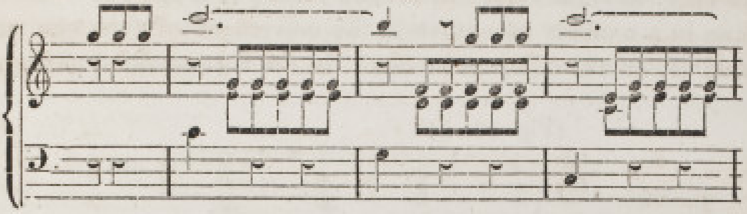
THE MORE RESTRICTED AND THE MORE EXTENDED SENSE OF THE EXPRESSION "PLURALITY OF VOICES."

§ 18.

In addition to what has thus far been exhibited as to the true idea of *a plurality of voices*, and the appropriate signification of that term, it is to be farther observed that the expression is occasionally employed, at one time in *a still wider sense*, and at another in one that is *yet more restricted.*

In a more restricted and higher sense, the expression *several-voiced*, *plural-voiced*, or *polyphonic*, is used only in reference to those compositions in which each voice, not only has its own independent air,—an air differing from all the rest, but in which the air of each voice is so perfectly formed that no one in particular is so exclusively favored as to attract the attention predominantly to itself and leave the others to act as mere vague accompaniments without any important musical idea to communicate; but, on the contrary, all the voices are equally or at least almost equally principal voices. (Compare fig. 54. *i.* on page 126, with fig. 54. *k.* below:)

(Fig. 54. *k.*)



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§ 19.

On the other hand, the number of voices is sometimes again reckoned with *less exactness*, and not only those are counted which have a distinct and appropriate melody of their own, but even the entire number of the different classes of performers to be employed in executing the piece are in a loose and general manner taken into the estimate; and in this wide and improper sense of the term we sometimes e. g. call a symphony twelve-voiced when it is written, say, for a first and second violin, a viola, a base-viol, a flute, two oboes, two bassoons, two trumpets, and a kettle-drum, and thus for twelve parts, though perhaps not a single passage occurs in it which has really so many voices as the term would imply. In this case, where one reckons merely according to the number of parties employed in manning the piece, those are counted as several distinct voices which in respect to *composition* are properly to be considered only as one.

---

§ 20.

Again, it is an impropriety in another point of view, that a piece of music with instrumental accompaniments, in which two, three, four, five, six, &c. singing voices are employed, is denominated merely according to the number of the singing voices *a duett*, *terzett*, *quartett*, *quintett*, *sextett*, (*sestetto*,) *septett*, (*settetto*,) &c. without reference to the number of instrumental voices concerned in the piece, even though the latter are perhaps essential voices.

(3.)

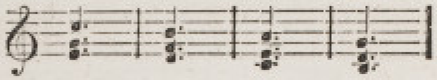
PLURALITY OF VOICES BY DETACHED FRAGMENTS.

§ 21.

(a.) *Idea,—Different Species.*

We may sometimes carry a voice in such a peculiar way as to make it in a manner represent several voices. That is to say, it can be made alternately to furnish at one time a portion of the melody of a particular voice, and at another a portion of the melody of another voice, and thus as it were to carry several voices in broken pieces or fragments. In this way the ear can in a manner recognize in the movement of this one voice the progression of several different voices. In the three-voiced passage in fig. 59. *i.*

(Fig. 59. *i.*)

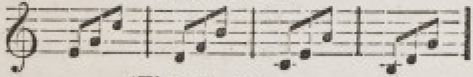


three tones always sound at the same time, namely:

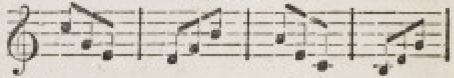
Upper series,	$\bar{\bar{c}}$	$\bar{b}$	$\bar{a}$	$\bar{g}$
Middle series,	$\bar{g}$	$\bar{f}$	$\bar{e}$	$\bar{d}$
Lower series,	$\bar{e}$	$\bar{d}$	$\bar{c}$	b

Now it is clearly impossible that one voice should perform this three-voiced passage in the manner in which it is here written, because it cannot give all three tones *at once;* but, in a broken, fragment-like form, it can do it, by moving in the manner exhibited in fig. 59. *k.* or *n. o. p. q.*

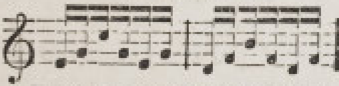
(Fig. 59. *k.*)



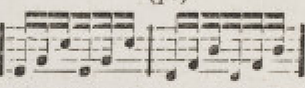
(Fig. 59. *n.*)



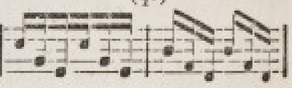
(Fig. 59. *o.*)



(*p.*)

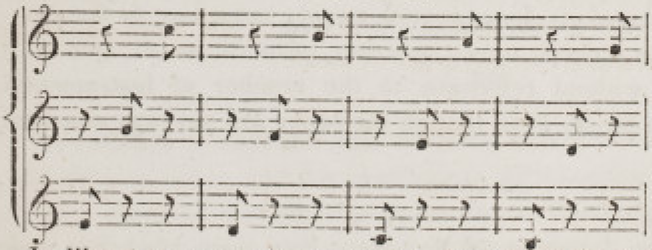


(*q.*)

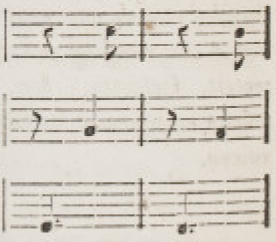


By thus striking in each chord the tones of all three voices, in a broken manner, one after the other, it produces a kind of simultaneous representation—a broken image of three voices and of the progression of each. In such cases as that found in the example fig. 59. *k.* for instance, the ear can always imagine that one voice pauses for a moment while the other performs its tone, as is shown in fig. 59. *l.* below, or that the voices come in successively, as in fig. 59. *m*, below.

(Fig. 59. *l.*)

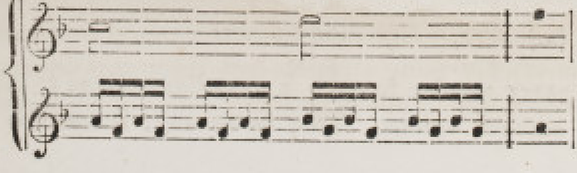


(*m.*)

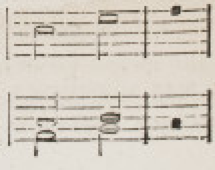


In like manner, we may regard the example in fig. 60. *i.*, which to the eye is only a two-voiced passage, as being in a certain sense a three-voiced composition, as shown in fig. 60. *k.* below:

(Fig. 60. *i.*)

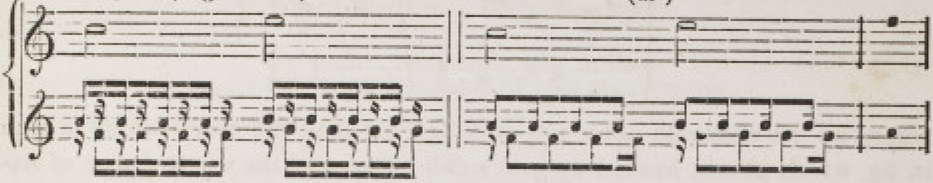


(*k.*)



for, one under voice in fig. 60. *i.* gives in a manner the tones of the two lower voices of fig. 60. *k.* and thus performs the office of two voices, by combining in itself, as one perceives, their two distinct sets of tones. Here again one may conceive to himself that the one under voice of *k.* always pauses while the other voice performs its tones, and vice versa, as in fig. 60. *l.* or as if the two struck their tones repeatedly in an alternating manner as in fig. 60. *m.*

(Fig. 60. *l.*) (*m*)



The two tones $\bar{f}$ and $\bar{a}$ of the two under voices of fig. 60. *k.* are as it were broken up into small pieces or fragments in fig. 60. *i.* and in this way are made to be exhibited by a single voice; instead of two under voices which in fig. 60. *k.* hold their position on the tones $\bar{a}$ and f during the time of half a measure, we hear in fig. 60. *i.* a single voice which repeatedly moves backwards and forwards from $\bar{a}$ to $\bar{f}$. The latter, while by means of such a movement it represents in a kind of figurative and symbolical manner, several voices—addresses to our perception several voices under the garb of a single one, performs thereby in a certain sense the office of two, by doing itself alone what could otherwise be done only by the union of several voices.

Such an illusory representation of several voices by a single one may appropriately be called *a breaking or chopping up of a voice,* and the several voices which are represented by one may be called *broken voices,* while that, on the contrary, which presents the tones of several voices in a broken manner, may be termed *the breaking voice*.

Such a breaking of a voice is consequently that mode of carrying a voice whereby it represents, or, as it were, supplies the place of several voices; it is, so to express it, such a carriage of a melody that the latter can be regarded as harmony—harmony in the dress of melody.

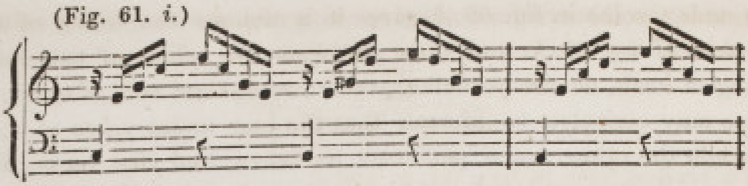
---

§ 22.

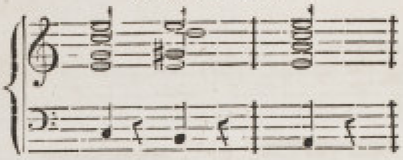
Such a breaking or chopping up of a voice may moreover occur under *innumeralle different forms,* and in these cases the several voices sounding under the garb of one appear at one time *more definite and distinct,* and at another *less so, than do several separate voices.* We will now exhibit some examples of these various forms.

That which is usually known under the term *arpeggio* or *arpeggiatura,* i. e. the harp-like manner of striking a chord, belongs in this class, as e. g. in the passage in fig. 61. *i.* on the following page,

(Fig. 61. *i.*)



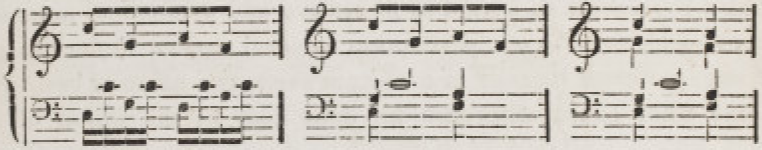
(Fig. 61. k.)



where all the sixteenth notes are nothing else than the chord which is seen in fig. 61. *k.* above, broken up into small notes, and the whole figure of sixteenth notes in this case obviously was not intended to be taken as the progression of the melody of a single voice—as a proper melodic figure, but only as a broken manner of striking the successive chords of several voices.

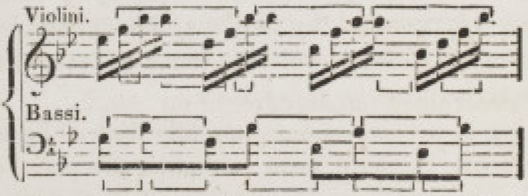
So also in fig. 62. *i.* one readily recognizes a breaking or dividing up of the four-voiced passage found in fig. 62. *k.* or indeed of the five-voiced set, in fig. 62. *l.* below:

(Fig. 62 *i.*) (*k.*) (*l.*)



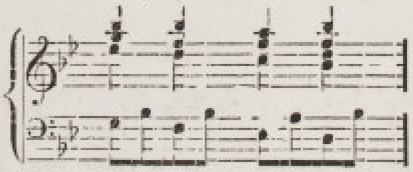
In like manner, the apparently two-voiced passage in fig. 63. *i.*

(Fig. 63. *i.*



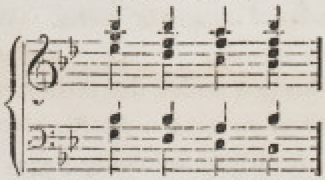
still performs the office of a four-voiced passage, as in fig. 63. *k*

(Fig. 63. *k.*)



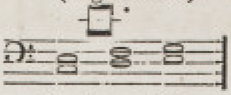
if not of a five-voiced one, as in fig. 63. *l.*

(Fig. 63. *l.*)



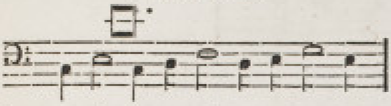
So likewise the three-voiced passage of fig. 64. *i.*

(Fig. 64. *i.*)

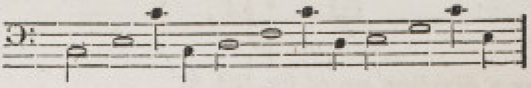


found in a broken form in figs. 64. *k.* and *l.*

(Fig. 64. *k.*)



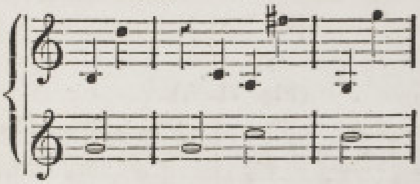
(*l.*)



is nevertheless exhibited under the garb of only two voices.

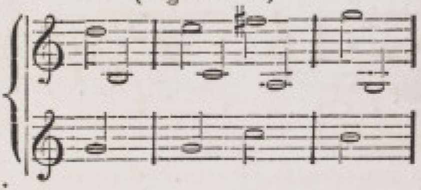
In a similar manner, the example in fig. 65. *i.*

(Fig. 65. *i.*)



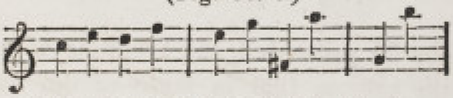
is to be deemed a three-voiced passage, as in fig. 65. *k.*

(Fig. 65. *k.*)



So also can fig. 66. *i.*

(Fig. 66. *i.*)



be considered a two-voiced passage, as in fig. 66. *k.*

(Fig. 66. *k.*)

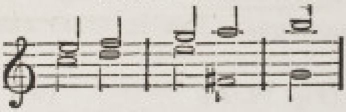
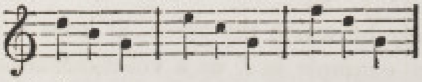


fig. 68. *i.*

(Fig. 68. *i.*)



as a breaking of fig. 68. *k.*

(Fig. 68. *k.*)

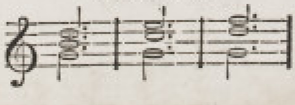
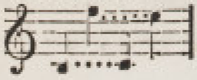
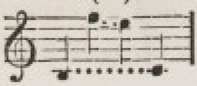


fig. 69. *i. k. l. m.*

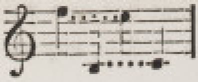
(Fig. 69. *i.*)



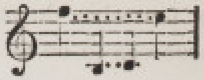
(*k.*)



(*l.*)



(*m.*)



as a breaking of fig. 69. *n.*

(Fig. 69. *n.*)

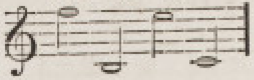
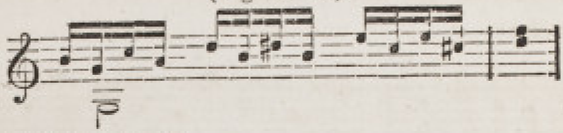


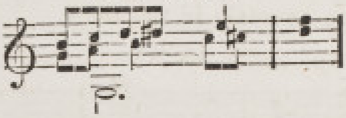
fig. 70. *i*

(Fig. 70. *i.*)



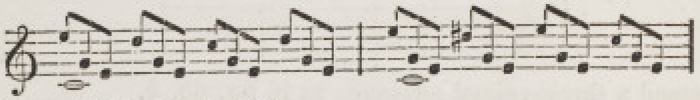
as a dividing up of fig. 70. *k.*

(Fig. 70. *k.*)



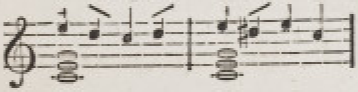
and fig. 71. *i.*

(Fig. 71. *i.*)

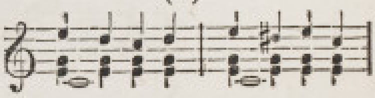


as a breaking of fig. 71. *k.* or *l.*

(Fig. 71. *k.*)



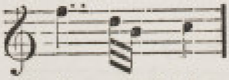
(*l.*)



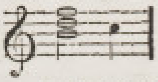
§ 23.

In the examples thus far presented, the breaking of a voice has always been pretty *clear* to the eye, so that in many of the examples one would *easily* conclude that they did not stand so much in the attitude of one-voiced melodies, as in that of broken forms of striking several simultaneous melodies of several-voiced passages. But in other cases this is *far less* clear. In fig. 72. *l.* e. g.

(Fig. 72. *l.*)

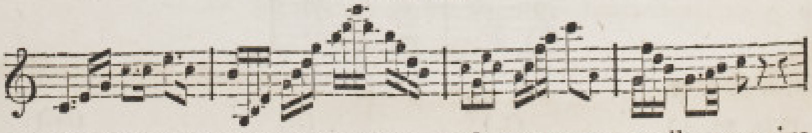


(*m.*)



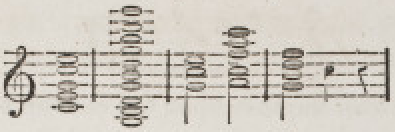
it would in fact scarcely be worth the pains, at least it would be rather far-fetched, to regard the example in *l.* as a voice-breaking of that in *m.* So likewise in the passage fig. 73. *k.*

(Fig. 73. *k.*)



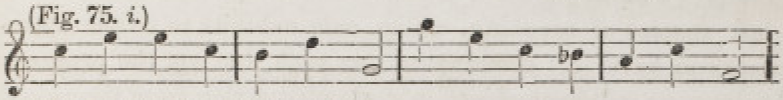
we perceive throughout but one voice, and we cannot easily conceive it to ourselves to be as we find it, say in fig. 73. *i.* on the following page,

(Fig. 73. *i.*)



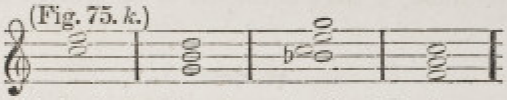
in the first measure five-voiced, in the second ten-voiced, in the third three and five-voiced, in the fourth four and one-voiced, and the upper voice to move from $\overline{\overline{e}}$ to $\overline{\overline{\overline{g}}}$, thence to $\overline{\overline{e}}$, $\overline{\overline{\overline{c}}}$, $\overline{\overline{f}}$, and $\overline{\overline{c}}$; and the other voices, one hardly knows where. Nor is it easy to imagine the example in fig. 75. *i.*

(Fig. 75. *i.*)



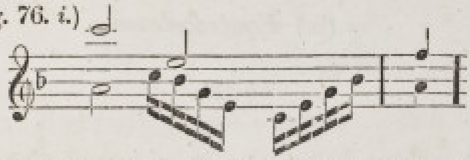
to be several-voiced as in fig. 75. *k.*

(Fig. 75. *k.*)



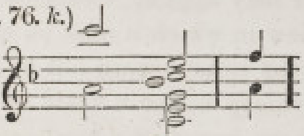
In like manner we might indeed perhaps in fig. 76. *i.*

(Fig. 76. *i.*)



regard the under voice in the second half of the first measure as a voice-breaking of the example in fig. 76. *k.*

(Fig. 76. *k.*)

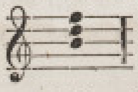


and thus consider the passage throughout this half-measure as being in a manner six-voiced, but elsewhere as only two-voiced; after all it is scarcely worth while in such cases to speak of a plurality of voices produced by the breaking of a single voice. (Compare § 25.)

§ 24.

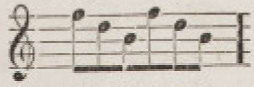
But even if in such and similar cases *several melodies* are not really presented in a single voice, yet the perception of harmony is awakened by striking the several tones of such harmonic combination successively. Thus e. g. an impression of the chord $\overline{b}$, $\overline{\overline{d}}$, $\overline{\overline{f}}$, in fig. 72. *i.*

(Fig. 72. *i.*)



is produced upon our feelings by striking its several tones successively as in fig. 72. *k.*

(Fig. 72. *k.*)



So in like manner one can impress upon the ear the harmonic combinations or pluritones occurring in fig. 73. *i.* on page 145, by carrying a single voice through the elements of the same successively, as in fig. 73. *k.* on page 144. In a similar way the example in fig. 75. *i.* on page 145, awakes the perception of the example in fig. 75. *k.* on page 145, though we do not in any of these examples exactly perceive several distinct melodies of several voices.

This last species of breaking, which only exhibits to us the appearance of pluritones or harmonic combinations as such, but not the progression of several voices, we will denominate in contradistinction from the *voice*-breaking previously described, *a mere harmonic* or *common breaking*.

(b.) *Equivocalness.*

§ 25.

Inasmuch as a breaking voice can in a manner be regarded as several voices, (§ 23.) it follows that such a carriage of a voice is *equivocal;* for, a voice of this character may appear either as one or as several, just according to the point of view in which it may be contemplated.

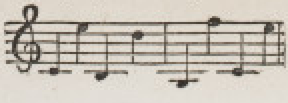
In the first place, the ear is as it were left to its choice, whether to conceive to itself several voices under a voice of this kind, or only a single one,—a choice which, as we have already observed in § 23, is at one time more difficult and at another more easy, because the several voices concealed under the garb of a single one, are sometimes very clearly perceived as several voices, while in other cases one cannot say very decidedly whether the movement of a voice impresses itself on his feelings more as a broken representation of several voices or more as only one single voice.

---

§ 26.

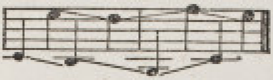
But, *in the second place,* such a voice, even if it be distinctly perceived as a breaking of several voices, becomes by that very fact equivocal in *another* sense; for, in such a case, two different melodic progressions lie concealed in it, namely (1.) the melody of the breaking voice, and (2.) the melodies of the broken voices. In fig. 67. *i.* e. g.

(Fig. 67. *i.*)



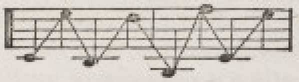
there are two broken voices, of which the under one proceeds from $\bar{c}$, (not indeed immediately, but interrupted by the intermediate $\bar{\bar{e}}$ of the upper voice,) to *b*, and from this *b* in like manner to *g*, while the upper voice in a similar manner goes from $\bar{\bar{e}}$ to $\bar{\bar{d}}$, and from the latter to $\bar{\bar{f}}$, as is shown by fig. 67. *l.*

(Fig. 67. *l.*)



This progression of broken voices may be called *the interrupted* or *broken progression.* But however much one may imagine this broken progression to be a real one, still after all it always holds true that *the breaking* voice, taken by itself, has not in fact this progression, but another and different one; for, its actual progression is immediately from $\bar{c}$ to $\bar{\bar{e}}$, from the latter again to *b*, and thence to $\bar{\bar{d}}$, &c. This second species of progression, (which is exhibited in fig. 67. *m.*

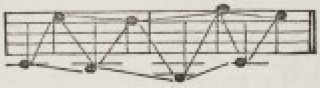
(Fig. 67. *m.*)



by the ascending and descending lines,) may be called *the immediate or real progression* of the voice.

These two different, and, so to speak, simultaneous, concomitant progressions, which are both together represented in fig. 67. *n.*

(Fig. 67. *n.*)



are perceived by the ear at the same time, though indeed the one frequently very much predominates over the other.

In the example above presented, whose condition as to voices is very palpably exhibited to the eye, the ear attends more to the broken progression, while in fig. 72. *k.* p. 146, and fig. 72. *l.* p. 144, it scarcely conceives the slightest impression of a breaking, and hence also of the progressions of broken voices, but rather only perceives the immediate progression of a single one.

---

§ 27.

Now inasmuch as two different species of progression occur at the same time in a breaking voice, such a voice should properly be so carried, that *both* species of progression may be correct and according to rule, and that thus the carriage in *both* relations may be good and flowing. Still it is satisfactory if it be carried right in only one of the two relations, especially in that relation which is most palpable to the ear; and this is the more true, in proportion as one relation preponderates above the other.

(E.)

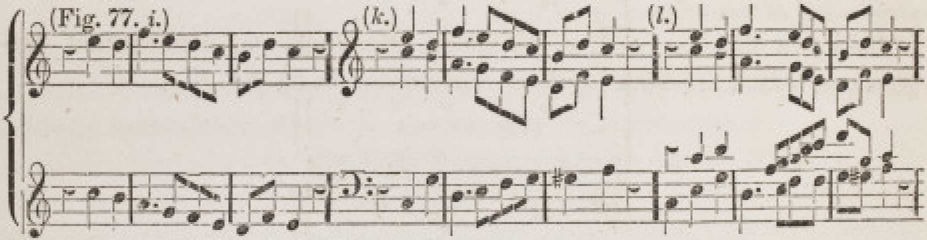
CHARACTERISTIC DIFFERENCE OF A COMPOSITION WITH MANY OR WITH FEW VOICES.

§ 28.

The characteristic difference between a few and a many-voiced composition, consists chiefly in the following things.

(1.) The many-voiced composition is in general more full, ample, and rich in its sound than the few-voiced. (Compare the doctrine of the doubling and the omission of intervals, §§ 70, 72.)

An occasional relieving of a many or a few-voiced composition, is for this very reason sometimes of a peculiarly agreeable effect. Very happy contrasts may often be produced in this way, as may also a gradual increase of effect by at first presenting a passage of perhaps only one or two voices, then adding a third, and afterwards a fourth again, as e. g. fig. 77.



(Compare fig. 54. *i.* p. 126.)

(2.) Another essential difference of a many-voiced composition from one with few voices, consists in the fact that in the texture of the latter, composed as it is of only a few threads, the ear can easily distinguish the air of each voice, whereas in the many-voiced composition, on the other hand, it has to take more pains to perceive distinctly each of the several different voices sounding together, to recognize the progression of each single voice, to follow the thread of each separate melody. (Comp. § 3.)

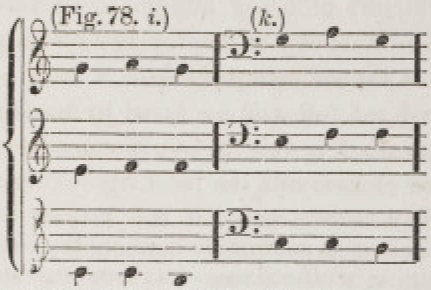
It follows moreover from this last circumstance, that in a many-voiced composition slight deviations from the strict rules for the carriage of a voice are more easily passed by unperceived, than they are in a few-voiced composition; and hence, that in the case of a few voices it is necessary to take more care in their carriage, than in the case of many.

It is moreover another result of the aforementioned difficulty of following the thread of several voices, that our ear becomes qualified only by a gradual process of exercise and artificial cultivation, to recognize and distinguish with facility a greater number of interwoven voices, whose contexture and meaning are to a less cultivated ear unintelligible and incomprehensible.

It is for this reason that musically uncultivated hearers usually find so little pleasure in artificial and elaborate polyphonic musical compositions, and it often happens that even the most cultivated musicians do not fully comprehend *very* elaborate compositions until after several times hearing them, and then for the first time perhaps entirely appreciate the artificial pleasure which they are adapted to convey.

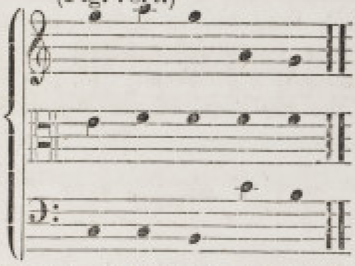
(3.) Only a few voices, perhaps no more than three, can at pleasure be held very closely together or kept very widely apart from each other, (comp. the doctrine of close and dispersed harmony,) and thus moreover can we at pleasure either choose voices of very similar or like compass of tone, as in fig. 78, *i* or *k*,

(Fig. 78. *i.*) (*k.*)



or of different compass of tone, as in fig. 78, *l*.

(Fig. 78. *l.*)



In the last case the harmonic web appears indeed wide, but yet somewhat thin and meagre; in the first case, on the contrary, the web is narrow, but thick and compact. In a many voiced composition, on the other hand, such an option of a close or dispersed position is much more limited. The many-voiced web always inclines, in its own nature, more to breadth, and yet at the same time it is thicker and more compressed than the few-voiced composition.

It follows from this last circumstance, that the many voices thus thickly crowded together in a many-voiced composition must necessarily more frequently meet and cross each other, (§ 5.) than in a few-voiced composition.

(4.) It is, farther, a peculiar attribute of a many-voiced composition, that it not unfrequently gives us trouble to employ so many different voices together in a composition, since it is not always feasible to invent so many distinct melodies and combine them in one harmonic web, each of which should be essentially different from all others, while yet all should be in accordance with the laws of a good melody and of a pure composition. Even five to six voices essentially different from one another and yet all well carried, are seldom to be duly brought together; and still more difficult would it be, to bring together a still larger number.

A few-voiced composition, on the contrary, sometimes brings us into the opposite difficulty, namely that of succeeding with so few voices, that of executing any complete composition with so few materials.

§29.

A four-voiced composition (*quadricinium*) has the advantage that it holds a due medium between too many and too few voices, creating a necessity neither for too many doublings nor for too many omissions,—that it neither involves us in the difficulty of being obliged to operate with too few materials nor in the opposite difficulty of employing in a happy manner too many voices,—that it neither sounds meagerly from a want of the due number of voices, nor is rendered too full and confused by having too many. Hence the four-voiced composition is very properly considered as being in some respects the finest, the richest and the most agreeable to the ear.

It may be remarked, moreover, that the largest share of our musical compositions are in their most essential elements four-voiced. Accordingly, in our orchestra music, e. g. the stringed or bowed-instruments divide themselves, as it were once for all, into four principal classes, namely, into the first violin-voice, the second violin-voice, the viola-voice, and the violono or violoncello-voice, which four voices taken together are usually called *the quartett of stringed*—or *bowed-instruments*, or briefly *the stringed* or *bowed quartett*, or even merely *a quartett*. To the four-voiced composition, moreover, corresponds the division of singing-voices into *four* principal species, mentioned in § 13.

§30.

It is the peculiar property of *the three-voiced composition*, (*tricinium*,) that *it most easily admits of avoiding technical faults in the carriage of several voices*. This accordingly is the species of composition in which beginners most conveniently make their first attempts.

REMARK.

The old music teachers almost uniformly let their pupils commence with *two*-voiced composition, which they considered the more simple and consequently the more easy, and passed from this to the three-voiced, then to the four and more-voiced, as the more complex, and for this reason the more difficult. Many modern teachers, moreover, have pursued this course. Others, on the contrary, cause their pupils to commence with *four*-voiced composition, and, pursuing the reverse order from the foregoing, pass to the three, and then to the two-voiced composition, regarding the latter as a concentrated extract of the former, and considering that operations in it are not at all appropriate to beginners.*

---

* Comp. *Vogler*;—*Kernberger*, I. Bd. S. 174.

The latter idea is indeed a just one. With only two voices, where but two tones can ever be heard at the same time, and where consequently every three-fold chord must lose at least one interval, and every four-fold chord two, and where hence there can never be a full harmony, it is very difficult to construct a piece of music and carry the voices in such a manner that no intervals shall be omitted which cannot properly be omitted; and it is for this reason, that I would never allow a pupil to commence with a two-voiced composition. In the three-voiced composition these difficulties disappear; since, in the case of three voices, the three-fold chord may for the most part be taken complete, and the four-fold chord with the omission of only one interval. In a four-voiced composition, indeed, every thing is still more complete; but here the beginner, instead of encountering only the few omissions occurring in the case of a three-voiced composition, finds himself obliged to contend with far more frequent doublings, and these taken in connection with the general effect of so large a number of voices as four, create too large a measure of complication for the unpracticed learner. His case, if I may use so prosaic a figure, is very much like that of a commencing coachman who should at once begin with driving four horses: his first attempt would certainly succeed far better with two horses, since it is obviously more easy to restrain, properly to turn and to keep in the right path a few horses than many, while yet it is true that a practiced coachman can do more execution with four horses than with only two.

§31.

Two-voiced composition, (*Bicinium*,) is of course somewhat lean in its own nature, but still it may in many cases, even on account of its simplicity, be employed with great effect,—sometimes interchangeably and by way of contrast to other compositions which are more full in their number of voices. (§ 28.)

Much that relates to its peculiar properties has already appeared in the considerations presented in the foregoing paragraphs.

REMARK.

I must here advert to a singular rule which has been laid down by the learned masters, and which is as follows: a genuine two-voiced composition must be so constructed as not to admit of another voice's being added to it. This strange requisition has as little foundation in the nature of the case, as it has evidence to adduce in its defence; and yet we find it laid down in good earnest by the most learned authors.* In fact it is scarcely worth while to adduce a single example in refutation of such a rule. The two-voiced passage presented in fig. 77, *i*, p. 148, however, will not be recognized as a bad one, although it perfectly well admits of the addition of one or two other voices, as in fig. 77, *k* and *l*, p. 148. In like manner also, two-voiced passages appear at first in every fugue, which recur afterwards enriched with the addition of one or more voices, &c.

This rule, therefore, in the form in which it is usually given, obviously does not stand the test. But if the inventors of such a rule would only say so much as this: every two-voiced composition must be so constructed as not to *need*, in order to be good, the accession of a third voice, then the rule would affirm nothing which is not manifestly true, namely that a two-voiced composition must be good *as* a two-voiced composition.

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* As e. g. *Kernberger*, I. Bd. S. 176, etc.

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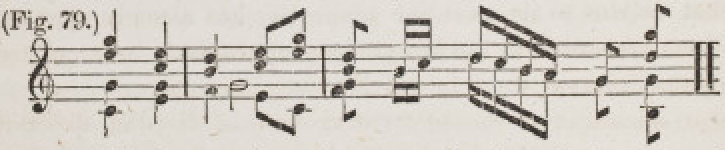
§ 32.

One-voiced composition constitutes an entirely distinct and peculiar species. To this belong not only those pieces and passages of music which are written as a single part and for only a single class of performers, but those also in which all the voices proceed with each other in higher or lower octaves. (§ 15.)

In such one-voiced composition no actual harmony ever occurs (so far as harmony is understood to imply a really simultaneous performance of tones,) because several different tones are not in this case ever really heard at the same time. Still it is not impossible even in one-voiced composition, to give the ear the sensation of harmonies and harmonic successions; for, on the one hand, as we have already seen in § 21, one voice alone can give us the impression of harmonies, and, on the other, a truly musical ear itself, whether the fact arise from nature or from custom, cannot easily hear a melody without conceiving an appropriate harmony to it; and thus it comes to pass that one-voiced composition is in fact by no means exclusively melodic, but is in a certain sense really harmonic, though indeed in respect to harmony it is always more lean and limited than the several-voiced composition. It is moreover sometimes especially characteristic and even powerfully impressive by means of its simplicity. We for this reason not only often introduce individual one-voiced passages, (as e. g. in fig. 79,) into compositions which have otherwise several voices, but we sometimes also compose an entire piece as a one-voiced composition. Thus e. g. in *Salieri's* opera *Palmyra*, the whole march of the Scythian princes is throughout written as a one-voiced composition. So also in my *Lyre and Sword*, [Leier und Schwert,] and in Thomas Korner's *Morning Song of the Free*, [*Morgenlied der Freien*,] all the singing voices and with them the entire accompaniment, consisting of three trumpets, are kept throughout in unison.

(Fig. 79.)



(F.)

THE SCORE.

The several voices which together form a musical composition are either written on the smallest possible number of staves, as we e. g. in order to save room, have often written two, three or more voices on a single staff, in the small musical examples which we have hitherto adduced; or a distinct staff is devoted to each or almost to each, so that the several voices are distributed to an equal number or nearly an equal number of staves. This latter mode of writing music is called *writing in score* or *score-writing*, and the combined mass of staves on which music is thus written is called a *score*, [by the Italians *sparte*, (from the verb *partire* or *spartire*, to divide, to separate, to sever, to part,) also *partitura*, *partizione*, *spartizione:* and by the Germans *partitur*, from the It. *partitura.*] (See Gen. Mus. Tr. § XXIV.)

The several staves on which the voices constituting a piece of music are written, are usually connected together by a kind of clasp or brace, somewhat of the following shape: {. This brace is called also *an accolade*, a name which may well be taken moreover for the united mass of the staves themselves.

As to the most appropriate manner of arranging a score, and particularly in relation to the order in which the different species of voices are to be distributed to the different staves, we will speak farther in the sequel; (probably in connection with the doctrine of instrumentation, comp. Gen. Mus. Tr. § X.)

DIVISION II.

DIFFERENT SPECIES OF MOVEMENTS OF VOICES.

Having thus far considered the different species of voices and attended to the distinction existing between the several voices concerned in a composition, we are naturally now carried by the appropriate order of treatment to a view of the different ways in which voices may move.

Here, also, according to the different grounds of division, different divisions of voices occur, to which we will now severally attend, and will say whatever can be said *in a general way* in relation to the merits or demerits of each species taken by itself.

(A.)

THE MOVEMENT OF A VOICE TAKEN BY ITSELF ALONE.

§ 34.

(1.) *Slow and Quick Movement.*

Considered in relation to time, the movement of a voice is either *quick* or *slow*, according as many tones are passed over in a short time—many steps of the voice are accomplished in quick succession, or the reverse.

As to the merits or demerits of quick or slow movement, and on the question, where the one or the other is to be applied, but very little can in general be determined. The following observations, however, may here be presented.

It may be said in general, that *quick* movement is better adapted to the lightness and volatility of *high voices* than to the gravity of *low ones*, the latter requiring a somewhat slower movement. This fact results chiefly from the following purely technical causes.

(1.) Since, in the first place, the lower a tone is, the slower are its vibrations, (Mus. Tr. § III.) so of course a lower tone, in order to its being capable of accomplishing only a few vibrations and of becoming thereby clearly perceptible and distinguishable, requires a correspondently slower time. But if, on the contrary, the tone be left so quick that the sounding body scarcely has time enough even to get into the due vibration, and much less to accomplish that number of vibrations which are requisite in order to impress upon the ear the exact measure of these vibrations and to give it a distinct recognition of the sound as a clearly defined tone, it will follow as a consequence, that the low sounds thus altogether too rapidly passed over, will appear to him as a mere indistinct and confused noise. (Comp. Mus. Tr. § IV.)

(2.) A second reason is to be found in the fact, that the low tones cannot, from their very nature, be enunciated so rapidly as is requisite in order to the delivery of very quick passages. Indeed,

(3.) Most low-toned instruments are unadapted in their mechanical structure to the performance of very rapid passages, and even low men's voices are usually less pliant and flexible than are the higher voices, as e. g. the soprano voice.

Upon the very excessive and really deplorable clumsiness and unwieldiness of our low toned orchestral instruments, and upon the means of compensating these defects as far as possible, on the one hand, and of removing them, on the other, I have treated at large in another place;[*] and we shall also, in the proper place, namely in connection with the doctrine of instrumentation, recur to the subject in the present work.

(4.) Another cause somewhat less strictly applicable than the three above adduced, which arise from the physical nature of low tones, and which are thus purely materio-technical causes, is of an aesthetic character, and consists in the fact, that quickly running passages do not comport with the gravity and dignity which form a peculiar characteristic of low voices. It is a well established fact, that low tones, in virtue of their weight and fullness of sound, are peculiarly appropriate to the expression of dignity and gravity, with which latter idea we always, as a general principle, associate that of slowness in movement, while, on the other hand, the more volatile higher voices are better adapted to the expression of light and airy movements. Rapidity does not in all cases, however, invest itself with the character of airiness and volatility, nor, on the other hand, is slow gravity the only character of which a low voice is capable. On the contrary, it often produces the most powerful effect to hear the heavy, mighty mass of sound carried by the base, furiously rushing, raging, roaring, howling and thundering along. And the fact that even humorous tirades, odd conceits and facetious turns, are at times in keeping with the base, has been very ingeniously and satisfactorily shown by *Joseph Haydn* in his symphonies and Violin Quartetts; and in the opera we have long since heard with pleasure the hasty, jabbering *parlante* of comic base-rolls.

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[*] Viz. in an article on *Instrumentalbässe bei stark besetzten Tonstücken* [*instrumental bases, in pieces of music strongly manned*,] in Nro. 41, 42, 43, 44, 45, des 18*ten* Jahrganges der Leipziger allgem. Musikal. Zeitung, V. 1816, und Nro. 48 und 49, V. 1817. So wie auch in Erschs Encyklopädie im Art. *Bass*.

On the contrary of what we said above in relation to the peculiar structure and arrangement of our low toned instruments, there are others to which a quick movement is better adapted than a slow. This is the case with all those which are not in their nature capable of holding a long tone, as e. g. the piano-forte, the harp, the guitar, &c. We shall recur to this subject again in connection with the doctrine of instrumentation.

§35.

(2.) *Rhythmically Interrupted Movement.*

Both in respect to time and especially in respect to rhythmical symmetry, the movement of a voice when it is justled from its smooth and onward flow, and is rendered jerking and revulsive by means of what are called rhythmical inversions, (Mus. Tr. § XCIV.) may be termed *a rhythmically interrupted, disturbed*, or *inverted movement.*

§36.

(3.) *Syncopated Movement.*

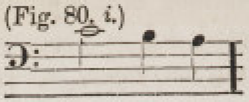
Moreover, in relation to rhythmical weight or accentuation, we say of a voice in which syncopated tones occur, (Mus. Tr. § XCVI.) that it is *syncopated*, that *it moves by syncopated notes*, that *it has a syncopated movement.*

§37.

(4.) *Connected and Separated Movement.*

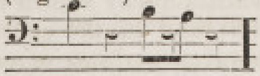
Another peculiar distinction in the movement of a voice depends upon the circumstance whether the latter forms an uninterrupted series or chain of tones, or otherwise. In fig. 80, *i*, e. g.

(Fig. 80, *i*.)



we have a series of tones which follow one another in immediate succession; the first tone continues until the second begins, the second continues up to the time that the third begins, &c. In fig. 80, *k*, on the contrary,

(Fig. 80. *k*.)



we find the same series of tones—*c̄*, *b*, *a*; but here they are separated from each other by intermediate pauses. (*Separated*, *set off from one another*, is what the Italians call *staccato*. Hence the origin of the technical word *staccato* for the idea of tones to be performed separately from each other.) (Comp. § 38.)

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§ 38.

(5.) *Gliding*, *bound or legato*,—*detached or staccato*,—*chopped movement*.

A similar distinction is based on the circumstance, whether the individual tones of a series are performed so as to slide into one another, or are executed in a short and detached manner. That is to say, we apply the terms *gliding movement*, *bind*, *tie*, or *ligature*,—Ital. *legatura*, Lat. *ligatura*, and also *concatenatio*,—to such a close and immediate conjoining of two or more tones successively performed, that there is not only no space left between them, or rather, that the first is continued on to the instant at which the second begins to sound, but also that the two, where it is possible, are performed with a single impulse, and that thus in vocal music, e. g. they are sung to one and the same syllable, while in the case of wind-instruments they are performed with one and the same breath or impulse of the instrument, and on bowed-instruments, as far as practicable, with one and the same stroke of the bow, and indeed on one and the same string.

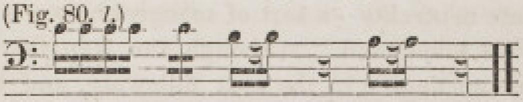
It is readily perceived that such a gliding, connected mode of delivery,—such a complete carrying of the tones into one another, cannot in many species of instruments have place. So it is e. g. in our usual keyed-instruments, where at each successive tone a new tone-producing body must be put into motion. It is true indeed that this tone-producing body is usually permitted to continue its sound up to the point of time at which the next stroke is given, but yet two tones can never be given successively in one stroke, or at a single impulse. Still less practicable is such a gliding and closely connected mode of performance in the case of the harp and other instruments of the same species.

In written music this close conjoining of two or more tones is exhibited to the eye by means of a curve (⌒ or ‿) called *a tie*, *ligature*, or *bind*, drawn from the first to the second note, or over or under the several notes which are to be performed in this gliding manner. Sometimes also the word *legato*, or abbreviated, *leg*. is appended.

The opposite of the gliding movement is formed by *the abrupt*, *detached*, *separated*, the so called *staccato*, *detaché*, which is indicated to the eye by points placed over the notes; and a still higher degree of this mode of performance is furnished by means of the above mentioned *separation by pauses.*

In some cases, not only each tone is performed staccato, but even each note, taken by itself, is several times struck and is as it were broken or chopped up into several pieces, as e. g. in fig. 80, *l*,

(Fig. 80. *l*.)



which case is usually designated by the expression *chopped notes* or *chopped movement.* Where the notes are of a very short rhythmical value—very quick notes, the expression *vibrato,* i. e. vibrating, darting, &c. is applied to the case.

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§ 39.

(6.) *Ascending and Descending Movement.*

As it respects the direction in which a voice proceeds, its movement is either *ascending* or *descending*, according as it proceeds from a tone upwards to a higher or downwards to a lower tone.

Upon the intrinsic value—the good or ill effect of the one or the other of these species of movement, we can say nothing of a general or universal nature, which appropriately belongs to the grammar of musical composition. The fact that in this or that case this or that voice perceptibly requires to be carried upwards, or downwards, or that, in other words, it either *tends* upwards or downwards,—all this is foreign to the proper province of the doctrine of upward and downward movement in general. (See on this subject § 313.)

In addition to what has been said in this section of the upward and downward movement of a voice in itself considered, we shall have occasion to make some farther observations hereafter on the simultaneous upward and downward movement of several voices, or upon the ascending and descending progression of a voice considered in relation to the movement of another voice, (§ 497.)

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§ 40.

(7.) *Skipping and Gradual, Diatonic, Chromatic, and Enharmonic Movement.*

(a.) *Idea and Species.*

As it regards the magnitude of the step which a voice makes, its movement or progression is either *gradual* or *skipping*. Gradual movement is that which a voice has when it moves from any given tone no farther than to a tone standing on the next higher or lower degree of the scale—thus making a step which has only the magnitude of a single second. The movement is said to be *skipping* or *by skips*, on the contrary, when a voice moves by larger intervals than this, and thus when it leaps or skips over one or more degrees of the scale.

When a voice takes the step of a superfluous second, the movement is a kind of intermediate neutrality—a sort of mongrel between the two species of movement above mentioned. Although the step taken in this case reaches only from one degree to the next following, and hence, so far as this circumstance is concerned, is not properly a skip, but merely a single step; yet, after all, since it is *a superfluous* step, i. e. really something more than a mere step, it is usual to regard it rather as a skip than as a single step.

Gradual movement may be of three species. In the first place, it may amount to a so-called large or small *diatonic* degree, and in such a case may be named *diatonic* movement; secondly, it may amount to a superfluous prime or chromatic half-step, (Mus. Tr. § XXXVIII, 1,) and then it is usually termed *chromatic* movement or progression, (Mus. Tr. § XVII, Remark;) and, thirdly, it may amount to a mere enharmonic interval—a diminished second, (Mus. Tr. § XXXVIII, 2,) an interval which in our system of temperament has indeed no real existence and is merely nominal, (Mus. Tr. § XIX,) and the movement or progression in this case is denominated *enharmonic movement.*

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§ 41.

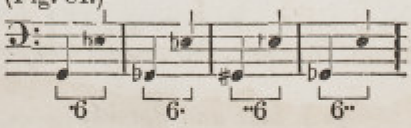
In like manner *the skipping movement* is of different species, according to the magnitude of the skip, i. e. according as the skip is that of a third, a fourth, a fifth, a sixth, &c., and again according as these intervals are large or small, superfluous or diminished.

In written music we can furnish sensible representations of the above mentioned different magnitudes of the steps of a voice, by drawing a clasp (└───┘ or ┌───┐) from one tone to another, and by writing over or under it the number of the interval, (Comp. Mus. Tr. § XL.) as e. g.

•6 6• ••6 6••

G—e♭, G♭—e♭, G♯—e𝄫, G♭—e.

(Fig. 81.)



§ 42.

(b.) *Comparative value of the Gradual and the Skipping Movements.*

As it respects *the comparative value* of the gradual movement and the movement by skips, but little can in general here be said, since the most of what has reference to this point depends upon relations which are to be made known hereafter. In the present connection, therefore, we present only the following brief remarks.

It may be said in general, that the diatonic, gradual movement is the most natural and the most flowing and that whose unbroken thread the ear can most easily follow; for, a voice which moves by skips demands a closer attention of the ear, in order to have its track followed. Hence it follows, that the skipping movement of a voice, though it be in itself entirely without fault, still is not universally and in all cases equally good and appropriate. This subject is amply treated in the fourth volume.

(B.)

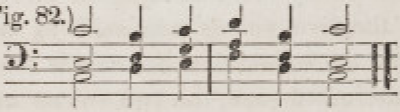
THE MOVEMENT OF A VOICE CONSIDERED IN REFERENCE TO THAT OF ANOTHER.

§ 43.

(1.) Like and Unlike Movement.

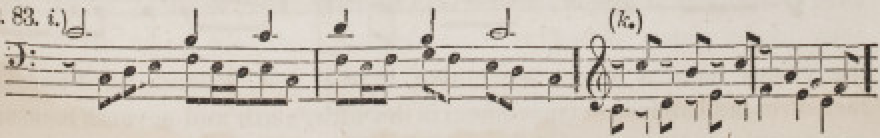
As it regards *the relation of the movement of a voice to the movement of another voice in point of time*, we have the two distinctions of *like* and *unlike movement*. Two voices have *a like movement* when they *proceed simultaneously*, the one accomplishing a step in the same time as another; and their movement is termed unlike when this is not the case. In fig. 82,

(Fig. 82.)



all three voices have a like movement; for, in the same time in which the upper voice goes from c̄ to *b*, the middle voice goes from *e* to *f*, and the base from *c* to *d*. So also all the following steps of all three voices are simultaneous, and thus the movement is alike throughout. In fig. 83, *i*, on the contrary,

(Fig. 83. *i*.)



where the upper voice moves in half and quarter-notes, but the under voice in eighth and sixteenth notes, the movement is unlike.—The movement in fig. 83, *k*, above, is not to be deemed alike, on the ground that the two voices proceed with an equal degree of rapidity, and that within a given length of time the under voice makes no more or fewer steps than the upper voice, while yet these steps are not taken *exactly together and simultaneously with each other*, the steps thus being indeed of like length or duration, but still not co-ordinate and simultaneous.

It is easily perceived, that *the like* movement of several voices affords more *sameness*, uniformity, and hence more unity, while, on the contrary, *the unlike* movement gives us more *variety*, more contrast, and consequently more multiplicity. Voices which have a rhythmically like movement assume thereby a higher degree of mutual resemblance, and, rhythmically considered, melt as it were into one and the same movement; while, on the contrary, if each one of several voices has a different and separate rhythmical movement, each by means of this fact becomes clearly and palpably distinguished from the others, and thus the fact of there being several voices is rendered easily perceptible and the thread of each voice comes to be readily recognized and distinguished from that of the others. (Comp. § 3 1-2.) We have already remarked this fact in § 6, in relation to the example fig. 52, *l*, p. 129; and also the unlike movement is employed in examples figs. 53, p. 131, and 54, p. 126, with the express design that each voice, by giving itself a clearly marked and contrast character, might easily be distinguished from the rest.

§ 44.

(2.) Direct, Contrary, and Oblique Movement.

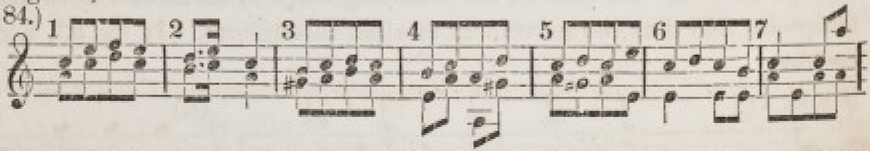
(a.) *Idea.*

If we contemplate the movement of different voices in point of direction, we find that they either both move *in one direction*, i. e. both upwards or both downwards, or that they move *in different directions.*

In the first case the two voices are said to have *a direct movement* (*motus rectus,*) though the expression *like* or *the same direction* would obviously be better; in the other case, the two voices are said to have *an indirect movement*,—a better expression, however, in this latter case would be *different direction.*

In fig. 84,

(Fig. 84.)



the voices have a direct movement in the first, second, third and fourth measures, and an indirect movement in the fifth, sixth and seventh measures.

§ 45.

(*b.*) *Subordinate Species.*

Direct movement may itself be of two different species, according as the two voices *keep at a like distance from each other*, or *the reverse*. In the example above in fig. 84, p. 160, the two voices remain through the first three measures at the distance of a third from each other, but in the following four measures they form with each other at one time a fifth, at another a third, and finally an octave.

The first species of direct movement, namely that in which the two voices always run at a like distance from each other, may be called *parallel movement* or *direction*, while the other is denominated *unparallel*.

To be more particular, the voices in the first and second measures of the above example are at one time separated from each other by a large third, and at another by a small third; whereas in the third measure, the upper voice forms with the under voice exclusively small thirds. Thus, in the first two measures the voices are parallel only in relation to *the numerical* names of the intervals, (General Music Teacher, § XXXIII,) while in the third measure they are parallel also in relation to the accessory names or the actual *size* of intervals. (General Music Teacher, § XXXV.) In this latter case, therefore, the movement may in a special sense be termed *parallel* or *strictly parallel movement*.

Voices which move parallelly to each other,proceed at one time at a greater distance apart, and at another time at a less. In fig. 84, p. 160, the two voices run at the distance of thirds in the third measure, and indeed at the distance of small thirds. In fig. 59, *i.* p. 140, the two upper voices move in parallel fourths, the two outer voices in parallel sixths, &c.

Indirect movement also—movement in different directions, may again be of two different species. That is to say, the voices can either move in opposite directions, i. e. the one up and the other down,—or the one may remain stationary—neither ascending nor descending, while the other proceeds either upwards or downwards. Musicians denominate the former *contrary movement*, (*motus contrarius*,) while they term the latter *oblique movement*, (*motus obliquus*.) (Some, particularly the English writers, not inappropriately designate this species of movement by the appellation *half-movement* or *half-motion*.) In fig 84, p. 160, contrary movement may be found in the fifth measure, and oblique movement in the sixth and seventh measures.

In fig. 79, p. 152, the two upper voices proceed together in direct movement, while the base, considered in reference to the two upper voices, proceeds in contrary movement, and all these three voices have an oblique movement as compared with the tenor. (§ 14.)

It is readily perceived, that direct and contrary movement is always *like movement*, while oblique movement is always *unlike movement*.

Moreover, every movement of two unparallel voices is either *converging* or *diverging;* in other words, two voices which do not keep at a like distance from each other, and which accordingly have either a contrary or an oblique, or a direct though not parallel movement, either *approach one an other* or *recede from each other;* in the first case they are said to be *converging*, i. e. approaching each other, while in the second case, on the contrary, they are denominated *diverging*, i. e. going apart from each other. In fig. 84, p. 160, e. g. the movement from the first to the second eighth in the fourth measure is converging. In the sixth measure, from the first to the second eighth, the voices diverge, and from the second to the third eighth they converge.

Strictly considered, the different species of movement in the case of two voices may, as it respects their direction in reference to each other, be classified in the following manner:

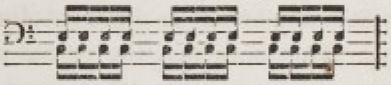
The movement of two voices is either

I. *Parallel*, and that either
  (A.) *Strictly parallel*, or
  (B.) *Not strictly parallel*,
II. Or their movement is *not parallel*, and then it is
  (A.) *Direct* (without being parallel,) or
  (B.) *Indirect*, and that under two varieties:
    (1.) *Contrary movement*, or
    (2.) *Oblique movement*.

Every unparallel movement is moreover either
  (A.) *Converging*, or
  (B.) *Diverging*.

I merely add in passing, that many of the musical literati are in the habit of understanding under the expression *parallel movement* such cases as the following, in fig. 85,

(Fig. 85.)



But one must have a very singular idea of movement, to denominate the fixed position of two things which do not change their place *a parallel movement*. Or otherwise one must imagine such a parallel movement to be something like that of a company of infantry at the word of command: "*Mark time*,—march," in which case every man moves his feet and acts as if he were marching, and yet without moving at all from his position. But certainly no man will say of himself in such a case, that he moves or marches parallel with the man next him.

---

§ 46.

(*c*.) *Characteristic difference of Direct and Indirect Movement.*

In relation to *the characteristic difference* of direct and indirect movement, it can only be said in general, very much as we have already remarked in relation to like and unlike movement, that the direct movement of several voices has more sameness and uniformity, and hence more unity, while the indirect movement, on the contrary, has more variety, more contrast, and consequently more multiplicity. Voices which have a direct, and especially a parallel movement, are made thereby very closely to resemble each other and in this respect blend as it were into one and the same movement, while two voices, on the contrary, one of which ascends while the other remains stationary or descends, become by this means more distinctly marked and more clearly distinguishable from each other. (Compare § $3\frac{1}{2}$.) It is for this very reason, e. g. that the contrary and oblique movements are used as much as possible in fig. 53, p. 131.

In addition to this general remark, there is still much that is worthy of observation relative to the good or bad properties of the different species of direct and particularly of parallel movement; for certain varieties of these are really faulty and of bad musical effect, as is the case e. g. *in most instances* of the parallel progression of two voices at the distance of fifths.

We cannot however go into the discussion of this subject in the present place, because, in estimating the merits of such progressions of voices, very much depends upon other circumstances which are not yet brought into view. We shall not, therefore, be able to complete the doctrine of *forbidden parallel progressions* until hereafter.

CHAPTER II.

INSTRUCTION IN HARMONY.

Having thus far taken a distinct and separate view of *the single series of tones* which form a musical composition, we will now turn our attention to the different harmonies or chords as such, and will inquire into their peculiar properties.

DIVISION I.

OF PLURITONES, OR CHORDS IN GENERAL.

§ 47.

(A.)

THE MORE EXACT DEFINITION OF PLURITONES AND OF THEIR ELEMENTS.

In accordance with what was said in § 1 we understand by the term *pluritone* or *chord in general*, every simultaneous sounding of several tones.

The tones themselves which sound together, or, in other words, the elements of a pluritone, are usually called *the intervals* of the same. (Compare General Music Teacher, § XXXII.) Thus, if e. g. the tone *A*, its third *c*, and its fifth *e*, sound together, then the tones *A*, *c*, *e* are the intervals* of the chord.

---

*It will be observed that the word interval is employed here in rather an unusual and figurative sense, not to signify a space or distance between different tones of the scale, but these tones themselves. It is indeed rather a natural transition of ideas, to pass from that of a given distance between tones to that of the tones themselves as forming the boundaries of that distance, and thus giving origin itself to the distance. It is really but tracing the common and obvious relation of effect to cause. It is but natural, therefore, that when we have given the name *interval* to *the effect*—the space lying between two different tones of the scale, we should spontaneously and insensibly transfer this name to *the cause* of such space—the tones themselves, which, as limiting points, are necessary to its existence. The two ideas seem to be very intimately associated, and this probably is the reason why both in German and in English it has become a very general, not to say a universal usage, to employ the term *interval* in the two significations, first, of *distance between tones*, and, secondly, of *the tones themselves which form the boundaries of that distance*. Such is the constant usage of the author, and attention need only be called to the fact, in order to remove all possible embarrassment from the use of the word in these two different senses; for, the connection will always determine which of the two meanings is intended in any particular case.
Tr.

The lowest tone of any simultaneous group is also called *the base* or *fundamental tone* (§ 4.) and, in contradistinction from it, the expression *the intervals* is sometimes employed to denote *merely the remaining tones.* In this sense, the-tone *A* in the above example is called *the base tone*, while the tones *c* and *e* are called *the intervals.*

The doctrine of the different chords and their properties will constitute a prominent part of our Theory.

§ 48.

(B.)

THE BROKEN MANNER OF STRIKING THE INTERVALS OF A PLURITONE.

Though we here uniformly speak of simultaneous combinations of tones—simultaneous pluritones, still we do not understand under such a mode of expression solely and exclusively an actually simultaneous sounding of several tones, but those also which are conceived of as sounding simultaneously. Such, as it were, imaginary, not real, simultaneous combinations of tones, we have already become acquainted with under the name *breaking*, or *breaking of a voice.* (§ 21.)

DIVISION II.

FUNDAMENTAL HARMONIES.

§ 49.

(A.)

IDEA.

The variety of chords occurring in music is almost infinite. Indeed, it would be incomprehensible, were it not for the fact that many of these, though different from one another, have still more or fewer essential characteristics in common. Chords are thus arranged in classes according to the general features which they may possess in common, and then those which resemble each other on particular points are regarded as subordinate species of one and the same class, or, as it is usually expressed, many harmonies are referred to a few *principal species*, *fundamental harmonies* or *fundamental chords.*

We will here, in the outset, enumerate the fundamental harmonies to which, in the course of our treatment, we shall refer all the musically possible simultaneous combinations of tones.

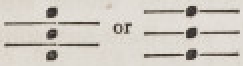
§ 50.

(B.)

ENUMERATION OF THE FUNDAMENTAL HARMONIES.

The various chords which may occur in music can most conveniently be referred to *two principal species* of fundamental harmonies, namely, to *three-fold chords* or *three-toned harmonies*, and to *four-fold chords* or *four-toned harmonies*. The latter are sometimes also called *seventh-harmonies* or *chords of the seventh.*

(α.) *The three-fold chord* or *three-toned harmony* consists of three tones, namely a base tone, a second tone which is a third higher than the base tone, and a third tone which is a fifth higher than the base tone; or, in other words, it is the combination of a tone with its third and its fifth. The following figure exhibits an occular view of such a harmony.

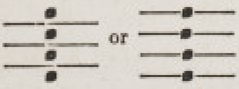


$$\text{as e. g. } \left\{\begin{array}{c} d \\ B \\ G \end{array}\right. \text{ or } \begin{array}{c} e \\ c \\ A \end{array} \text{ or } \begin{array}{c} f \\ d \\ B \end{array} \text{ \&c.}$$

In such a fundamental chord, the base tone is called *the fundamental tone* or *fundamental note*, and sometimes *the root*, while the two others (the third and fifth of the fundamental tone) may be termed *accessory tones.*

The third of the fundamental tone is sometimes denominated *the mediant*, and the fifth *the dominant*. We shall not, however, use these two terms to designate these ideas, especially the last, (namely the word *dominant* for the fifth of the three-fold chord,) inasmuch as together with that idea it carries also a particular meaning beside;—more on this subject hereafter.

(β.) *The harmony of the four-fold chord* or *the seventh harmony* consists of four tones, namely a fundamental tone, its third, its fifth, and its seventh:



$$\text{as e. g. } \left\{\begin{array}{c} f \\ d \\ B \\ G \end{array}\right. \text{ or } \begin{array}{c} g \\ e \\ c \\ A \end{array} \text{ or } \begin{array}{c} a \\ f \\ d \\ B \end{array} \text{ or } \begin{array}{c} b \\ g \\ e \\ c \end{array} \text{ \&c.}$$

Thus we find in a four-fold chord a fundamental or principal tone and *three* accessory tones.

If we apply the above rather abstractly presented ideas and representations to our system of tones, we find that different species of three-fold and four-fold chords may occur in the series of the natural tones. (General Music Teacher, § XVII.) We find in that series of tones

(α.) (1.) Three-fold chords which consist of *a fundamental tone*, *its large third*, and *its large fifth* (i. e. *pure* fifth,—General Music Teacher, § XXXVI,) namely:

$$\begin{array}{ccc} g & c & d \\ e & A & B \\ c & F, & \text{and } G, \end{array}$$

or, to present these chords as we shall hereafter be in the habit of doing, with less waste of room: [*c e g*], [*F A c*], [*G B d*].

It is usual to denominate harmonies of this species *large* or *major three-*

fold harmonies, or, more briefly, *large three-fold chords*.* Of the same species are the three-fold chords: [*d f♯ a*], [*e♭ g b♭*], [*e g♯ b*], &c.

(2.) But we also find in the series of the natural tones another species of three-fold chords, namely such as have *a small third* and *a large fifth:* [*A c e*], [*d f a*], [*e g b*]. These are termed *small* or *minor*.—Of the same species are: [*c e♭ g*], [*F A♭ c*], [*G B♭ d*], &c.

(3.) We find yet a third species of three-fold chord, consisting of a fundamental tone, *a small third* and *a small* (diminished) *fifth;* [*B d f*]. This harmony is called *a diminished three-fold chord*. That is to say, it has not, like the small three-fold chord, merely a small third, but also a small fifth; and thus it is in a manner still smaller than small,—a circumstance from which the name *diminished* three-fold chord seems to have arisen. Many call it, though not very appropriately, the *false*, (General Music Teacher, § XXXVI, *d.*) *dissonant*, *imperfect* and *improper three-fold chord*.—Of the same species are the harmonies [*G♯ B d*], [*d f a♭*], [*e g b♭*], [*A c e♭*], &c.

(β.) We find in like manner *four different species of the four-fold chord*, namely:

(1.) One, consisting of a fundamental tone, *its large third*, *its large fifth*, and *its small seventh:* [*G B d f*]. One may conceive it to himself as a large three-fold chord with a small seventh.—Of the same species are: [*E G♯ b d*], [*D F♯ A c*], [*c e g b♭*], and the like.

(2.) A second species, consisting of a fundamental tone, *its small third*, *its large fifth*, and *its small seventh:* [*A c e g*], [*D F A c*], [*E G B d*], and thus as it were a small three-fold chord with a small seventh.—Other like harmonies are: [*c e♭ g b♭*], [*G B♭ d f*], [*E♭ G♭ B♭ d♭*], &c.

(3.) A third species, consisting of a fundamental tone, *its small third*, *its small fifth*, and *its small seventh:* [*B d f a*],—as it were a diminished three-fold chord with a small seventh.—Other like harmonies are as follows: [*F♯ A c e*], [*E G B♭ d*], [*A c e♭ g*], [*c e♭ g♭ b♭*], [*E♭ G♭ B♭♭ d♭*], &c.

(4.) We find moreover a four-fold chord with *a large third*, *a large fifth*, and *a large seventh:* [*c e g b*], [*F A c e*],—as it were a large three-fold chord with a large seventh.—Other like harmonies are the following: [*G b d f♯*], [*D F♯ A c♯*], [*B♭ d f a*], [*A♭ c e♭ g*], [*E G♯ B d♯*], &c.

The four varieties of four-fold chords above enumerated have not, like the three sorts of three-fold chords, each its own particular name. The first, indeed, (the one that has a large third, a large fifth, and a small seventh,) is often called *the dominant chord;* but this appellation, as we shall see hereafter, has too much of a special relativeness to be duly clear and unequivocal.—*Vogler*† proposes the name *entertaining seventh*, (*unterhaltungs-Siebente*,) because the seventh of this chord "agreeably entertains the ear;"—this appellation however has met with no acceptance.—Others again called it *the essential seventh chord;*—but this name is sometimes used

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*On the use of the terms *large* and *small*, instead of *major* and *minor*, see General Music Teacher, § XXXVI, and Note by the Translator, p. 54.—Tr.

†In s. Tonwissenschaft § 24.

in application also to every other four-fold chord, and thus in reference to those described under Nos. 2, 3 and 4 above;—it is therefore too ambiguous to be employed as a characteristic title.—Since however it is very desirable that *this particular* four-fold chord, at least, should have a distinct name of its own, inasmuch as it is the principal chord of the kind, we will accordingly denominate it *the principal four-fold chord*, or *principal harmony of the seventh*, and its seventh *the principal seventh.*

In contradistinction from *the principal four-fold chord*, we will denominate the other three *secondary* or *subordinate four-fold chords.* But in applying particular names to these three chords, we will hereafter call that which has

a small third,
a large fifth, and
a small seventh,

simply *a four-fold chord with a small third and a large fifth*, because it is *the only one* that has a small third and a large fifth,—or soft four-fold chord, because it consists as it were of a small or soft three-fold chord combined with the seventh.—The chord which has

a small third,
a small fifth, and
a small seventh

we will hereafter denominate *the four-fold chord with small* (or diminished) *fifth*, because no other has a small or so called diminished fifth;—and finally the chord which has

a large third,
a large fifth, and
a large seventh,

we will, for similar reasons, briefly denominate *the large four-fold chord*, since this is *the only* fundamental harmony that has a large seventh.

The following general view may serve as a relief to the memory:

3. THREE-FOLD CHORDS:
  1. *Large three-fold chord*,
  2. *Small three-fold chord*,
  3. *Diminished three-fold chord.*

4. FOUR-FOLD CHORDS:
  4. *Principal four-fold chord*, (to be conceived of as the large three-fold chord with •7.)
  Secondary four-fold chords:
  5. *Soft four-fold chord*, (small three-fold chord with •7.)
  6. *Four-fold chord with* •5, (diminished three-fold chord with •7.)
  7. *Large four-fold chord*, (large three-fold chord with 7•.)

A fundamental harmony consisting of *small* or *diminished* three-fold chords with a large seventh, is not to be found in the series of the so-called natural tones.

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§ 51.

To the seven principal species of harmonies above enumerated may be referred all the various combinations of tones that can occur in music.

The sequel will show, that every harmonic combination admits of being regarded as springing from one of these seven fundamental harmonies, and of being referred to one of them and explained as a modification of it, however varied and complicated it may appear; or, if there be a combination which can be referred to *none* of these species, it is one that always sounds repulsively to the ear.

It not unfrequently happens, that one and the same combination of tones can be explained according to more than one species, and is consequently *equivocal.*

In cases where thus more than *one* explanation of one and the same combination of tones is possible, one need not rack his brains on the question, according to *which* of these several possible species he is to explain it. If he finds himself justified by *more than one* species, so much the better; every correct mode of explanation is good and sufficient, and among several the choice is to fall merely upon the most simple and most usual. (Com. § 190.)

REMARK.

The musical literati differ as much upon the number of their fundamental harmonies, as botanists do upon the number of their classes, or grammarians upon the number of the German declensions. Men dispute and contend and quarrel on the question, how many fundamental harmonies there are,—a contention which, as it occurs to me, is about as illimitable as is that on the question, how many *genera plantarum* [genera of plants] there are in nature, when nature herself certainly knows nothing of all the *genera* which have been invented by human ingenuity.

The question here cannot be: how many *genera* there probably *are*, but only: into how many the species admit of being *most conveniently* arranged, in order to bring the greatest possible number of species agreeing with one another in the largest number of common characteristics under the smallest possible number of principal classes. They are all, in fact, merely different ways of conceiving of the thing.

I certainly will not contend with a man, if he assumes more or fewer fundamental harmonies, than myself. A-priori demonstration cannot here be admitted. The problem only is, to find a division which is most favorable to a just and easy deduction of the instructions to be exhibited. It is not to be claimed of me, therefore, to go into any previous justification of my course in giving just these *seven* fundamental harmonies, and in not giving also a so-called superfluous, a large or major diminished, a small or minor diminished or doubly diminished three-fold chord,—in giving no seventh chord with small third, large fifth and large seventh, none with diminished third, small fifth and small seventh, or with small third and fifth and diminished seventh,—in giving no ninth and eleventh chord,—in not including in my list that chord of learned name—*the thirteenth-eleventh-ninth-seventh chord*,—in not, with *J. G. Schicht*,* giving three-fold chords also whose fundamental note is the principal dissonance;—in not, with *Justin Heinrich Knecht*,† giving three thousand and six hundred chords, among which only seven hundred and twenty dissonant *radical chords* occur, there being among the

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*In S. "*Grundregeln* der Harmonie," § 19 u. 20.

†In S. "*Elementarwerk* der Harmonie," Seite 262.

latter, e. g. "great-small-great agreeable thirteenth-eleventh-nine-seventh chords, three-fold small agreeable thirteenth-eleventh-ninth-seventh chords, small diminished small sad-sounding thirteenth-eleventh-ninth-seventh chords," and these too as *original* or *primitive chords*, while the whole catalogue would fill more than fifteen pages quarto. But is it still asked, why none of all these fine things here?

Because, as the sequel will show, my seven fundamental harmonies are *perfectly adequate* to the explanation of all the harmonic combinations occurring in music, and it certainly is better to make enough out of a little, than out of much. As for the rest, the reference of all possible harmonies to *these seven* fundamental harmonies is the most favorable to the due deduction of the theorems [rules, principles,] to be given. I will take occasion at some time in the sequel to call attention to this subject. For instance, it is not particularly consistent and legitimate, to attempt to construct fundamental harmonies from and upon certain (why then not upon *all?*) accidentally raised (why not equally well accidentally lowered?) tones of the scale, as e. g. [B d♯ f], [B d♯ f a], [D♯ F A], [D♯ F A c], [C E G♯], [C E G♯ B], and the like.—Such far-fetched *fundamental* harmonies, formed from *accidental* elements, are to us not only entirely superfluous, but they would form a very odd contrast to the consecutive train of deductions with which we hereafter make it a principle to investigate the idea of fundamental harmonies, and to pursue and develope from the relative harmonies the ideas of key, scale, and the appropriate fundamental harmonies of a particular scale,—a process which will, moreover, prove both the superfluousness and the inanity of those species of fundamental harmonies. (Comp. the remarks on § 88 and 95; and also § 387.)

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§ 51 *bis.*

If we turn our attention to the intervals formed by the different elements of these fundamental harmonies, as these elements are in § 50 arranged above one another by thirds, we shall find, that

(1.) The tones of which *a three-fold* chord consists form among themselves *thirds* and *fifths*. That is to say, the fundamental tone and its third form between them the interval of a third; the third and fifth of the fundamental tone form with one another, likewise, a third; while the fundamental and its fifth constitute the interval of a fifth. These intervals, moreover, according as the three-fold chord is large, small, or diminished, are at one time large, and at another small,—(never diminished or superfluous.) In the large three-fold chord [C E G], e. g. E is at the interval of a large third from C, G is at the distance of a small third from E, and of a large fifth from C.—In the small three-fold chord [C E♭ G] the tones C—E♭ form a small third, but the tones E♭—G constitute a large third, and C—G a large fifth.—In the three-fold chord [C E♭ G♭] are found two small thirds; C—E♭ and E♭—G♭, and a small fifth C—G♭.

(2.) If we in like manner investigate the distances of the tones in the *four-fold* chords, we shall find thirds, fifths and sevenths, and these again will be, as before, at one time large, and at another small, (never superfluous or diminished.) In the principal four-fold chord [C E G B♭], e. g. the tones C—E form a large third, but E—G, G—B♭ small thirds, C—G a large fifth, but E—B♭ a small fifth; and finally, C—B♭ form a small seventh. In the secondary four-fold chord [C E♭ G B♭], C—E♭ form a small third, E♭—G a large third, G—B♭ again a small third, but C—G and E♭—B♭ large fifths and C—B♭ again a small seventh. In like manner we find in the four-fold chord [C E♭ G♭ B♭, large and small thirds, large and small fifths, and a small seventh; in the large four-fold chord [C E G B], we find large and small thirds, large fifths, and a large seventh.

§ 52.

(C.)

METHOD OF DESIGNATING THE FUNDAMENTAL HARMONIES.

In order to have a distinct and peculiar sign for each of the seven fundamental harmonies above described, we will hereafier make use of the following method:

(1.) For designating *a large three-fold harmony*, we will use a *large* German* letter. A large German $\mathfrak{C}$, e. g. shall denote the large three-fold chord of C; $\mathfrak{C}$♯, $\mathfrak{D}$, $\mathfrak{E}$♭, &c. shall be taken as representatives of the large three-fold chords of C♯, D♯, E♭, &c.

(2.) To designate the harmony of *the small three-fold chord*, we will take *small* German letters, as e. g. $\mathfrak{a}$, $\mathfrak{c}$, $\mathfrak{c}$♯, $\mathfrak{d}$, $\mathfrak{c}$♭, &c., which will accordingly stand as representatives of the small three-fold chords of a, c, c♯, &c.

(3.) To denote *the diminished three-fold chord*, we will use the same *small letters with a little cypher prefixed*, as e. g. $^{\circ}\mathfrak{h}$, $^{\circ}\mathfrak{c}$, $^{\circ}\mathfrak{d}$, $^{\circ}\mathfrak{g}$♯, $^{\circ}\mathfrak{c}$♭, &c.

(4.) In order to represent *the principal four-fold chord*, inasmuch as it consists of a large three-fold chord with a small seventh, (§ 50 b. 1,) we will use a large letter with the figure 7 annexed to it; e. g. $\mathfrak{G}^7$, $\mathfrak{C}^7$, $\mathfrak{C}♯^7$, $\mathfrak{D}^7$, $\mathfrak{A}^7$, $\mathfrak{E}♭^7$, &c.

(5.) For *the small four-fold chord*, (with small third, large fifth and small seventh,) we will, for similar reasons, employ a small letter with a figure 7, e. g. $\mathfrak{a}^7$, $\mathfrak{c}^7$, $\mathfrak{c}♯^7$, $\mathfrak{d}^7$, &c.

(6.) For *the four-fold chord with small fifth*, we will use a small letter with a cypher (°) and the figure 7, thus: $^{\circ}\mathfrak{h}^7$, $^{\circ}\mathfrak{c}^7$, $^{\circ}\mathfrak{d}^7$, $^{\circ}\mathfrak{g}♯^7$, $^{\circ}\mathfrak{f}♯^7$, &c.

(7.) Finally, for *the four-fold chord with large seventh*, we will employ a large letter and a figure 7 with a stroke through it ($^{\not 7}$); as e. g. $\mathfrak{C}^{\not 7}$, $\mathfrak{C}♯^{\not 7}$, $\mathfrak{F}^{\not 7}$, $\mathfrak{B}^{\not 7}$, &c. or with the stroke through top part of the 7 thus $\mathfrak{C}^{\bar{7}}$ &c.

While I here, as I shall also do several times more in the sequel, introduce new modes of designation, I still by no means claim to have these signs adopted by others and brought into general use; but, on the contrary, my only aim in employing them is to procure thereby a convenient and intelligible language of signs between me and my readers, and these signs and appellations will have fully accomplished their object, so soon as *we*† only understand *one another* thereby. But the fact that the signs, appellations and other modes of representation chosen by me do accomplish this object, seems to be shown by the circumstance that immediately after the appearance of the first volume of my theory, other writers adopted them and appropriated them to themselves, as I observe in the preface to the third volume.

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* For the convenience of the English reader who may not be familiar with the forms of the German letters, the old English black letters will be used in this case in the translation, instead of the German. Tr.

† I will here take occasion once for all to remark, that under the terms "*we*" and "*us*," I never understand *myself*, but always *my readers and myself*, always conceiving myself to be going hand in hand with them. I certainly am far from wishing to give myself by such a plural form of speech a childish gravity and dignity of appearance.

If it be wished still farther to generalize the idea of the mode of designation here introduced, a large three-fold chord might be designated in general by $\mathfrak{X}$ or $\mathfrak{Y}$, a small three-fold chord by $\mathfrak{x}$ or $\mathfrak{y}$, a diminished three-fold chord by $°\mathfrak{x}$, and the four varieties of four-fold chords might be represented $\mathfrak{X}^7$, $\mathfrak{x}^7$, $°\mathfrak{x}^7$, and $\mathfrak{X}^{\not 7}$. (Comp. § 121 and 153.)

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§ 53.

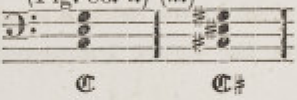
(D.)

EXERCISES.

The unpracticed may now go through all the seven fundamental chords on all the tones, in order thus to make them familiar and easy to themselves; and they may either write them down by themselves, or strike them on a piano-forte, at the same time naming the intervals, as e. g.

Fig. 86, *i*, below: Large three-fold chord of $\mathfrak{C}$; *c* is the fundamental tone, *e* is the large third, *g* the large fifth:—Fig. 86, *k*: Large three-fold chord of $\mathfrak{C}\sharp$; *c*♯ is &c.

(Fig. 86. *i*.) (*k*.)



and so on through all the tones;—then the small three-fold chord, likewise through all the tones;—then in like manner the diminished three-fold chord; after this, the four-fold chords.

It is no matter, though many of the fundamental chords above given, particularly those with large seventh, when thus struck alone by themselves, sound very harshly and offensively to the ear. They stand together here, as words do in a dictionary, or as colors do on the pallet, without connection, and consequently without meaning. They obtain significancy and expressiveness only by being artificially formed into a continuous chain, so as to produce a musically connected sense.

I would moreover advise those who are not yet fully practiced, to intonate each of the seven fundamental chords on any note (no matter on which) in singing (or even by mere whistling), without previously striking it on an instrument. The power of thus intonating every harmony is the best proof that one has a genuine internal feeling or perception of its appropriate sound. We not unfrequently meet with beginners who know how to rehearse a multitude of learned matters in relation to all possible so-called consonant and dissonant chords and intervals, &c., but who are still wonderfully non-plussed when they are called upon to give the interval of a large, or a diminished three-fold chord, and the like, by the ear.

With a like view, I would farther recommend that one hear this and that chord struck upon an instrument by another person, without looking at the fingers of the player, for the purpose of proving whether he can recognize the chord by the ear—whether a large or a small or a diminished three-fold chord, a principal four-fold chord, or whatever else it may be.

DIVISION III.

TRANSFORMATION OF FUNDAMENTAL HARMONIES.

§54.

I have said that every harmonic combination possible in music admits of being referred to one of the seven fundamental harmonies above given as the original or primitive forms of all harmonies. We will now attempt this reference; we will go through the different possible harmonic combinations and see how each of these runs into some one of our seven principal species, and differs from others of the same species only as one mode of playing is different from another, and is to be regarded as it were only as an unessential transformation of one of these original forms.

(A.)

CHANGES OF POSITION.

(1.)

TRANSPOSITION IN GENERAL.

§55.

In all our exhibitions of the chords thus far, they have uniformly appeared in such a position, that the fundamental tone was situated the lowest, next above this was the fundamental third,* then the fundamental fifth, and above these the fundamental seventh; or, in other words, the intervals were uniformly placed above one another by thirds.

It is but natural to reckon two harmonic combinations or chords which consist radically of the same tones, only in a somewhat varied position, to one and the same species, as e. g. the chord [C E G] to the same species as [c e g], or [$\bar{c}$ $\bar{e}$ $\bar{g}$], &c., and the chord [C G e] to just the same species as [C E G], or even [C e g], or [E c g], or [G c e], &c.; for, all these harmonies consist substantially and in principle of the same tones, with the difference only that the one or the other is on a larger or a smaller scale; and thus they are not essentially different from one another, but the one is as it were only a variation of the others, or merely a different mode of performing them; or, in other words, the positions or forms [E c g], [G e c̄], and the like, are as it were only transformations of that which we have taken as *the original form* of the harmony 𝕮, namely the position [C E G.]

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*The expression *fundamental third* means here that tone which lies at the distance of a third *from the fundamental tone,* in contradistinction from the same interval reckoned from some other point, as e. g. from the fifth to the seventh, or from the third to the fifth, &c. The word *fundamental* is repeatedly used in this way, and always means merely that the interval to which it is applied is reckoned from the fundamental tone of the chord. TR.

Such an altered position of the tones constituting a harmony, is designated by the general term *transposition* or *inversion* of a harmony.

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§ 55 $^{bis.}$

If, in like manner as we have inquired in § 51 $^{bis.}$ what intervals the different elements of the fundamental harmonies, taken in the original form in which they there occur, make with one another, we will now direct our attention to the different distances of tones which occur between all the elements of the harmonies *in every other position*, we shall find here a far greater multiplicity of the distances of tones from each other. While, namely,

(1.) We found, in § 51$^{bis.}$ that the intervals of the three-fold chords, in the original position there assumed, formed only thirds and fifths, as e. g. the intervals of the harmony [C E G] only a large third C—E, a small third E—G, and a large fifth C—G, we find, in case we conceive the same harmony to be, say, in the position [E c g], between the tones E and c the distance of a small sixth, (as the inversion of the large third C—E); but in the position [G c e] also a •4 G—c, (the inversion of the 5• C—G), and the 6• G—e, (the inversion of the •3 E—G.)

In like manner we find between the elements of the other three-fold harmonies (𝔵 or °𝔵, see § 52,) at one time large, and at another time small thirds and fifths, and their inversions—large and small sixths and fourths.

In the case of three-fold harmonies, neither a second, nor a seventh, nor any superfluous or diminished interval ever occurs; (and from this circumstance, by the way, it may be seen, that if two tones form with each other *any other* distance than a large or small third, fourth, fifth, or sixth, we may be certain that they are not two intervals of a three-fold harmony, but that at least one of these tones is something else.)

(2.) So also we found in § 51 $^{bis.}$ that the intervals of *the four-fold chords*, taken in the original position assumed in § 50, formed only thirds, fifths and sevenths, as e. g. the intervals of the harmony [C E G B♭] only the large third C—E, the small thirds E—G and G—B♭, the 5• C—G, and the •5 E—B♭, and finally the •7 C—B♭. But if we conceive to ourselves the same harmony in a position where perhaps E lies in the base, as e. g. [E c g b♭], we find between the tones E and c (as the inversion of the 3• C—E), the distance of a •6;—so also in the position [G c e b♭] the •4 G—c, (the inversion of 5• C—G), and the 6• G—e, (the inversion of the •3 E—G;) and in the position [B♭ c e g] the 2• B♭—c, (the inversion of the •7 C—B♭,) the 4• B♭—e, (the inversion of the •5 E—B♭,) and the 6• B♭—g, (the inversion of the •3 G—B♭.)

In like manner we find between the elements of the other four-fold harmonies ($\mathfrak{x}^7$, $^\circ\mathfrak{x}^7$ and $\mathfrak{X}^7$,) large and small thirds, fifths and sevenths, and their inversions—small and large sixths, fourths and seconds.

Here again we no where meet with a superfluous or a diminished interval; (from which fact, by the by, it appears, that two tones which form any other distance with each other than a large or small second, third, fourth, fifth, sixth or seventh, (thus, for instance, a superfluous or diminished interval,) certainly are not two intervals either of a three-fold or of a four-fold harmony, and consequently it is certain that at least one of them is foreign to the harmony.)

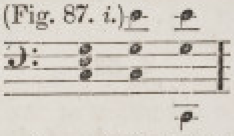
(2.)

SPECIFIC CHANGES: INVERSION.

§ 56.

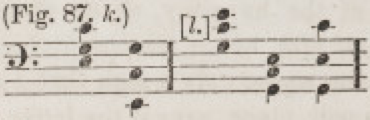
Among the different possible transpositions of a harmony, those are especially worthy of remark in which the intervals are so displaced in relation to each other, that *the fundamental note ceases to be the lowest*, i. e. in the base, as it was in the original position, and now lies in a middle or upper voice, and thus another note comes to be the lowest or base note, the proper base note itself having been displaced, as e. g. in the positions exhibited in § 55 [*E c g*], [*G c e*] and the like. These positions have a peculiar name: they are called *exchanged*, *permuted*, or *inverted positions*, or concisely *inversions*. In fig. 87. *i*.

(Fig. 87. *i*.)



the $\mathfrak{C}$-harmony stands in an uninverted or direct position, then in fig. 87. *k*. and *l*.

(Fig. 87. *k*.)



[*l*.]

in several inverted positions.

Inversion is accordingly that position of a chord in which the fundamental tone does not lie the lowest, in which the lowest or base tone is not the fundamental tone, in which another than the fundamental tone, i. e. a secondary or accessory tone (§ 50), taking its position in the base, becomes converted into the lowest.

Thus the only thing to be considered here is, whether the lowest tone of the chord is the fundamental tone itself, or not. As to the other tones and how *they* are placed in relation to one another, no regard need be had, and it need not even be considered which of these is higher or lower than the others, but only which is the lowest of all.

In contradistinction from *the inverted position* of a harmony, we will denominate that position in which the fundamental tone itself is situated in the base *the fundamental position*.

§ 57.

On the ground of the fact that in an inversion of a harmony the fundamental tone is not situated in the base and hence that the base tone is not the fundamental tone, but that the base tone is one and the fundamental tone is another,—in consequence of this fact, it now becomes quite necessary, very carefully to maintain the distinction between base tone and *fundamental tone.* *The fundamental tone* is that whose three-fold or four-fold chord constitutes the fundamental harmony, (§ 50;) whereas *the base tone,* is the lowest tone of any harmonic combination, pluritone or chord. (§ 4.)

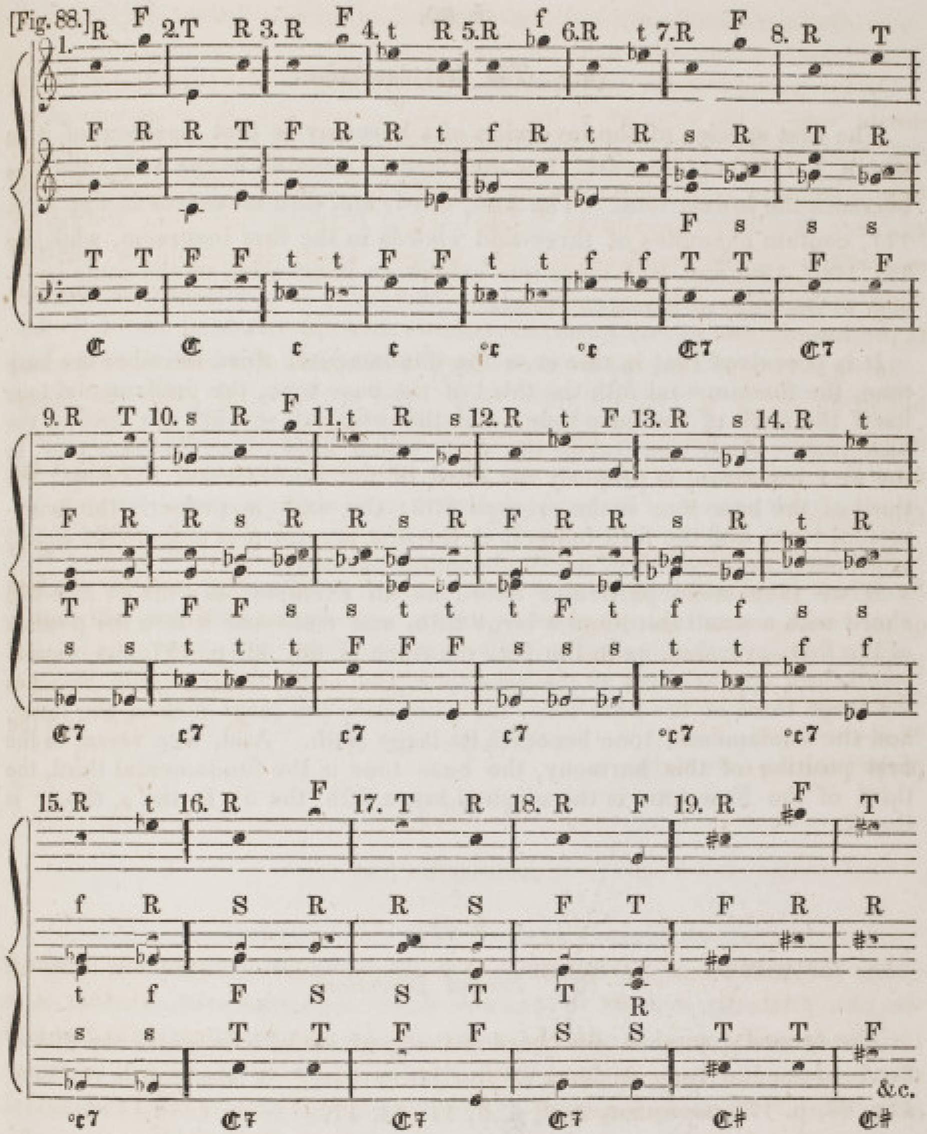
In fig. 87. *i.* p. 175, the tone *c* is both a fundamental and a base tone; but in fig. 87. *k.* p. 175, the base tone is not at the same time the fundamental tone, for, here the tone *e*, which is originally the third of the fundamental harmony, appears as the base tone, in consequence of which the fundamental tone *c̄* or *c* appears as the sixth of the base tone. In fig. 87. *i.* p. 175, the tone *g* is the fifth of the fundamental and base tone; but in fig. 87. *k.* p. 175, this same *g*, which was *originally a fifth*, namely *the fifth of the fundamental tone*, appears as the third of the base tone *e*, although it properly always remains the fifth of the fundamental harmony or *the fundamental fifth.* In fig. 87. *l.* p. 175, this same *g* or *G* makes its appearance as a base tone, while the fundamental itself appears as its fourth, and the proper third as its sixth.

---

§ 58.

For the purpose of having some mode of designation by means of which we can distinctly indicate in the case of any note whatever, whether it is *the fundamental tone* of the harmony, or its proper third, (*fundamental third,*) or *the fundamental fifth,* or *the fundamental seventh*, we will hereafter make use of the following signs. As a sign that a note is *the fundamental note* of a harmony, we will place over it the letter *R* (i. e. *Root* or *fundamental note* of the harmony.)—Over a note which is the proper *third* of the fundamental harmony, (the fundamental third,) we will put a *T* or *t*;—over *the fifth* of the fundamental harmony (*the fundamental fifth*) we will set an *F* or *f*; and over the proper *seventh* we will put an *S* or *s*. Moreover, a large *T* shall be used to denote *the large* fundamental third, and a small *t* *the small* fundamental third; and in like manner large *F* and large *S* shall represent *large* fifths and *large* sevenths, while small *f* and small *s* shall be taken to denote *small* fifths and *small* sevenths. (See e. g. fig. 88, on next page.)

[Fig. 88.]


1. R F 2. T R 3. R F 4. t R 5. R f 6. R t 7. R F 8. R T
F R R T F R R t f R t R s R T R
F s s s
T T F F t t F F t t f f T T F F
𝕮 𝕮 𝔠 𝔠 °𝔠 °𝔠 𝕮7 𝕮7
9. R T 10. s R F 11. t R s 12. R t F 13. R s 14. R t
F R R s R R s R F R R s R t R
T F F F s s t t t F t f f s s
s s t t t F F F s s s t t f f
𝕮7 𝔠7 𝔠7 𝔠7 °𝔠7 °𝔠7
15. R t 16. R F 17. T R 18. R F 19. R F T
f R S R R S F T F R R
t f F S S T T R
s s T T F F S S T T F
&c.
°𝔠7 𝕮7 𝕮7 𝕮7 𝕮♯ 𝕮♯

§ 59.

Inasmuch as the inversion of a harmony consists in the fact that one of its intervals, which is not the fundamental tone itself, becomes situated in the base, it follows that every harmony is capable of as many inversions as it contains intervals in addition to the fundamental tone. The three-fold harmony consists of a fundamental tone and two intervals, and hence it is capable of two inversions. The four-fold chord consists of three intervals besides the fundamental note, and is therefore capable of three inversions. We will take a view of these different inversions in their order.

§ 60.

(a.) *The first inversion.*

The first species of the inversion of a harmony is that position of it in which, not the fundamental, but *its third* is situated in the base, and thus becomes the lowest tone. The first, third, and fifth measures in fig. 88, p. 177, contain examples of three-fold chords in the first inversion, while the 7th, 10th, 13th and 16th measures exhibit an illustration of the same inversion in the case of four-fold chords

It is perceived that in this case the fundamental third becomes the base tone, the fundamental fifth the third of the base tone, the fundamental tone itself the sixth of the base tone, and the original seventh the fifth of the base tone. And, vice versa, the tone which appears as the base tone, in the first inversion, is properly the third of the fundamental harmony; the third of the base tone is the original fifth; the sixth is properly the fundamental tone, and the fifth (namely in the first inversion of a four-fold chord) is properly the seventh of the fundamental harmony.

If we take some particular chord as an example, say the $\mathfrak{C}^7$ four-fold chord with a small third and a large fifth, and transpose it into the position of the first inversion, as in the 10th measure of fig. 88, p. 177, the original small third appears now as the base tone, the original large fifth becomes the large third of the base tone, the *s* becomes the large fifth of the latter, and the fundamental tone becomes its large sixth. And, vice versa, in the first position of this harmony, the base tone is the fundamental third, the third of the base tone is the original large fifth, the 5• is the *s*, the 6• is the *R*.

---

§ 61.

(b.) *Second Inversion.*

The second inversion of a chord is that position of it in which the fifth of the fundamental tone, instead of the latter itself, is situated in the base. Fig. 88, p. 177, measures 2, 4, 6, 8, 11, 14, 17.

It is perceived that by the second inversion of a harmony the fundamental fifth becomes the base tone, while the fundamental tone itself becomes the fourth of the base tone; the original third becomes the sixth and the original seventh becomes the third of the base tone.—Vice versa, the tone which in the second inversion of a harmony appears as a base tone, is properly the fifth of the fundamental harmony; the fourth of the base tone is the fundamental tone itself, the sixth is the fundamental third, the third of the base tone is the original seventh.

If e. g. we bring the four-fold chord with small fifth into the position of the second inversion, (14th measure of fig. 88, p. 177,) the *f*, i. e. the original small fifth, becomes the base tone, the fundamental itself becomes 4•, i. e. the large fourth of the base tone, the *t* becomes 6• of the base tone, while the *s* becomes 3• of the base tone. And vice versa, in the second inversion of the above mentioned harmony, the base tone is the *f*, the 3• is *s*, the 4• of the base tone is the fundamental tone itself, and the 6• of the base tone is the original *t*.

§ 62.

(*c.*) *Third Inversion.*

The third inversion is that position of a four-fold chord in which the original seventh is made the lowest tone. Measures 9, 12, 15, 18 of fig. 88, p. 177. It is seen, of course, that a three-fold chord is incapable of a third inversion. (§ 59.)

In the third inversion of a four-fold chord the fundamental seventh becomes the base tone, the fundamental tone becomes the second, the original third becomes a fourth, while the fifth of the fundamental harmony becomes the sixth of the base tone. And, vice versa, the base tone is the proper seventh, the second is the fundamental tone itself, the fourth of the base tone is the fundamental third, while the sixth of the base tone is the original fifth.

If e. g. we transpose the large four-fold chord $\mathfrak{C}^7$ into the third inversion (18th measure of fig. 88, p. 177,) the fundamental note becomes the small second of the base tone; the original large third becomes the small fourth of the base tone itself; the large fundamental fifth becomes the small sixth of the base tone; while the proper seventh appears as the base tone. And, vice versa, in the third inversion of the aforementioned harmony, the base tone is the *S*, the •2 is *R*, the •4 is *T*, the •6 is *F*.

§ 63.

(*d.*) *Exercises.*

As a useful exercise, as well in the chords in general as particularly for the sake of becoming familiar with the manner in which the different elements of the various harmonies come to stand, by the inversion of the base tone, at one time at this and another time at that distance from the base tone, I recommend it to the less expert to go through all the seven fundamental chords in all the inversions, in the following manner:

1. In the first inversion of the large three-fold chord, the large fundamental third becomes the base tone, the original large fifth becomes the small third of the base tone, the original fundamental note becomes the small sixth.
2. In the first inversion of the small three-fold chord, the *t* becomes the base tone, the *F* becomes 3• of the base tone, the *R* becomes 6•.
3. In the first inversion of the diminished three-fold chord, the, &c. - - - -
4. In the first inversion of the principal four-fold chord, the, &c. - - - -
5. In the first inversion of the small four-fold chord, the, &c. - - - -
6. In the first inversion of the four-fold chord with small fifth, the, &c. - - - -
7. In the first inversion of the large four-fold chord, the, &c. - - - -

8. In the second inversion of the large three-fold chord, the, &c. - - - -
9. In the second inversion of the small three-fold chord, the, &c. - - - -
10. In the second inversion of the diminished three-fold chord, the, &c. - - - -
11. In the second inversion of the principal four-fold chord, the, &c. - - - -
12. In the second inversion of the small four-fold chord, the, &c. - - - -

13. In the second inversion of the four-fold chord with small fifth, the, &c. - - - -
14. In the second inversion of the large four-fold chord, the, &c - - - -

15. In the third inversion of the principal four-fold chord, the, &c. - - - -
16. In the third inversion of the small four-fold chord, the, &c. - - - -
17. In the third inversion of the four-fold chord with small fifth, the, &c. - - - -
18. In the third inversion of the large four-fold chord, the, &c. - - - -

To apply these general exercises to particular examples, one may write out in notes all the seven fundamental harmonies, in all the possible inversions, on all the tones, and in different positions, at pleasure, and in doing this let him always give himself a full and definite account of every note: e. g. in the following manner:

Fig. 88, (p. 177,) Measure 1. Large three-fold chord 𝕮 in the first inversion. The base tone *e* is the original large third; *g*, the small third of the base tone, is the original large fifth; *c*, the small sixth of the base tone, is - - - - &c.

Measure 2. Large three-fold chord 𝕮 in the second inversion. The base tone *g* is - - - - &c.

Measure 3. Small three-fold chord 𝔠 in the first inversion. The base tone is - - - -
Measure 4. Small three-fold chord 𝔠 in second inversion. The base tone *g* - - - -

Measure 5. Diminished three-fold chord °𝔠 in the first inversion. The base tone - - - -
Measure 6. Diminished three-fold chord °𝔠 in second inversion - - - -

Measure 7. Principal four-fold chord 𝕮7 in the first inversion - - - -
Measure 8. Principal four-fold chord 𝕮7 in the second inversion - - - -
Measure 9. Principal four-fold chord 𝕮7 in the third inversion - - - -

Measure 10. Small four-fold chord 𝔠7 in the first inversion - - - -
Measure 11. Small four-fold chord 𝔠7 in the second inversion - - - -
Measure 12. Small four-fold chord 𝔠7 in the third inversion - - - -

Measure 13. Four-fold chord °𝔠7 in the first inversion - - - -
Measure 14. Four-fold chord °𝔠7 in the second inversion - - - -
Measure 15. Four-fold chord °𝔠7 in the third inversion - - - -

Measure 16. Four-fold chord 𝕮7̶ in the first inversion - - - -
Measure 17. Four-fold chord 𝕮7̶ in the second inversion - - - -
Measure 18. Four-fold chord 𝕮7̶ in the third inversion - - - -

Measure 19. Large three-fold chord 𝕮♯ in the first inversion - - - -
Measure 20. 𝕮♯ in the second inversion - - - -
&c.
𝔠♯ in first inversion, &c.
𝔠♯ in second inversion, &c.
°𝔠♯ in first inversion, &c.
°𝔠♯ in second inversion, &c.
𝕮♯7 in first inversion, &c.
&c. &c.

and thus, as here on the tones C and C♯, go through the various inversions on all the tones, or at least on many others.

I would moreover advise to apply here, in addition to the above, the singing and hearing exercises recommended in § 53.

(e.) *Equivocalness of the Distances from the Base Tones.*

§ 63 *bis.*

It is perceived from all this, how very variously one and the same harmonic interval may occur, at one time as the base tone, and *at another at this or that distance from the base tone*, according to the changes which may be effected in the fundamental position* or in the inversions.

Thus, e. g. the fundamental tone of a three-fold harmony may at one time appear as a base note, at another as its sixth, at another as its fourth; and the fundamental tone of a four-fold chord may, moreover, appear also as the second of the base tone. The fundamental tone of the harmony of $\mathfrak{C}$ or $\mathfrak{C}^7$, e. g. may occur at one time as the base tone, at another as •6 of the base tone *E*, at another as •4 of the base tone *G*, at another as 2• of the base tone *B*♭;—the fundamental tone of the harmony $\mathfrak{c}$ or $\mathfrak{c}^7$ may appear at one time as the base tone, again as 6•, •4, or 2• of the base tone, &c.

So also the large and small thirds of a fundamental harmony may at one time occur as 3• or •3 of the base tone, at another as the base tone itself, again as its 6• or •6,—and in particular the third of a seventh harmony may appear also as 4• or •4 of the base tone.

So likewise the *F* or *f* of a fundamental harmony appears at one time as 5• or •5 of the base tone, at another time as 3• or •3, at another as the base tone itself, and again as 6• or •6.

In like manner the *S* or *s* at one time occurs as 7• or •7 of the base tone, at another as 5• or •5, at another as 3• or •3, and at another as the base tone.

§ 63 *ter.*

If, on the other hand, we consider, how variously a tone which, as reckoned from the base tone, forms this or that interval with the latter, may at one time be this and at another time that fundamental interval, we find here also an almost inconceivable multiplicity of interval changes.

A tone, namely, which is at the distance of *a second* from the base tone, (and which is of course the second of the base tone,) can only be the fundamental tone of the harmony (§ 62,) to wit:

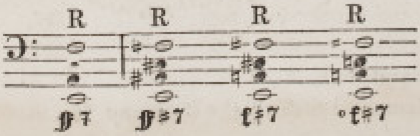
The tone which forms *a small* second with the base tone, can be only the fundamental tone of a large four-fold harmony $\mathfrak{X}^7$,

But *the large* second of the base tone may either be the fundamental tone of a principal four-fold chord, $\mathfrak{X}^7$,

Or of a small four-fold chord, $\mathfrak{x}^7$,

Or of a four-fold chord with small fifth, $°\mathfrak{x}^7$.

If the tone *E*, e. g. lies in the base,



the tone *f*, which is a *small* second higher, can only be the fundamental tone

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* The fundamental position is that in which the fundamental tone stands lowest.—Tr.

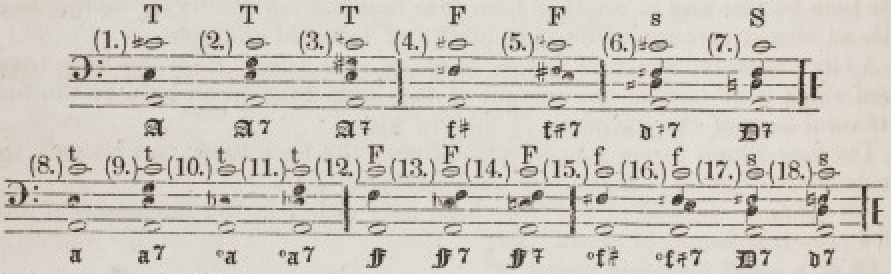
of the large four-fold harmony of $\mathfrak{F}^{\bar{7}}$; but the tone *f*♯, which is *a large* second higher, can either be the fundamental tone of the harmony $\mathfrak{F}\sharp^{7}$, or
that of the harmony $\mathfrak{f}\sharp^{7}$, or
that of " $°\mathfrak{f}\sharp^{7}$.

A tone which is the third of the base tone can be either a fundamental third, or a fundamental fifth, (§ 60,) or a fundamental seventh, (§ 61;) to wit:

The large third of the base tone can be either the fundamental third, and that,
either *T* of $\mathfrak{X}$,
or *T* of $\mathfrak{X}_7$,
or *T* of $\mathfrak{X}^{\bar{7}}$;
or the fundamental fifth, and that,
either *F* of $\mathfrak{x}$,
or *F* of $\mathfrak{x}^{7}$;
or the fundamental seventh, and that,
either *s* of $°\mathfrak{x}^{7}$,
or *S* of $\mathfrak{X}^{\bar{7}}$.

The *small* third of the base tone can be either the fundamental third, namely,
either *t* of $\mathfrak{x}$,
or *t* of $\mathfrak{x}^{7}$,
or *t* of $°\mathfrak{x}$,
or *t* of $°\mathfrak{x}^{7}$;
or the fundamental fifth, and that,
either *F* of $\mathfrak{X}$,
or *F* of $\mathfrak{X}^{7}$,
or *F* of $\mathfrak{X}^{\bar{7}}$,
or *f* of $°\mathfrak{x}$,
or *f* of $°\mathfrak{x}^{7}$;
or the fundamental seventh, and that,
either *s* of $\mathfrak{X}^{7}$,
or *s* of $\mathfrak{x}^{7}$.

If e. g. the tone *A* lies in the base,


T
T
T
F
F
s
S
(1.)
(2.)
(3.)
(4.)
(5.)
(6.)
(7.)
$\mathfrak{A}$
$\mathfrak{A}^{7}$
$\mathfrak{A}^{\bar{7}}$
$\mathfrak{f}\sharp$
$\mathfrak{f}\sharp^{7}$
$\mathfrak{d}\sharp^{7}$
$\mathfrak{D}^{\bar{7}}$
(8.) t
(9.) t
(10.) t
(11.) t
(12.) F
(13.) F
(14.) F
(15.) f
(16.) f
(17.) s
(18.) s
$\mathfrak{a}$
$\mathfrak{a}^{7}$
$°\mathfrak{a}$
$°\mathfrak{a}^{7}$
$\mathfrak{F}$
$\mathfrak{F}^{7}$
$\mathfrak{F}^{\bar{7}}$
$°\mathfrak{f}\sharp$
$°\mathfrak{f}\sharp^{7}$
$\mathfrak{D}^{7}$
$\mathfrak{d}^{7}$

the tone *c*♯, which is by *large* third higher, can be
either a fundamental third, and that,
either a large fundamental third of the harmony $\mathfrak{A}$, as in fig. 1,
or " " $\mathfrak{A}^{7}$, " 2,
or " " $\mathfrak{A}^{\bar{7}}$, " 3;
or a fundamental fifth, and that,
either a large fundamental fifth of the harmony $\mathfrak{f}\sharp$, " 4,
or " " $\mathfrak{f}\sharp^{7}$, " 5;
or a fundamental seventh, and that,
either a small fundamental seventh of the harmony $°\mathfrak{d}\sharp^{7}$, " 6,
or a large " $\mathfrak{D}^{\bar{7}}$, " 7;

and the tone *c*, which is higher by the distance of *a small* third, can be
either a fundamental third, and that,
- either a small fundamental third of the harmony $\mathfrak{A}$, as in fig. 8,
- or " " $\mathfrak{A}^7$, " 9,
- or " " $^\circ\mathfrak{A}$, " 10,
- or " " $^\circ\mathfrak{A}^7$, " 11;

or a fundamental fifth, and that,
- either a large fundamental fifth of the harmony $\mathfrak{F}$, " 12,
- or " " $\mathfrak{F}^7$, " 13,
- or " " $\mathfrak{F}^7$, " 14,
- or " " $^\circ\mathfrak{f}\sharp$, " 15,
- or " " $^\circ\mathfrak{f}\sharp^7$, " 16;

or, finally, a fundamental seventh, and that,
- either a small fundamental seventh of the harmony $\mathfrak{D}7$, " 17,
- or " " $\mathfrak{d}^7$, " 18.

The investigation of these interval changes, reckoned in relation to the other distances of tones from the base tone, may be left to the pleasure of the reader. The little commencement just made will be sufficient to show, how almost every interval of every fundamental harmony may appear under the form of nearly every possible interval of the base tone, and, vice versa, almost every fundamental interval of every fundamental harmony may appear under the form of one and the same distance from the base tone. (Comp. the remark at § 99.)

§ 63 *quater.*

(f.) *Permutations or Positions.*

In the foregoing doctrine of inversions we have throughout had regard only to the circumstance, whether the lowest tone of the chord is the fundamental tone itself, or not; but have not taken the others into the account, taking no notice of the manner in which these are placed in relation to one another and which of them is higher or lower than another. (§ 56.)

If we now direct our attention to this point and inquire, *how many different positions or placings* (permutations) *of the intervals of the three-fold and four-fold harmonies in relation to one another in general are possible*, we shall find as follows.

The three intervals of a three-fold harmony are capable of *six*[*] different positions, namely:

(1.) Two in the fundamental position (§ 56,) according as the third is placed under the fifth and next to the fundamental tone situated in the base, or the fifth is placed under the third and next to the fundamental.

(2.) There are the same number again in the first inversion, according as the fifth is placed under the fundamental tone and next above the fundamental third in the base, or the fundamental tone is placed under the fifth and next above the fundamental third.

(3.) Two positions occur again in the second inversion, according as next above the fundamental fifth, which here lies in the base, the fundamental tone is situated under the third, or the third is situated under the fundamental tone.

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[*] $1 \times 2 \times 3 = 6$.

Thus, in all, there are six different positions or permutations:

Fundamental Position.		First Inversion.		Second Inversion.	
Fifth.	Third.	Fund'l tone.	Fifth.	Third.	Fund'l tone.
Third. or	Fifth.	Fifth. or	Fund'l tone.	Fund'l tone. or	Third.
Fund'l tone.	Fund'l tone.	Third.	Third.	Fifth.	Fifth.

If we in like manner investigate the number of the different possible positions of the four intervals of *the four-fold* chord, we shall find there are 24,* namely:

Fundamental Position.					
Seventh.	Fifth.	Third.	Seventh.	Fifth.	Third.
Fifth.	Seventh.	Seventh.	Third.	Third.	Fifth.
Third.	Third.	Fifth.	Fifth.	Seventh.	Seventh.
Fundamental.	Fundamental.	Fundamental.	Fundamental.	Fundamental.	Fundamental.

First Inversion.					
Fundamental.	Seventh.	Fifth.	Fundamental.	Seventh.	Fifth.
Seventh.	Fundamental.	Fundamental.	Fifth.	Fifth,	Seventh.
Fifth.	Fifth.	Seventh.	Seventh.	Fundamental.	Fundamental.
Third.	Third.	Third.	Third.	Third.	Third.

Second Inversion.					
Third.	Fundamental.	Seventh.	Third.	Fundamental.	Seventh.
Fundamental.	Third.	Third.	Seventh.	Seventh	Fundamental.
Seventh.	Seventh.	Fundamental.	Fundamental.	Third.	Third.
Fifth.	Fifth.	Fifth.	Fifth.	Fifth.	Fifth.

Third Inversion.					
Fifth.	Third.	Fundamental.	Fifth.	Third.	Fundamental.
Third.	Fifth.	Fifth.	Fundamental.	Fundamental.	Third.
Fundamental.	Fundamental.	Third.	Third.	Fifth.	Fifth.
Seventh.	Seventh.	Seventh.	Seventh.	Seventh.	Seventh.

§ 64.

(g.) *The comparative merits of the Fundamental Position and of the Inversions.*

A definite rule, determining *when we must or may invert a harmony,* cannot properly be given, and the rules on this point which are found in many of the books of instruction,—such e. g. as that we must neither begin nor end a piece of music with an inverted chord, and the like, are in part only half true, and in part they do not belong to the doctrine of the inversion of chords in general.

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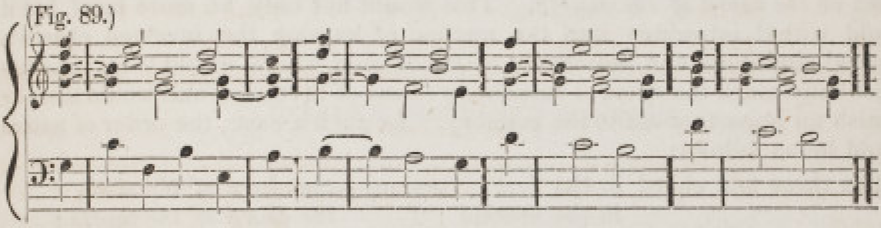
*1 × 2 × 3 × 4 = 24.

It may, however, be remarked in general in this place, that a chord in its fundamental position is usually somewhat more satisfactory to the ear, than it is in an inverted position, the latter (especially the second inversion) being always in a manner somewhat less perfect, less satisfactory to the ear, somehow less finished and complete. This remark applies very particularly to those harmonies which are in themselves rather unsatisfactory to the ear; for, these in a state of inversion, become still more unsatisfactory and almost positively disagreeable; many of the secondary four-fold chords, e. g. are of this class. Compare, for instance, fig. 89, below, where secondary four-fold chords occur in different positions and inversions.

(Fig. 89.)



This is all that, *in a general way*, admits of being said in the present connection. In all cases, however, where the position requires particular attention, it will be noticed hereafter; as e. g. § 74, § 80, § 91, &c.

The doctrine of *the inversion of a voice in relation to another* will, in particular, be expressly treated in the chapter on *Double Counterpoint.*

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§ 65.

(h.) *The usual names of the chords in reference to their inverted or uninverted [direct] position.*

Musicians have given the chords particular names borrowed from the intervals of which they consist, as reckoned from the base tone.

A three-fold chord in the first inversion, consisting accordingly of a base tone, its third, and its sixth, and being, according to the numerical names of the intervals as reckoned from the base tone, a third-sixth chord, is briefly termed *a chord of the sixth* or *a sixth chord.*

A three-fold chord in the second inversion, consisting consequently of a base tone, its fourth, and its sixth, is called *a chord of the fourth-sixth* or *of the sixth-fourth.*

In contra-distinction from these inversion names of chords, we may, in accordance with the numerical names of the intervals, denominate a three-fold chord which is in an inverted or fundamental position, *a chord of the third fifth* or *a third-fifth chord.*

A four-fold chord which is not in an inverted, but in the fundamental position, and which according to the numerical names of intervals is a third-fifth-seventh chord, is briefly called *a chord of the seventh* or *a seventh chord.*

A four-fold chord in the first inversion, and, according to the numerical method of naming, a third-fifth-sixth chord, is concisely called *a fifth-sixth chord* or *a sixth-fifth chord*, or *a chord of the fifth-sixth* or *sixth-fifth.*

The second inversion of a four-fold harmony, the third-fourth-sixth chord, is briefly named *the third-fourth chord* or *the fourth-third chord*, or *a chord of the third-fourth* or *fourth-third.*

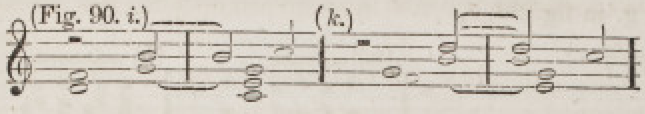
The third inversion of a four-fold harmony, which is a second-fourth-sixth chord, is briefly termed *a second chord* or *the chord of the second.*

The so-called fourth sixth chord should rather be called merely *a fourth chord* or *the chord of the fourth.* This would not only be more brief, but it would withal introduce into the method of naming the inverted chords a general similitude and uniformity of succession which would very characteristically mark the several respective forms of inversion and would thereby furnish an important aid to the memory. In such a case, the order of names would be as follows:

The three fold chord in the first inversion,—*the chord of the sixth,*
“ in the second “ *the chord of the fourth;*
The four-fold chord in the fundamental position,—*the chord of the seventh,*
“ in the first inversion,—*the chord of the fifth-sixth,*
“ in the second “ *the chord of the third-fourth,*
“ in the third “ *the chord of the second.*

The regular, consecutive uniformity of this mode of applying appellations to the inverted chords, consists in the fact that in this way the name of each chord coincides with the name of that interval which the fundamental tone of the three-fold harmony, and the fundamental tone and the original seventh of the four-fold chord, form with the base note. In the first inversion of the three-fold chord, namely, the fundamental tone forms *a sixth* with the base tone, and thus a three-fold chord in the first inversion is with peculiar appropriateness called *a chord of* THE SIXTH. For a like reason, the second inversion of the three-fold chord would very properly be named merely *the chord of* THE FOURTH, because the fundamental tone of this chord appears as *the fourth* of the base note. The four-fold chord in the fundamental position, where of course the fundamental seventh appears as *the seventh* from the base tone, is accordingly called *the chord of* THE SEVENTH. The first inversion of the four-fold chord is called *the chord of* THE SIXTH-FIFTH or FIFTH-SIXTH, because the fundamental tone in this case appears as *the sixth*, and the original seventh as *the fifth* of the base tone. The second inversion of the four-fold harmony is denominated *the chord of* THE FOURTH-THIRD *or* THIRD-FOURTH, because the fundamental tone in it is *the fourth*, and the original seventh is *the third*, of the base tone. Finally, a four-fold chord in the third inversion, in which case the fundamental tone appears as *the second* of the base tone, while the original seventh itself appears as the base tone, is accordingly termed *the chord of* THE SECOND.

But it is to be remarked in general in regard to all these names, that, depending as they do merely upon the distance of the upper tones of a harmonic combination from the base tone, are very frequently applied also to other harmonic combinations. Thus e. g. in such cases as that which follows in fig. 90, *i*, below,



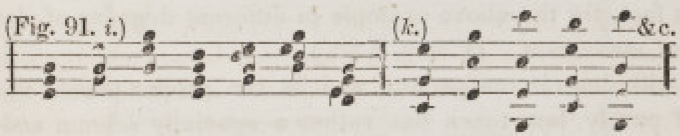
the combination $[\bar{c}\ \bar{e}\ \bar{g}\ \bar{b}]$ is called a seventh chord, because it consists of a fundamental tone, its third, its fifth and its seventh, although, as we shall see in the sequel, it is by no means a fundamental four-fold chord—a four-fold harmony, but depends upon a three-fold chord. The case is the same with the harmonic combination $[\bar{e}\ \bar{g}\ \bar{b}\ \bar{\bar{d}}]$ in fig. 90, *k*, above. (Comp. the remark on § 99.)

(3.)

CLOSE AND DISPERSED POSITION.

§ 66.

An additional distinction in the position of chords depends upon the circumstance, whether the tones of which it consists are placed close together or at a distance from each other. The former, as e. g. in fig. 91, *i*,



is called *a close position* or *close harmony*, while the latter, as e. g fig. 91, *k*, above, is denominated *a dispersed position, dispersed harmony*. Piano-forte players and organists term the latter also *divided* or *separated harmony*, because they cannot in this case, as is usual elsewhere, play the base notes only with the left hand, and all the other intervals with the right, but are obliged to take half of the elements of the harmony with the left hand, and the other half with the right hand, and thus to divide them equally between the two hands.

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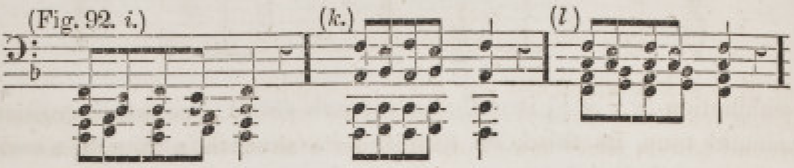
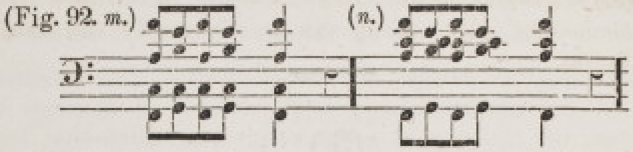
§ 67.

Which of the two species we are to use in any given case, is in part a mere matter of taste, and in part it depends upon circumstances which dictate at one time this, and at another time that, close or dispersed position of the voices. On this point, we can in general make only the few following remarks.

In the first place, *low tones should not be brought very near other low tones*, because this naturally produces an indistinct and unintelligible murmur or buzz, as e. g. in fig. 92, *i*,



The examples in fig. 92, *k* and *l*, above, are less confused; but the composition does not become perfectly clear until it arrives at the positions exhibited in fig. 92, *m* and *n;*



from all which, it is evident, that the lower the tones are, the more necessary it is to avoid crowding them too closely together.

Deviations from this cautionary rule take place rather in the case of slow movement than in that of quick, because in the first case more time is left to the ear to apprehend the low tones, though they be more or less confused and jumbled together, whereas, in the case of quicker movement, they are passed over without making any distinct and intelligible impression, for the want of time to apprehend them. Let one, in order to convince himself of this fact, try the above example in different degrees of slowness and quickness of movement. (Comp. § 34.)

Applied with due circumspection and in the proper place, the sounding together of purely low tones has rather a specially solemn and imposing effect, as is the case e. g. in Haydn's Creation, at the words "*Be fruitful,*" &c.—a passage which is sung by a low base voice and accompanied by exclusively low toned instruments.

§ 68.

In many books of instruction, we find the rule laid down, that *the two lowest* tones of every harmonic combination must uniformly be *at least one whole octave apart.*[*] But in the first place, this rule can be intended only for those harmonic combinations whose lowest tone is a very low one in itself, for otherwise the ground of the prohibition comes to nothing of its own accord. But, secondly, this prohibition is the result of nothing but an undue and useless particularity and caution, as is shown by the example just quoted from Haydn. If the prohibition were really well founded, it would be impossible ever to compose any piece of music for such singing and accompanying voices, as those of the example from Haydn, or to construct a composition for four men's voices alone, inasmuch as it is not feasible to keep the two lowest voices always at the distance of an octave or more apart. Indeed it must be maintained e. g. that the chord

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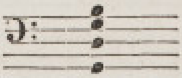
[*] See e. g. Kirnberger's Kunst des reinen satzes, I, Th. X. Abschn. S. 144.



sounds ill,—a fact which the ear itself contradicts.

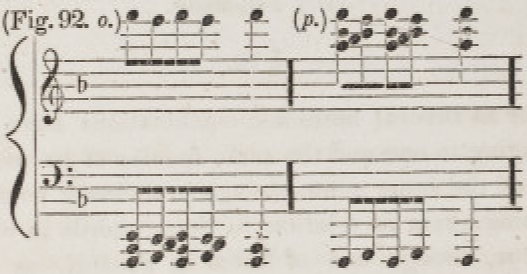
Musical teachers, however, go even *still farther* than this, and teach that the second lowest tone* may approach no nearer than to within a fifth of the third lowest tone,† but that the higher tones may come nearer one another, &c.‡

Now who does not here feel, at the very first glance, that such rules of the art put on us the fetters of pedantry? That these rules are, moreover, unnecessary and consequently incorrect, is every day shown by the works of our best composers, and, among the rest, even by the example above quoted from Haydn.

§ 69.

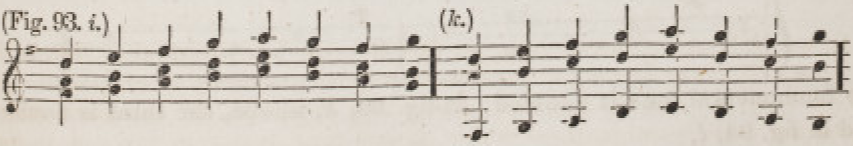
It is a second rule, that *the tones must not be far from each other*, that there must not be too wide a space left vacant between them, because tones which are too far apart do not hold a sufficient degree of relationship to each other and do not duly blend into one whole, as e. g. in fig. 92, *o* and *p;*

(Fig. 92. *o*.)



There is a peculiar case in which a voice should not be removed farther than a third from the voice next above it, namely, when the two upper tones in one or more chords consisting of three tones, stand a fourth apart, as e. g. in fig. 93, *i;*

(Fig. 93. *i*.)



The same succession of chords, in such a position as that exhibited by fig. 93, *k* and *l*,

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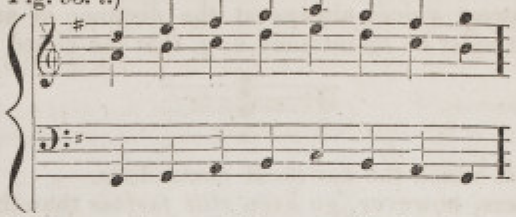
[*] i. e. the lowest tone but one.—Tr.

[†] i. e. the lowest tone but two.—Tr.

[‡] *Kirnberger* a. a. O. S. 144 et seq.

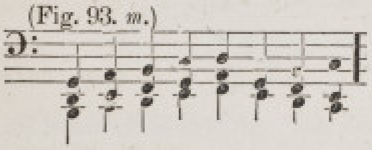
Fig. 93. *l.*)



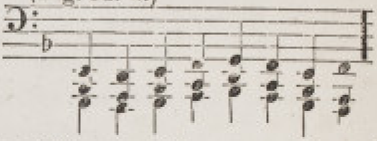
is far less agreeable in sound, even if not positively faulty.

This last remark, compared with what was said in the foregoing section (§ 68,) shows that such passages cannot well be brought into very low positions, because, in order not to remove the two upper voices too far from the base notes, two or three low tones must be brought too near each other. Fig. 93, *m* and *n*.

(Fig. 93. *m.*)



(Fig. 93. *n.*)

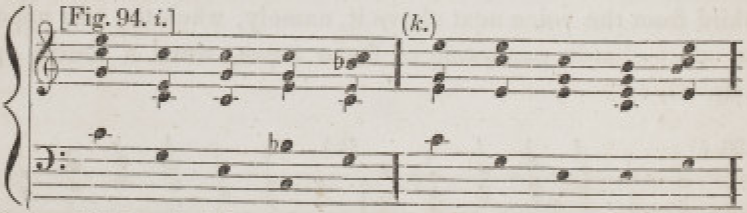


Here moreover compare the doctrine of the peculiar properties of the many-voiced and the few-voiced composition.

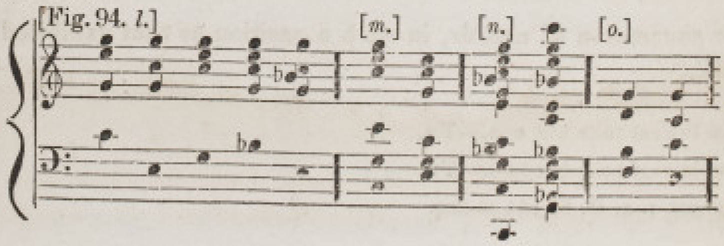
(B.) *Doubling.*

§ 70.

In like manner as several harmonic combinations have been heretofore treated as belonging to one and the same species of harmony, in case they were composed of the same tones, though in different positions; so we will do the same thing again in relation to those chords in which likewise the same tones occur, though one of them is *doubled*, as e. g. [C c e g], [C G e g], [E c g c̄], &c. In the chord of 𝕮 in fig. 94, *i*,



the fundamental tone is doubled; in fig. 94, *k*, above, the third is doubled; and in fig. 94, *l*,



the fifth is doubled; in fig. 94, *m*, p. 190, all the three intervals of the three-fold harmony are doubled. In fig. 94, *n*, p. 190, all the four intervals of the four-fold harmony are even repeatedly doubled. In fig. 94, *i*, p. 190, the base tone of the first chord is doubled in the octave $\bar{\bar{c}}$, then the fourth of the base tone, then its sixth, then again the base tone, and finally again the fourth of the base tone.—In fig. 94, *k*, p. 190, the 3• of the base tone is first doubled, then its 6•, after this the 8, &c. In fig. 94, *l*, p. 190, first the 5• is doubled, then the •3,—the 8,—the 6•,—the •3 and the •5. In fig. 94, *m*, p. 190, first the 3•, the 5• and the 8 of the base tone are doubled, then the 8, •3 and •6, &c. In fig. 94, *o*, p. 190, where two voices come into unison on the tone $\bar{c}$, we may denominate this tone *doubled in unison.*

It will readily be observed, that doublings must occur with special frequency in many-voiced compositions, but less frequently in few-voiced compositions. (Comp. § 28.)

We may, moreover, according as the circumstances of position, carriage of voices, &c. require it, at one time double this, and at another time that interval of this or that chord. In this case, however, regard must be had to two things. *In the first place*, other things being equal, we for the most part double the fundamental tone, or its fifth, rather than its third or its seventh, because the two latter, even when but singly taken, have in them, each in its peculiar way, something that renders them particularly conspicuous above the other intervals. *In the second place*, certain doublings easily occasion faulty parallel progressions, (§ 46;) but of this subject we cannot treat until we come to the doctrine to which it appropriately belongs. (§ 558.)

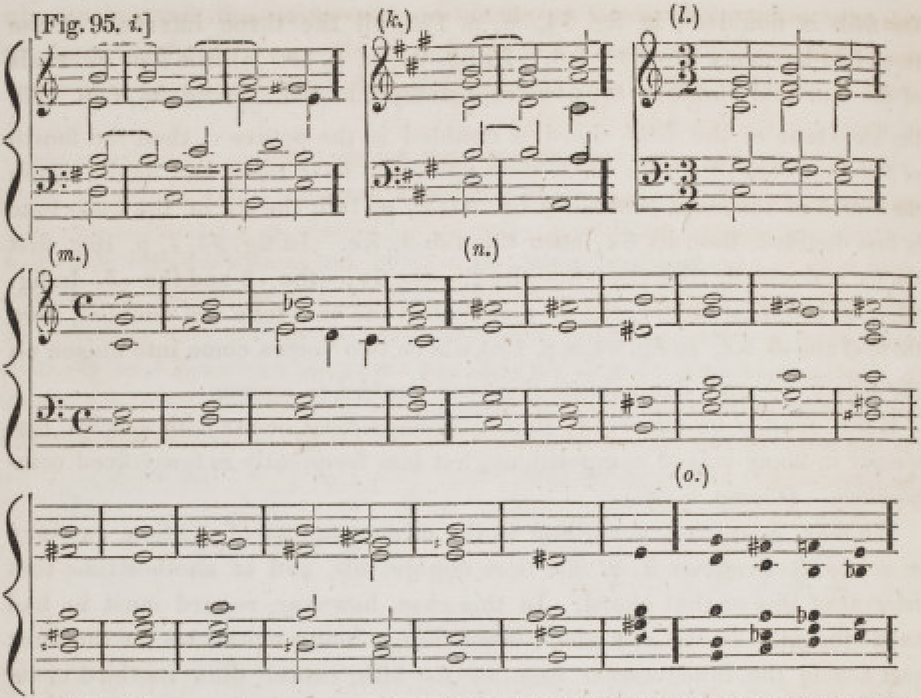
REMARK.

In the books of instruction generally, there is no end of the rules which are framed to show which interval in this or that chord may or must be doubled. It is prescribed in the case of each individual chord, and indeed in that of every inversion of each chord, what interval therein can be doubled,—which first, which after this, and which not at all; and all these individual precepts, together with an equal number of exceptions, showing where such doubling may again be allowed, one is obliged to carry in his memory!

Now all this, in my opinion, is worse than nothing, and I must beg those who may have been at pains to learn it from books, to forget it again as soon as possible.

There is no interval which cannot be doubled *on account of its being this or that interval of this or that harmony*, or *on account of its being a particular number of degrees from the base tone*. Thus e. g. it is laid down as a rule, that *dissonances* and *subsemitones must* not be doubled. The rule is pretty true indeed, but not on the ground that these intervals are dissonances or subsemitones, but because the doubling of such intervals, though *in itself* free from fault, leads to forbidden octaves. If these can be avoided in the case, then the doubling is not disallowed and the prohibition is useless, and the rule consequently is false. See e. g. fig. 95, p. 192.

[Fig. 95. *i.*]



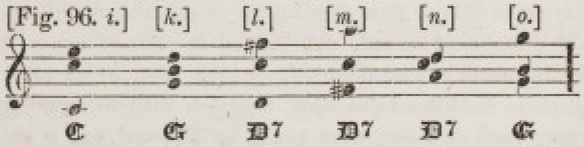
Such doublings are *dangerous*, only so far as they lead to a violation of the rules for the carriage of voices. The due administration of warning on this point, therefore, is appropriate to the doctrine of the carriage of voices, but not to the present connection, where even it could not be understood.

(*C.*) *Omission.*

§ 71.

A harmonic combination in which some, but not all, the elements of a particular harmony are contained, may be regarded as a variation or transformation of the harmomy ; as e. g. fig. 96, *i.*

[Fig. 96. *i.*]



may be considered as a harmony of 𝕮 with the omission of the fifth,—fig. 96. *l. m. n.* above, as a harmony of 𝕯 in which, first, the fundamental fifth *a* is omitted, then the fundamental tone itself, and finally the fundamental third *f*♯.

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§ 72.

It is easy to see that such harmonic combinations of only a few elements, or, in other words, that harmonies with the omission of one or more intervals must occur with special frequency in composition with few voices. In two-voiced composition, no harmony, and in three-voiced composition, no four-fold chord at least, can be simultaneously struck without omissions. (Compare § 23 and what follows.)

It will be readily observed farther, that a harmonic combination consisting only of so few intervals, or in general a harmony in which one or more intervals are omitted, is always *equivocal*. Thus e. g. a principal four-fold chord with the fundamental tone omitted appears exactly like a diminished three-fold chord: (see fig. 96. *m*. p 192.) Even a combination of only *two* tones, as e. g. [A c] may be regarded either as 𝔉 with the omission of the fundamental note, as 𝔞 or °𝔞 with the fifth omitted, as $\mathfrak{F}^7$ or $\mathfrak{F}^7$ with the omission of the fundamental note and the seventh, as $\mathfrak{a}^7$ or $°\mathfrak{a}^7$ with the omission of the fifth and seventh, as $\mathfrak{d}^7$ or $\mathfrak{D}^7$ with the omission of the fundamental tone and the third, &c. (Compare § 63 *ter.*)

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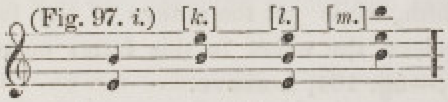
§ 73.

The books of instruction are as poor upon the question, what interval in this or that chord may be left out, as they are rich on the subject of doubling the intervals. On the former topic they really say nothing at all.

Omissions are in general regulated by the following rules.

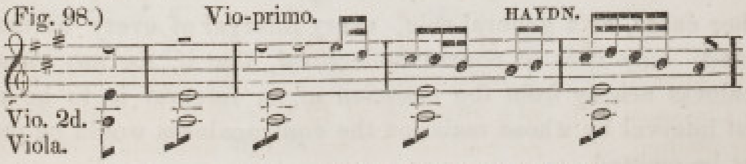
It is not well, in the three-fold harmony, to employ the fundamental tone and the fifth without the third; at least it always sounds vacant, meager and somewhat strange, (fig. 97, *i.* below,) especially when the proper fifth lies lower than the fundamental note, as in fig. 97, *k*. (Compare § 10.)

(Fig. 97. *i.*) [*k.*] [*l.*] [*m.*]



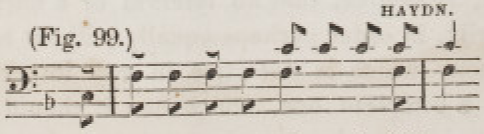
The omission of the fundamental third, however, even on the ground of the singularity and strangeness involved in such omission, has sometimes a particularly pungent effect, as e. g. in the finale of a well known violin quartett of *Haydn*, fig. 98.

(Fig. 98.)



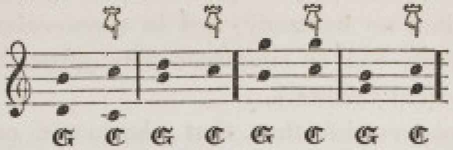
and in a four-voiced song of the same composer, fig. 99.

(Fig. 99.)



It is worthy of remark, that if the third and fifth are both omitted, as e. g. in fig. 100, *i.* p. 194.

(Fig. 100. *i.*) (*k.*)



the sound is far less meager and vacant, that when the fundamental tone and the fifth are heard without the third, as in fig. 100, *k.* above.

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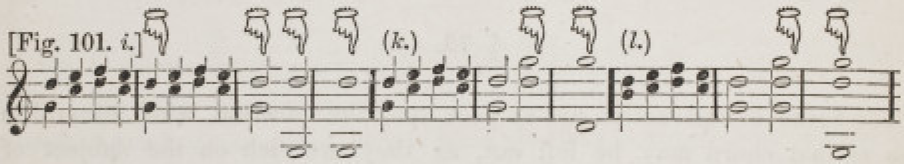
§ 74.

There is a particular case in which the fundamental tone and the fifth of the three-fold chord may with propriety be heard without the third, and that too without sounding vacant; it is, namely, the case of the three-fold harmony on the dominant [the fifth] of the key, as e. g. fig. 101, *i.*

[Fig. 101. *i.*] (*k.*) (*l.*)



This case cannot here, however, where the ideas of keys and of the dominant have not yet been communicated, be explained; we shall recur to the subject hereafter. Meanwhile it will readily be observed, that such omission is less desirable in cases where the proper fifth lies lower than the fundamental tone, as in fig. 101, *k.* above.

The remark holds good in application to cases where the fundamental tone lies lower than the fifth, while yet the octave of the fundamental tone lies above the fifth. Indeed the effect in this latter case is even still more foreign and strange;—fig. 101, *l.* above.

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§ 75.

In other cases, as a general rule, every interval of every harmony may be omitted; only it is of course understood, that if, for any reason, the equivocalness arising from the omission of an interval is to be avoided, then that interval by whose omission the equivocalness would be produced, must not be omitted.

It is self-evident, moreover, that an interval of a harmony must not be omitted unnecessarily, in order perhaps equally without necessity to double another. A harmony which is defective in any interval always sounds more vacant than a complete one, and hence it should be a rule to take every harmony complete, so long as circumstances do not render an omission necessary. Compare moreover § 349.

(D.) *Tones foreign to the harmony.*

§ 76.

The harmonic combinations which we have hitherto explained as transformations of the fundamental harmonies, always consisted of the same tones as the latter. Harmonic combinations of tones, however, frequently occur in music which [tones] are found thus combined in none of the fundamental harmonies above enumerated, and among which consequently there is always at least *one* tone which does not belong to the fundamental harmony—*a tone foreign to the harmony.*

Now if we inquire how such an intertwining of a tone foreign to the harmony takes place, we find it may happen in various ways. These different ways cannot here indeed be fully exhibited, inasmuch as the fundamental principles according to which they occur are not yet all made known; we will exhibit a few cases, however, by way of anticipation.

(1.)

INDEPENDENT NINTHS.

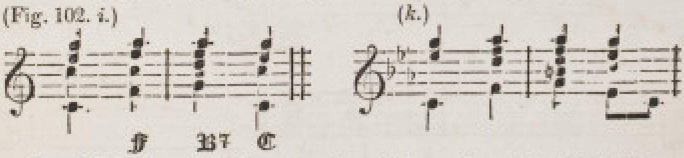
§ 77.

In relation to the above mentioned subject, it is first of all worthy of remark, that in many cases one additional element may be added to a harmony, without anything farther.

This is the case with two species of chords, namely, with the principal four-fold chord, and with the four-fold chord with small fifth. We shall here first speak of the former.

This harmony often appears, namely, enriched with a small or large *ninth*, in addition to its fundamental tone, its third, and its fifth; and thus e. g. to the four-fold chord $\mathfrak{G}^7$, the tone $\bar{\bar{a}}$ or $\bar{\bar{a}}\flat$ is joined, in addition to its appropriate intervals [$\bar{g}$ $\bar{b}$ $\bar{\bar{d}}$ $\bar{\bar{f}}$], by which means harmonic combinations occur as follows: [$\bar{g}$ $\bar{b}$ $\bar{\bar{d}}$ $\bar{\bar{f}}$ $\bar{\bar{a}}$], or [$\bar{g}$ $\bar{b}$ $\bar{\bar{d}}$ $\bar{\bar{f}}$ $\bar{\bar{a}}\flat$],—fig. 102.

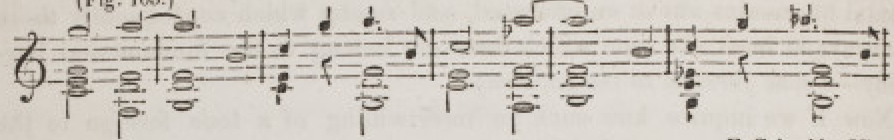
(Fig. 102. *i.*) (*k.*)



Such a chord, which, according to the intervals of which it consists, is a third-fifth-seventh-ninth chord, is usually called in brief *a seventh-ninth chord* or *the chord of the seventh-ninth*, and the added interval is called *a ninth*, because, when standing in such positions as those just exhibited, *it is situated at the distance of nine degrees from the fundamental and base tone;* though, indeed, it might with equal propriety be called *a second.* (General Music Teacher, § XXXIII.) The appellation *ninth* moreover, affords the additional advantage, that such an interval contains withal a proper name for this particular case. (See the place above referred to.) In order to give it a still more decided and unequivocal designation, and for the sake of distinguishing it from other intervals likewise called ninths, we will in particular call this ninth *the independent* ninth. The ground of this appellation will be made known in the sequel.

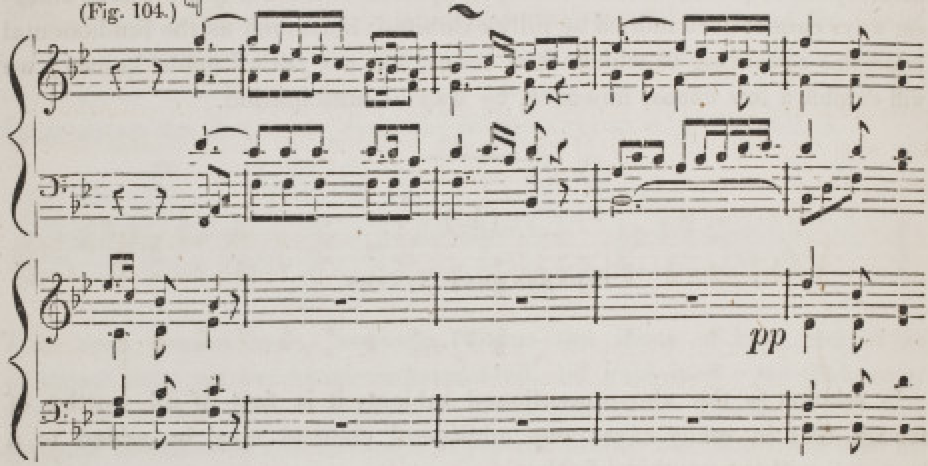
More examples of such added ninths may be seen in figs. 103—109.

(Fig. 103.)

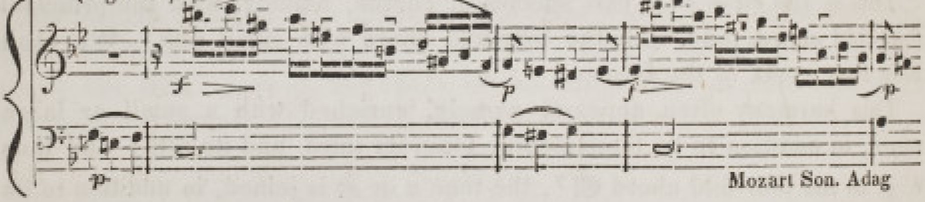


F. Schneider Missa.

(Fig. 104.)

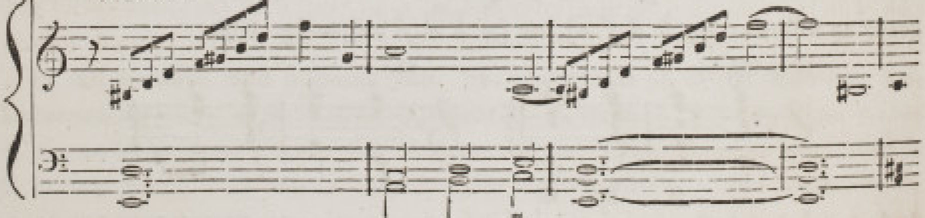


(Fig. 105.)

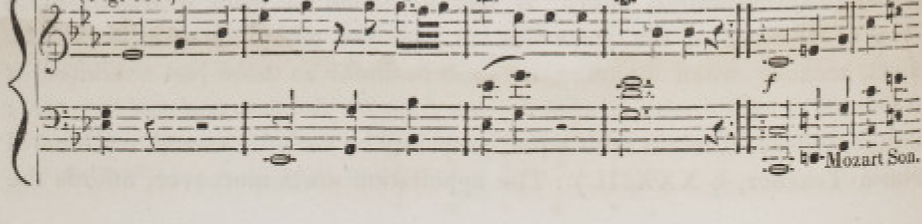


Mozart Son. Adag

(Fig. 106.)

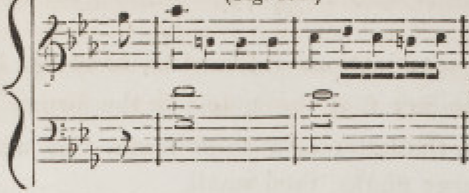


(Fig. 107.)



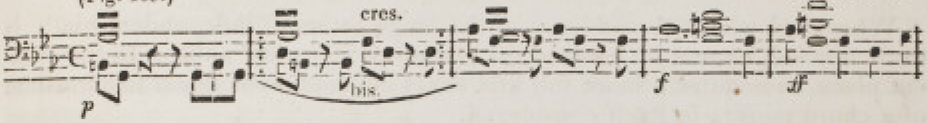
Mozart Son.

(Fig. 108.)



Beethoven.

(Fig. 109.)

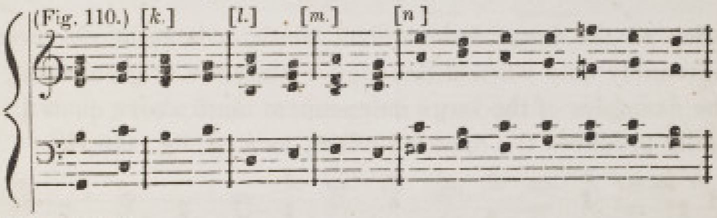


Beethoven.

§ 78.

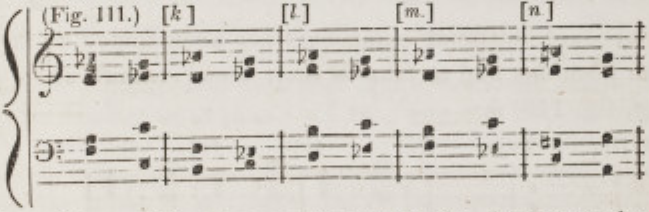
If now, as is undeniably the fact, these examples, in part, have a very perceptible harshness of sound, it is, on the other hand, quite remarkable, how soon this harshness disappears, the moment *the fundamental tone is omitted,* as is the case e. g. in fig. 110, *k.* to *n.*

(Fig. 110.)



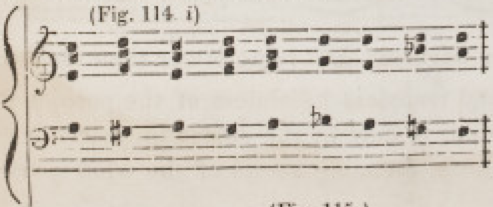
and fig. 111, *k.* to *n.*

(Fig. 111.)

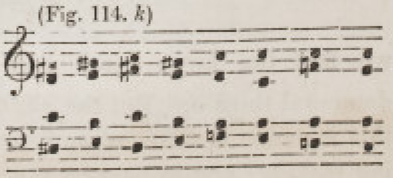


where another interval in all cases becomes the base tone instead of the omitted fundamental tone. Fig. 110, *k.* above, is, namely, 𝕲⁷ in the first inversion, with the omission of the fundamental tone, and with the addition of the large ninth; in fig. 110, *l.* the same harmony is found in the second inversion, and fig. 110, *m.* in the third.—In like manner one sees in fig. 111, above, and in figs. 114 and 115, below, the same harmony, with *the small* ninth in different positions.

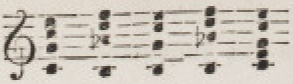
(Fig. 114. i)



(Fig. 114. *k*)



(Fig. 115.)



§ 79.

The two harmonic combinations referred to, as in fig. 102, *i. k.* p. 195, differ essentially in the fact that the tone $\bar{\bar{a}}$ in the former is a *large* ninth, whereas the tone $\bar{\bar{a}}\flat$ in the latter is a *small* ninth. So also in fig. 103, p. 196, we find at first large ninths, then small.

When and where the addition of the large or small independent ninth is to be applied, cannot be learned till hereafter. It must suffice, in the present place, to acquire a more full and exact conception of this transformation of a chord merely in itself considered.

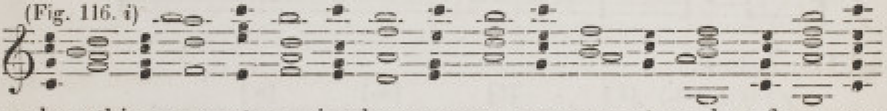
In addition to the general remarks hitherto made upon the large and small ninths, taken in the gross, we will now consider each of the two species somewhat more particularly by itself.

(*a.*) *Large Independent Ninths.*

§ 80.

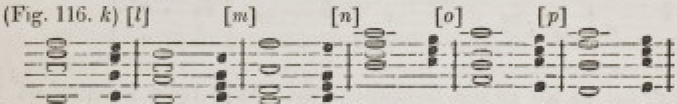
In relation to the large independent ninth, it is to be observed, that it sounds agreeably only when it lies higher than the original third, as is the case in the examples of the large independent ninth above quoted. The reverse usually produces the opposite effect, as e. g. fig. 116, *i.*

(Fig. 116. *i*)



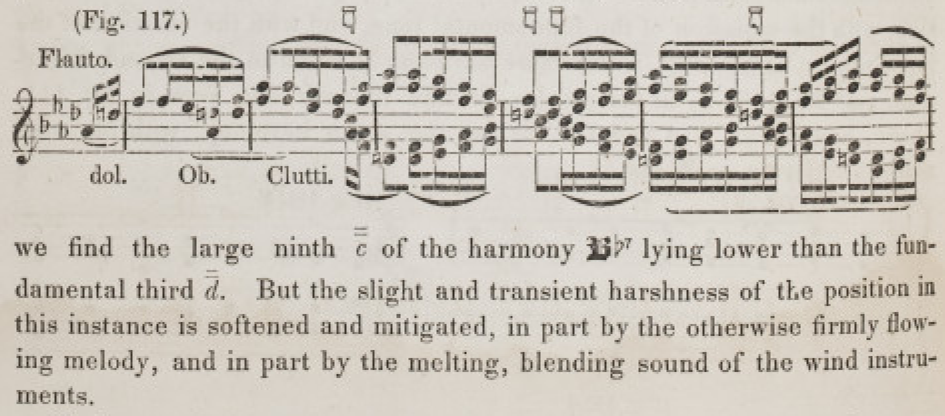
and on this account musical composers are accustomed as far as possible to avoid such positions and to take in their stead rather such positions as the following, fig. 116, *k*.

(Fig. 116. *k*)



Yet in the places marked with a hand (☞) in fig. 117,

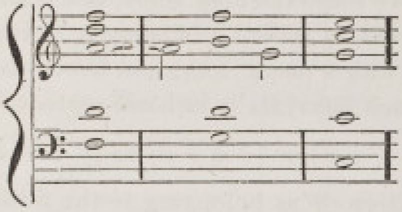
(Fig. 117.)



we find the large ninth $\bar{\bar{c}}$ of the harmony $\mathfrak{B}^{\flat 7}$ lying lower than the fundamental third $\bar{\bar{d}}$. But the slight and transient harshness of the position in this instance is softened and mitigated, in part by the otherwise firmly flowing melody, and in part by the melting, blending sound of the wind instruments.

The large ninth usually sounds still more smoothly when it is at the same time also placed higher than the fundamental fifth, as may be seen by a comparison of the examples in fig. 116, *k.* and *l.* p. 198, with those in fig. 116, *m—p.* p. 198. The softest effect of all is realized when it lies *entirely above,* as e. g. in fig. 116, *n. o. p.* p. 198. (The cause of the less agreeable sound in examples fig. 116, *k.* and *l.* lies in part in the movement of parallel fourths, as will appear hereafter in treating the subject of the carriage of voices.)

It is to be observed, that what has now been said on this subject applies only to *the ninths here mentioned,* namely, the independent ninths, and not to others which are to be brought into view hereafter. Hence the following passage



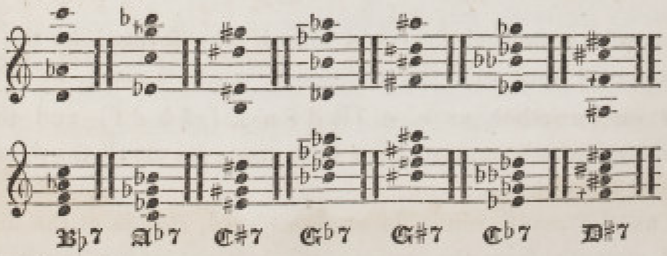
is far from harshness, notwithstanding the tone $\bar{a}$, occurring in the second chord, lies lower than the $\bar{b}$; for, this $\bar{a}$ is not in the present case an independent ninth, but a suspension, of which it is not here in place to speak.

§ 81.

A four-fold chord with the fundamental tone omitted and a ninth substituted therefor, it is often pretty difficult to distinguish. The cases most easily recognized are those of the first inversion, where the base tone is the large third of the fundamental tone and hence the large under third[*] of the base tone is the fundamental tone. In this way one recognizes in fig. 116, *k.* p. 198, the fundamental harmony 𝔊^{7}, and he does this with special ease in fig. 116, *n.* p. 198, where the tones stand above one another by thirds.

But in case the tones do not lie by thirds above one another, the finding of the fundamental harmony is less easy. The less expert can furnish themselves a facility by mentally conceiving the intervals to be so transposed as that they come to stand above one another by thirds. In order, e. g. to find the fundamental harmony of the chords written in the upper staff in fig. 118,

(Fig. 118.)



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[*] The under-third is the third below, the third reckoned downwards from any given tone.—Tr.

one changes and transposes them until the notes become arranged in thirds, as in the staff below. In this way one comes to have nothing but first inversions of principal four-fold chords with large added ninths, and omitted fundamental tones arranged in the position of thirds; consequently the fundamental harmonies of these chords are as follows: $\mathfrak{B}\flat^{7}$, $\mathfrak{A}\flat^{7}$, $\mathfrak{C}\sharp^{7}$, $\mathfrak{G}\flat^{7}$, $\mathfrak{G}\sharp^{7}$, $\mathfrak{C}\flat^{7}$, $\mathfrak{D}\sharp^{7}$.

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§ 82.

The reader must have observed long since, that such a chord, considered in reference to the tones of which it is composed, is entirely similar to an actual four-fold chord with a small fifth, and hence every harmonic combination consisting of such intervals is in itself *equivocal.* For, a chord consisting of the tones [B f a $\bar{d}$] or [d b $\bar{f}$ $\bar{a}$] or [f b $\bar{d}$ $\bar{a}$, as e. g. may be regared equally well as belonging to the fundamental harmony of $°\mathfrak{h}^{7}$, or to the fundamental harmony $\mathfrak{G}^{7}$.

If we regard it as $°\mathfrak{h}^{7}$, then the note *b* is the fundamental tone, *d* is the fundamental third, *f* the fundamental fifth, and *a* the fundamental seventh; but if it be regarded as $\mathfrak{G}^{7}$ with the fundamental tone omitted and with the addition of the large ninth, then *b* is the fundamental third, *d* the fundamental fifth, *f* the fundamental seventh, and *a* the ninth. (Compare § 100, at A. 2.)

Though we cannot here fully exhibit the means of showing, to which of the different species above described, one is to regard and treat a combination of tones that may occur with such an appearance, as belonging,—a matter which must be attended to hereafter,—still, what is here said may meanwhile subserve the purpose of calling attention to the perfect external similarity and yet essential difference of the two things, and of showing how essentially changed every thing becomes, according as such a harmonic combination is regarded in the one or the other point of view.

(b.) *Small Independent Ninths.*

§ 83.

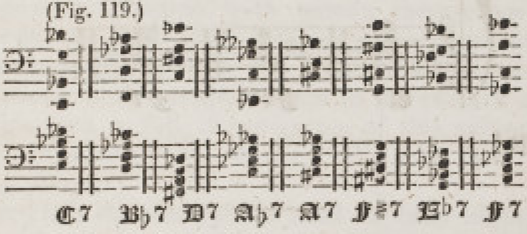
If the tones of a principal four-fold chord, transformed by the omission of the fundamental tone and the addition of a small ninth, be arranged in thirds above one another, as e. g. [B d f a♭], [g♯ b $\bar{d}$ f], and the like, a chord is produced which consists of a base tone, its small third, small fifth, and diminished seventh.

Inasmuch as the small ninth, in such a chord, stands at the distance of a diminished seventh from the proper third, it not unfrequently obtains in musical usage the appellation *diminished seventh chord* or *chord of the diminished seventh.* We will willingly adopt this name in our technical language, though we must not forget meanwhile, that what is here called a seventh is not properly such (not a fundamental seventh,) but is strictly a small ninth, which is here denominated a seventh merely on the ground that, being reckoned from the base tone onward, it is the seventh tone.

§ 84.

The small added ninth, especially in case the fundamental tone is omitted, often, like the large ninth, renders it difficult for the less expert to recognize the fundamental harmony. The method of transposing, however, which was recommended in the case of the large ninth, answers a good purpose here also. (§ 81.)

(Fig. 119.)



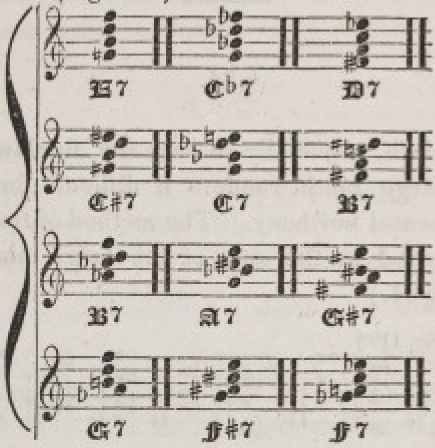
§ 85.

It is moreover worthy of remark, that in such an arrangement of a chord by thirds, each tone is separated from another by the distance of a small third, as e. g. [B d f a♭], or [C♯ E G B♭] and the like. And if we proceed farther with the combination, as e. g, [B d f a♭ b d̄ f̄ ā♭ b̄], or [C♯ E G B♭ c♯ e g b♭ c̄♯], or [E♯ G♯ B d e♯], &c., still we find only intervals of small thirds and superfluous seconds. But since, on the piano-forte, small thirds and superfluous seconds are alike in respect to the number of keys, so in all cases two keys lie between the neighboring tones of such combinations, or, in other words, the tones of such a combination are every where equally distant from each other, (i. e. according to our received system of temperament, Mus. Tr. § XIX.)

For this reason, such a chord may be regarded in four different points of light, according as the keys are named one way or another. If e. g. the tones are named [e♯ g♯ b d̄,] the fundamental harmony is $\mathfrak{C}\sharp^7$. But if we consider the key which in the first case was called *e♯*, as being *f*, the fundamental harmony of the chord as it there stands [f g♯ b d̄] will be $\mathfrak{E}^7$. If again we conceive *g♯* to be *a♭*, the fundamental harmony of the combination in this shape [f a♭ b d̄] becomes $\mathfrak{G}^7$. And finally if we take *b* as c̄♭, thus making the combination [f a♭ c̄♭ d̄], we must regard 𝔅♭^{7} as the fundamental harmony.

In this way there arises again a new species of equivocalness in the case of these harmonies. Fig. 120 exhibits this in a tabular view.

(Fig. 120.)



(Comp. § 100, at B.)

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§ 86.

Since moreover a four-fold chord, transformed by the addition of a small ninth, does not admit of being exhibited without adding a chromatic or transposition sign to at least *one* note, (especially in the case of the so called small or minor modes,) and since therefore at least one of the tones of which the chord consists is always a so called chromatic tone (Mus. Tr. § XVII,) so in this respect every harmony thus formed may be called *a chromatic chord—a chromatic harmony.* (Comp. remark on § XVII, No. 12, of Mus. Tr.)

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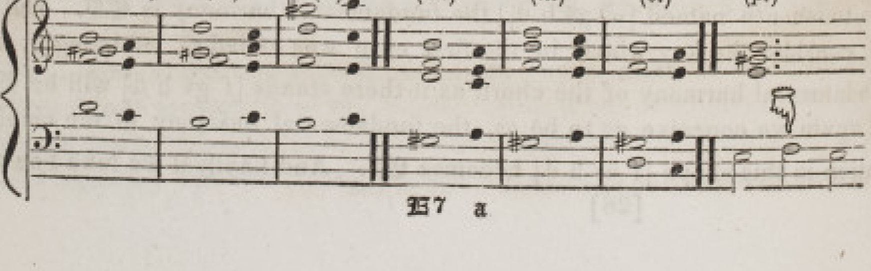
§ 87.

The precaution which was given above in reference to *the large* independent ninths, to place them, wherever it is possible, higher than the third of the fundamental tone, is unnecessary, in the case of *the small* ninths, as fig. 121, *i*—*l*;

(Fig. 121 *i.*)



and it is equally unnecessary to take care that they are placed higher than the fundamental fifth, as fig. 121, *m*, *n* and *o*, opposite. Indeed they may with perfect propriety be placed quite the lowest, in the base, as in fig. 121, *p*, opposite. (The latter might in a manner be denominated *a fourth inversion*, inasmuch as neither the fundamental tone, nor the original third, nor the fifth, nor the seventh, but the ninth is situated in the base.)

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§ 87 ^{bis}

If, in like manner as was done in §§ 55 ^{bis}, 63 ^{bis} and 63 ^{ter}, we would investigate the different distances which occur between the elements of a principal four-fold chord, transformed by the addition of a large or a small ninth, in every possible position, both among themselves generally and in particular between the base tones and the other elements, we should here find a far greater multiplicity than was found in the sections above referred to. (We shall recur to this subject again in the remark on § 99.)

Whether to go into a full investigation of this subject, or not, may be submitted to the pleasure of the reader. We will here limit ourselves to the two following points:

(A.) *What intervals the ninth forms with the other elements* of the harmony, and, vice versa,

(B.) *What intervals the other elements of the harmony* (when they lie higher than the ninth) *make with the ninth.*

(A.)

The ninth forms,—namely,

	the large ninth		*the small ninth*
(*i.*)	with fundamental tone a 2• or 9•,	(*n.*)	with the fundamental tone a •2 or •9,
(*k.*)	" " third a •7,	(*o.*)	" " third a ••7,
(*l.*)	" " fifth a 5•,	(*p.*)	" " fifth a •5,
(*m.*)	" " seventh 3•;	(*q.*)	" " seventh a •3.

(B.)

With the ninth,—namely,

	with the large ninth,		*with the small ninth,*
(*r.*)	the fundamental tone forms a •7,	(*v.*)	the fundamental tone forms a 7•,
(*s.*)	" third " 2•	(*w.*)	" third " 2••,
(*t.*)	" fifth " •4,	(*x.*)	" fifth " 4•,
(*u.*)	" seventh " •6;	(*z.*)	" seventh " 6•.

Table (A.) shows at one view what interval the ninth forms with the base tone in the fundamental position, (in *i* and *n*,) and in the first, second and third inversions (*k*, *l*, *m*, *n*, *o*, *p*, *q*;)—table (B.) exhibits the distances which the other intervals make with the ninth in the fourth inversion. (§ 87.)

We know, moreover, from § 78, that the forms presented in the above tables under the letters *i*, *n*, *r*, and *v* sound in a manner harshly, and from § 80 that the interval in *s* is less adapted to be used, and that even the position *l* sounds at least more smoothly than that in *t*.

§ 87 $^{ter.}$

If, as we did in § 63 ^{quater} in relation to the three and four-fold chords, we should go into an examination of the entire number of the different possible positions or permutations of the five tones of which a four-fold harmony with the added ninth consists, we should find 120 of them.* Since, however, as it has been already remarked, this species of harmony seldom occurs without the omission of an interval (that of the fundamental tone, § 78,) in which case it comes to consist of only *four* tones, which admit of only 24 essential different changes (as already computed in connection with the subject of the four-fold harmony, § 63,) it follows that the large number of 120 different positions has but little of practical applicability, and moreover the same fact is farther shown by still another consideration already adverted to, namely that, as it respects *the large* ninth, all those positions in which the large ninth would stand lower than the fundamental third, are likewise but very little used.

§ 88.

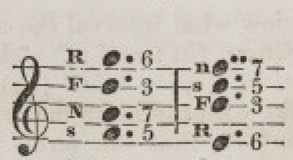
If we go into an examination of the different positions and inversions of the chords now under consideration in a manner similar to that in which we, in §§ 60 and those that follow, investigated the harmonies there mentioned, we shall find as follows:

(1.) *In the first inversion* of a principal four-fold chord with the ninth, the original large third is the base tone; the large fundamental fifth becomes its small third; the principal seventh becomes its small fifth; and the large or small ninth becomes its small or diminished seventh. (The fundamental tone itself, when it is not left out, appears as a small sixth.)

And, vice versa, the tone which appears, in the first inversion, as the base tone, is properly the large third of the fundamental harmony; the small third of the base tone is the large fundamental fifth; the small fifth of the base tone is the principal seventh; the small or diminished seventh of the base tone is the large or small ninth. (In case the sixth of the base tone accompanies it, it [the sixth] is the retained fundamental tone.)

If we take a definite chord as an example, say the principal four fold chord $\mathfrak{G}^7$ with a large ninth, the original large third *b* appears, it is perceived, as the base tone, in the first inversion; the original large fifth *d* becomes the small third of the base tone; the principal seventh *f* becomes the •5 of the base tone; and the large ninth *a* becomes the •7; (the fundamental tone *g* itself, where it is not omitted, appears as •6.)

And, vice versa, in the first inversion of the said harmony, the base tone *b* is the *T;* the small third *d* of the base tone is *F;* the small fifth *f* of the base tone is *s;* the small seventh *a* of the base tone is properly the large ninth *N*, of the fundamental tone. (The small sixth *g* is the retained fundamental tone *R*.)



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*1 × 2 × 3 × 4 × 5 = 120.

Or, if it is preferred to take the four-fold chord 𝕰^7 with small ninth, as an example, its large fundamental third *g*♯ appears as the base tone, in the first inversion; the original large fifth *b* becomes •3 of the base tone; the small fundamental seventh *d* becomes •5 of the base tone, and the small ninth *f* becomes ••7. (The fundamental tone, whenever retained, appears as •6.)

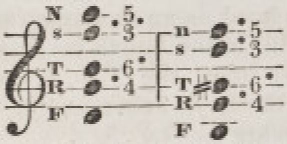
And, vice versa, in the first inversion of said harmony, the base tone *g*♯ is the *T;* the small third *b* of the base tone is *F;* the small fifth *d* of the base tone is *s;* and the diminished seventh *f* is properly the small ninth. (The •6, *e*, is the retained fundamental tone.)

(2.) In *the second inversion* of a principal four-fold chord with a ninth, the original large fifth becomes the base tone; the principal seventh becomes the small third; the large or small ninth becomes the large or small fifth; and the large fundamental third becomes the large sixth. (The fundamental tone itself, when it is not omitted, appears as a small fourth.)

And, vice versa, the tone which appeared, in the second inversion, as the base tone, is the large fifth of the fundamental harmony; the •3 of the base tone is the principal seventh; the large or small fifth of the base tone is the large or small ninth; and the 6• of the base tone is the *T*. (In case the •4 of the base tone appears in connection with it, it is the retained fundamental tone.)

If we take some particular chord as an example, say the principal four-fold chord 𝕲^7 with large ninth, we find that in this second inversion the fifth *d* appears as the base tone; the principal seventh *f* becomes •3 of the base tone; the ninth *a* becomes 5•; and the third *b* becomes 6•. (The fundamental tone *g* itself, when not omitted, appears as •4.)

And, vice versa, in the second inversion of the above harmony, the base tone *d* is the *F;* the small third *f* of the base tone is the principal seventh; the 5• *a* is properly the *N;* and the 6• *b* is the *T*. (The •4 *g* is the retained *R*.)



Or if we select the four-fold chord 𝕰^7 with a small ninth for our example, its fifth, *b*, in its second inversion, appears as the base tone; the principal seventh *d* as •3 of the base tone; the small ninth *f* as •5 of the base tone; and the third, *g*♯, as 6•. (The fundamental tone *e*, when retained, appears as •4.)

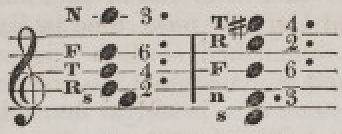
And, vice versa, in the second inversion of this harmony, the base tone, *b*, is the *F;* the •3, *d*, of the base tone is the principal seventh; the •5, *f*, of the base tone is properly the small ninth; and the 6•, *g*♯, is the *T*. (The •4, *e*, is the retained fundamental tone.)

(3.) In *the third inversion* of a principal four-fold chord with a ninth, the principal seventh becomes the base tone; the *T* becomes the 4•; the *F* becomes 6•; and the large or small ninth becomes the 3• or •3. (The fundamental tone itself, when it is not left out appears as 2•.)

And, vice versa, the tone which appears, in the third inversion, as the base tone, is the principal seventh; the 4• of the base tone is *T;* the 6• of the base tone is *F;* the 3• or •3 of the base tone is the large or small ninth. (Whenever the 2• of the base tone appears, it is the retained fundamental tone.)

If we take a particular chord as an example, if you please the principal four-fold chord 𝕲^7 with large ninth, in the third inversion, we find, that the principal seventh *f* appears as the base tone; the *T*, *b*, becomes 4• of the base tone; the *F*, *d*, becomes 6•; and the *N*, *a*, becomes 3•; (the fundamental tone *g* itself, when not omitted, appears as 2•.)

And, vice versa, in the third inversion of the above harmony, the base tone *f* is the *s;* the 4•, *b*, is *T;* the 6•, *d*, is *F;* and the 3•, *a*, is the large ninth. (The 2•, *g*, is the retained *R.*)



Or if we choose for our example the four-fold chord $\mathfrak{E}^7$ with small ninth, its principal seventh, *d*, appears, in the third inversion, as the base tone; the *T*, *g*♯, as 4• of the base tone; the *F*, *b*, as 6• of the base tone; and the small ninth, *f*, as •3. (The fundamental tone itself, *e*, whenever it is retained, appears as 2•.)

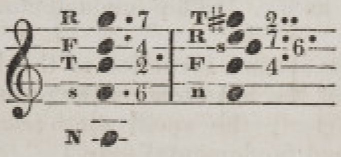
And, vice versa, in the third inversion of this harmony, the base tone, *d*, is the principal seventh; the 4•, *g*♯, of the base tone is *T*; the 6•, *b*, is *F;* and the •3, *f*, is the small ninth. (The 2•, *e*, is the retained fundamental tone.

(4.) Finally, if the ninth itself lies in the base,—a case which may be termed a *fourth inversion*, (§ 87,) the ninth itself appears as the base tone; the *T* becomes the 2• or 2••; the *F* becomes •4 or 4•; and the *s* becomes 6• or •6. (The fundamental tone itself, when not omitted, appears as •7 or 7•.)

And, vice versa, the tone which appears as the base tone in the fourth inversion, is the large or small ninth itself; the 2• or 2•• of the base tone is *T;* the •4 or 4• of the base tone is *F;* the •6 or 6• of the base tone is *s.* (In case the •7 or 7• of the base tone appears, it is the retained fundamental tone itself.)

If we take a particular chord as an example, say the principal four-fold chord $\mathfrak{G}^7$ with a large ninth, in the fourth inversion, we find that the large ninth, *a*, appears as the base tone; the *T*, *b*, becomes 2• of the base tone; the *F*, *d*, becomes •4; and the *s*, *f*, becomes •6. (The fundamental tone itself, *g*, if not omitted, appears as •7.)

And, vice versa, in the fourth inversion of the said harmony, the base tone, *a*, is the large ninth; the 2•, *b*, is *T;* the •4, *d*, is *F;* and the •6, *f*, is *s.* (The •7, *g*, is the retained *R.*)



Or, if we take for an example the principal four-fold chord $\mathfrak{E}^7$ with small ninth, the small ninth, *f*, appears, in this fourth inversion, as the base tone, the *T*, *g*♯, as 2•• of the base tone; the *F*, *b*, as 4• of the base tone; and the *s*, *d*, as 6•. (The fundamental tone, *e*, when retained, appears as 7•.)

And, vice versa, in the fourth inversion of the above harmony, the base tone, *f*, is the small ninth; the 2••, *g*♯, of the base tone is *T;* the 4•, *b*, is *F;* and the 6•, *d*, is the principal seventh. (The 7•, *e*, is the retained *R.*)

As *a useful exercise* for the purpose of rendering the relations of the above changes entirely familiar, the less expert might write out in notes all the possible principal four-fold chords in all the possible inversions, and give to themselves a full and definite account of every note, as e. g.

(1.) The principal four-fold chord 𝕮^{7} with large ninth, in the first inversion. The base tone *e* is the original large third;—*g*, the small third of the base tone, is the large fundamental fifth;—*b*♭, the small fifth of the base tone, is the principal seventh;—*d*, the small seventh of the base tone, is properly the large ninth.

(2.) The four-fold chord 𝕮^{7} with small ninth, in the first inversion. The base tone, *e*, is the original large third, &c.

(3.) The four-fold chord 𝕮^{7} with large ninth, in the second inversion. The base tone *g* is, &c.

(4.) The four-fold chord 𝕮^{7} with small ninth, in the second inversion. The base tone *g*, &c.

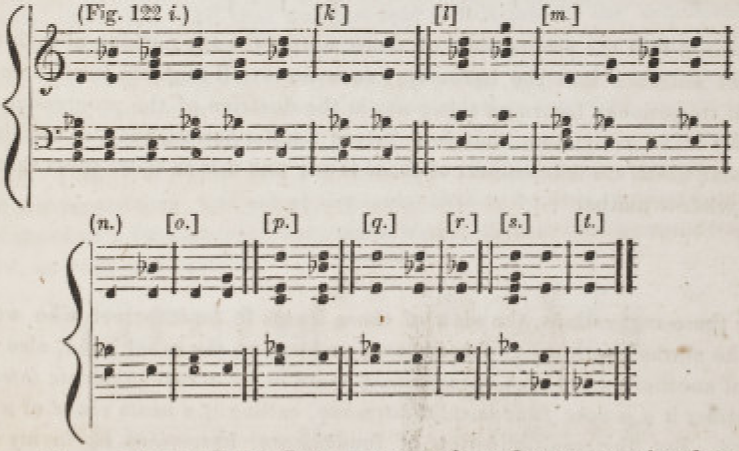
(5.) The four-fold chord 𝕮^{7} with large ninth, in the third inversion. The base tone *b*, &c.

(6.) The four-fold chord 𝕮^{7} with small ninth, in the third inversion. The base tone *b*, &c.

(7.) The four-fold chord 𝕮^{7} with small ninth, (it is here only that a fourth inversion is properly applicable,) in the fourth inversion. The base tone, &c.

(8.) The four-fold chord 𝕮$^{\sharp 7}$ with large ninth, in the first inversion.
(9.) “ “ “ “ with small ninth, “ “ “
(10.) “ “ “ “ with large ninth, in the second inversion.
(11.) “ “ “ “ with small ninth, “ “ “
&c. &c.

After this, one may in the same manner again go through the chords he has passed over, for the purpose of observing in the case of each, upon which of two different fundamental harmonies such and such a harmonic combination might properly depend. The harmonic combinations e. g. in fig. 122, *m. n. o. p. q.* and *r.*



might equally well be $^{\circ}$𝔠^{7} or 𝕮^{7}; we can therefore put under them the designation 𝕮^{7} and under the latter the other designation also $^{\circ}$𝔠^{7}; and the same can be done in the case of all other harmonies of this species. (Compare § 32.) In like manner examples of small ninths may afterwards be gone through with, and both singing and hearing exercises may be connected therewith, as was recommended in § 53.

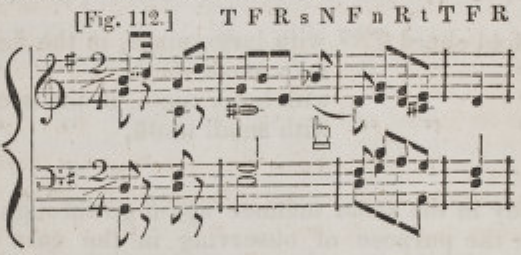
REMARK.

It may be well, so far as it can be done without anticipating too much, here to establish the view which I have taken under the head of *independent ninths*, differing as it does from all that others have heretofore taught.

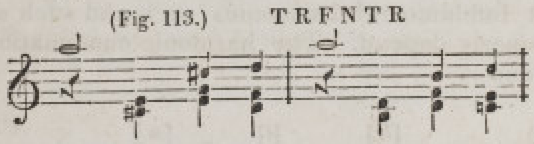
I mean the ninth which has been treated in the foregoing pages as an *independent* ninth, because it is not confined to the conditions of transient notes and notes of suspension,—is not merely an accessory tone of a harmonic interval lying next to it, but may occur *independently* of all this.

It is quite true indeed, that most ninths admit of being explained according to the principles of tones of *transition* and *suspension*, and many theorists* have by this means suffered themselves to be led into the error of explaining *all* ninths in general, as suspensions. But ninths not unfrequently occur which throughout do *not* regulate themselves according to the laws of transitions and suspensions, but proceed in a manner wholly independent of them. It requires but a glance at figs. 103—109, pp. 196 and 197, figs. 112 and 113, below, and fig. 117, p. 198,

[Fig. 112.]



(Fig. 113.)



Cherubini, dirge on Haydn.

to be convinced that the progression of these ninths (to say nothing of their free and independent entrance into the harmony,) does not at all regulate itself according to the laws of transitions; (more on this point in the doctrine of the progression of transient notes.) The conviction therefore forces itself upon us, that, in certain cases, ninths appear which are independent of those laws; and it is in these cases that I name them *independent* ninths.

If, after these suggestions, the view of those seems to be incorrect who would explain all the ninths in a mass as suspensions, we must on the other hand, also examine the view of another party† who *regard every ninth as an actual harmonic interval* and hence consider it *a proper fundamental harmony*, calling it *a ninth chord* or *a seventh-ninth chord*. But this multiplication of fundamental harmonies is, in my opinion, wholly unnecessary and useless; for, a principal four-fold chord or seventh harmony with an added ninth is in all respects, with the exception of this ninth, perfectly like such a chord without this ninth; it has its situation on the same degree of the scale, its seventh is subject to the same laws of progression, as if no ninth were present, and so likewise its third, &c.—and such a harmony with a ninth is most naturally followed by the three-fold harmony of the fourth degree above, just as is the same harmony

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*At their head is *Joh. Ph. Kirnberger*.

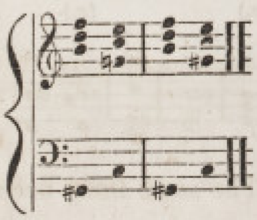
†*Fr. W. Marpurg* is at the head of this school.

without a ninth, &c. (all which will be more fully and particularly treated hereafter in its proper place.) Now in view of all this, there certainly is more reason to explain a four-fold chord with a ninth, merely *as* a four-fold chord with a ninth, than to give it the stamp of a peculiar and distinct fundamental harmony.

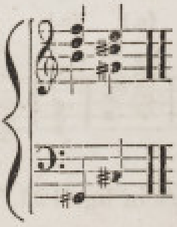
Other musical teachers, again, would explain chords of the species [*B d f a*] *as actual seventh chords*, and accordingly would, e. g. explain the tone *b* in fig. 116, *k—p.* on page 198, as the fundamental note. (§ 82.) But if, in these examples, we find that the chord [*B d f a*] is in all particulars like the four-fold chord 𝔊7 in the first inversion, it certainly is but natural to explain it as such. If we find, namely, that the base tone exhibits no tendency whatever to ascend to the fourth or to descend to the fifth, as does the fundamental tone of a four-fold chord, but most naturally and strongly inclines to proceed a single small degree (or half-step) upwards to the tonic note, just as does the third of the principal four-fold chord,—that, on the other hand, the third of the base tone has exactly the same freedom as the fifth of the principal four-fold chord,—that the small fifth of the base tone shows a tendency to move in the same manner as if it were the principal seventh, and that the seventh of the base tone wears the same character that is usual with the large ninth;—if, finally, we find that the tonic harmony most naturally follows this chord, just as it does the four-fold chord: —then we have all these conclusive reasons for regarding this chord as being that to which in all its particulars it so perfectly corresponds, and not as that to which neither its modulatory progression as a whole, nor the progression of its individual intervals will correspond. (More on this subject hereafter.)

All this, moreover, holds good against the view of those who, as e. g. *Vogler*, would regard also the so called *diminished seventh chord as a peculiar and distinct fundamental chord*, and hence the base note of the same as the fundamental, its third as the fundamental third, &c. All that was just said in relation to the individual intervals, applies here also; fig. 121, p. 202; and it is perceived also, in relation to harmonic succession, that such a chord is always most naturally followed by the three-fold harmony lying next above the base note, while the other four-fold chords require the harmony of the fourth above, which [harmony of the fourth above] is entirely foreign to the chord [*G♯ B d f*], as may be seen from the following example in *J.* To get rid of this inconsistency, and yet at the same time to be able to regard the aforesaid seventh chord as a fundamental one, many would explain the harmonic succession in *K*, below, as good and natural;

(J.)



(K.)



as e. g. *A. F. C. Kollmann*, in his *New Theory, Chap.* 8, § 12, and in his *Practical Guide to Thorough Base, Chap.* 4, § 7.—!—(Compare Remark on § 51.)

One word, in conclusion, on the question, why I represent *the independent ninths as exclusively belonging to only two fundamental harmonies.* The reason is simply this:

I have never observed, that in other harmonies a ninth can appear thus independent, but in these last always merely as an accessory note to an actual harmonic tone, or, as it is usually termed, as a transition or a suspension. This subject also will be more particularly treated hereafter in the doctrine of the progression of ninths. (Compare Remark on § 326.)

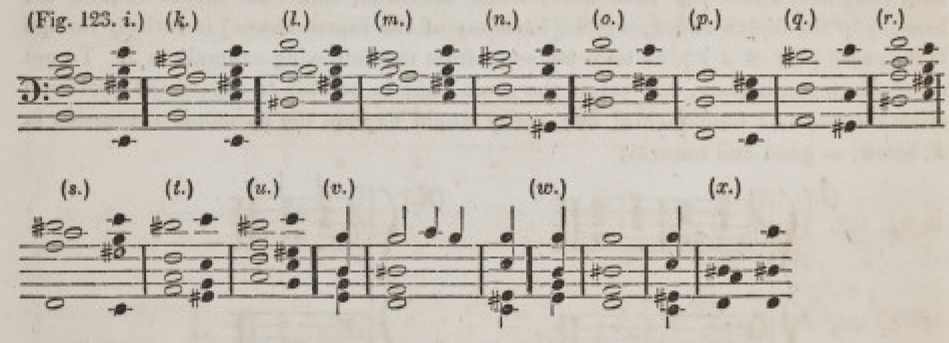
(2.)

TRANSFORMATION OF A HARMONY BY A CHROMATIC ELEVATION OR DEPRESSION OF AN INTERVAL.

§ 89.

In like manner as, in the transformation of chords which has been treated in the preceding sections, we have seen an interval added to a harmony which was foreign to it, so also we not unfrequently find *one of its intervals arbitrarily raised or lowered by a chromatic sign.*

One instance of this kind particularly worthy of remark is the arbitrary chromatic *elevation of the third of the four-fold chord with small fifth.* This harmony often appears, namely, in certain cases (which however cannot be definitely pointed out until hereafter,) transformed in such a way, that, instead of the small third appropriate to it, a tone is employed which constitutes the *large* third of the fundamental tone, as e. g. in the fundamental harmony $^{\circ}\mathfrak{h}^{7}$ the tone *d*♯ instead of *d*. In this way the note $\bar{d}$, appropriate to the fundamental harmony $^{\circ}\mathfrak{h}^{7}$ in fig. 123, *i.*



is changed into $\bar{d}$♯ in fig. 123, *k.* above. The same thing occurs in the inversions in fig. 123, *l.* and those that follow, where throughout $\bar{d}$♯ is arbitrarily used instead of $\bar{d}$.

It might be said that the secondary four-fold chord $^{\circ}\mathfrak{h}^{7}$ assumes in this case a trait of the character of the principal four-fold chord $\mathfrak{B}^{7}$, usurping a characteristic sign of the same, namely the large third.

§ 90.

The above examples, as they here stand, sound indeed somewhat harshly and disagreeably; but this harshness disappears, if we

(A.) *Leave out the fundamental tone,* and

at the same time

(B.) *Place the elevated fundamental third higher than the fundamental fifth;* fig. 123, *p.* and *q.* p. 210.

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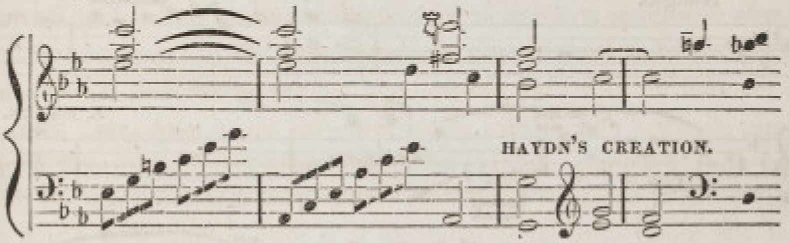
§ 91.

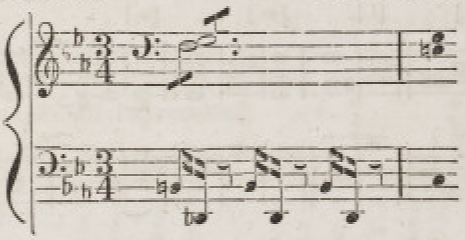
(A.) The omission of the fundamental tone takes place almost uniformly. Examples of the contrary are found, however, in fig. 124, (from the introduction to *Haydn's Creation,*)

(Fig. 124.)



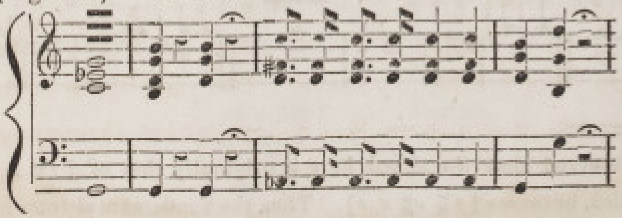
in fig. 125, (from a piano-forte sonata in E♭ by *Beethoven,*)

(Fig. 125.)



in fig. 126, (from *Weber's* Freischütz, [Free-archer,])

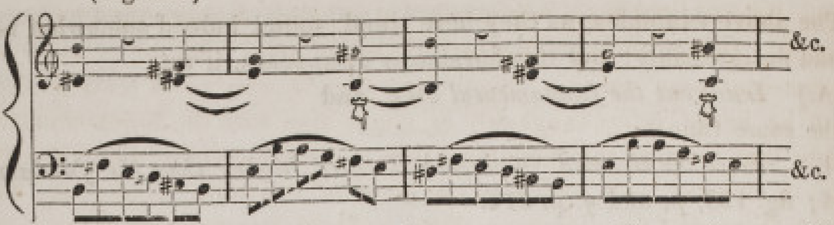
(Fig. 126.)



&c.

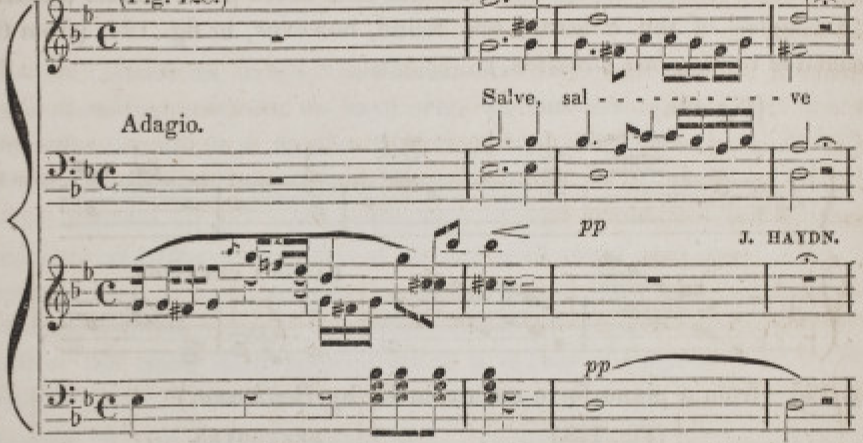
Cases are less rare in which the fundamental tone is at first struck, but soon quitted again, and exchanged for another interval, namely for the fundamental seventh, as in fig. 127, at the chord [$f\sharp\ \bar{c}\ \bar{a}\sharp$].*

(Fig. 127.)

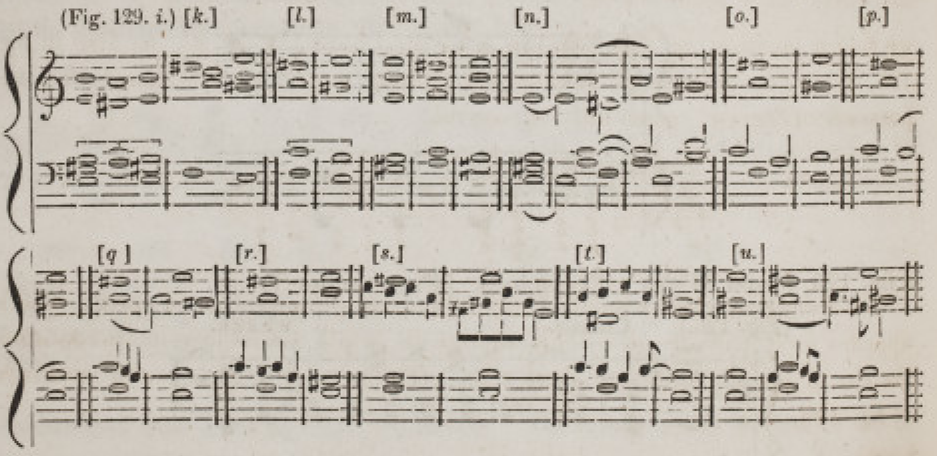


Instead of omitting the fundamental tone we may, if we please, add *the small independent ninth,*—a combination of tones which very frequently occurs and which is probably very familiar to the reader: fig. 123, *r—u.* on page 210, fig. 128, and fig. 129, *i. k. l. m.* below:

(Fig. 128.)



(Fig. 129. *i.*)



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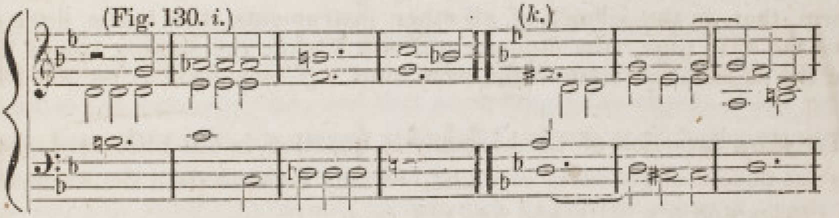
*It will be observed that the chord here is originally that of [$f\sharp\ a\ \bar{c}\ \bar{e}$], and, by sharping the third, becomes [$f\sharp\ a\sharp\ \bar{c}\ \bar{e}$]. Thus the fundamental tone here is $f\sharp$, and the fundamental seventh is $\bar{e}$, or—an octave lower—*e*. Hence it is seen how the example applies in illustrating the rule: the $f\sharp$—the fundamental tone—is struck at the commencement of the chord, but, being only an *eighth* note, it continues but half as long as the other tones of the chord—$\bar{c}$ and $\bar{a}\sharp$, the latter being *quarter* notes, and is then followed by *e*—the fundamental seventh. TR.

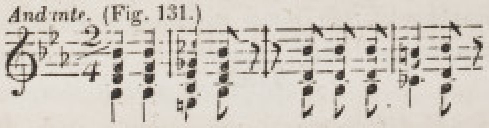
This is the second case in which the independent ninth occurs,—the case briefly adverted to in § 77. It sounds as softly and smoothly in this case, as the fundamental tone, whose place it supplies, would sound harshly and roughly. Indeed the harshness which would arise from the relation of the fundamental tone can be effectually softened only by at least letting the ninth be heard interchangeably in connection with the fundamental tone, and by thus treating the fundamental as if it were employed only for a little time—a moment, as it were—in the place of the ninth, as e. g. fig. 123, *v.* p. 210, instead of fig. 123, *w.* p. 210. (Comp. also fig. 129, *p—u.* p. 212.)

(B.) A chord of the species here under consideration always sounds far more agreeably when its *elevated third is situated higher than its fundamental fifth*, or, in other words, when these two tones form with one another the interval of *a superfluous sixth*, and not that of a *diminished third;* this will appear from a comparison of the examples in figs. 123, *o.* and *r.* with those of the same fig. *p. q. s. t.* on page 210.

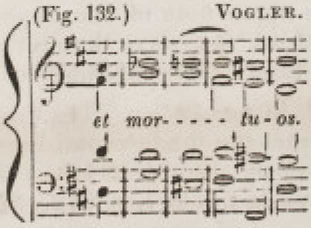
Hence it follows, that such a harmony in *the first inversion*, (as in fig. 123, *r.* p. 210,) can never sound very well, or, in other words, that this species of transformation does not apply well to *the first* inversion of the fourfold chord, because, in the first inversion, the original third always lies *the lowest*. In fig. 130, however,



we find a position of this kind in *k.* in the chord [c♯ ē♭ ḡ], as also in fig. 131, below, in the second measure, probably with a view to render the expression of "*geme*" especially sorrowful.



We frequently find a harmonic combination on paper, so to speak, which appears as if it involved a diminished third, while the impression made upon the ear is entirely different from this. Thus, e. g. in the second measure of fig. 132,

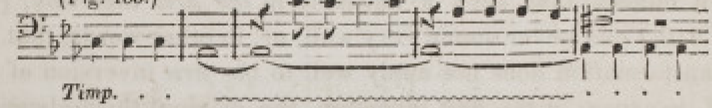


the tones [e♯ g] form, to the eye, a diminished third; but the ear (as we shall learn hereafter) perceives the tone which is written as *e♯*, not *as e♮*, but as *f*, and therefore the chord does not sound harshly, as it must necessarily do, in case it impressed itself on the ear as [e♯ $\bar{d}$ $\ddot{g}$ $\bar{b}$].

The elevation of the third most frequently occurs in the position of *the second inversion*, and this position of such a chord most commonly bears the name of *superfluous sixth-chord*, or *chord of the superfluous sixth*, because the elevated third which it contains makes a superfluous sixth with the base tone. Fig. 123, *m. p. s.* on page 210. It usually appears, moreover, with the fundamental tone omitted, as in fig. 123, *p.* on page 210, or with the ninth substituted for the fundamental, as in fig. 123, *s.* p. 210; rarely with the fundamental tone retained, as in fig. 123, *m.* p. 210, and still more rarely without the seventh, as in fig. 123, *x.* p. 210.

In fig. 133,

(Fig. 133.)



I have attempted to exhibit a chord of this kind, with the omission of both the fundamental tone and of the ninth, and also of the seventh, and in such a form, that, in the silence of all other instruments, the kettle drum only gives the base tone, (the fundamental fifth,) while the singing voices alone give the superfluous sixth of the base tone. (Comp. fig. 235, pp. 404—406.)

The thira inversion of the harmony in question is but little used, though it is not devoid of goodness of sound, as may be seen from the examples in fig. 123, *q.* and *t.* p. 210, and fig. 129, *m.* p. 212.

The fourth inversion, (§ 87,) is little used, and little fit to be used. Fig. 123, *n.* p. 210.

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§ 92.

It not unfrequently proves to be difficult to the less expert, to distinguish this species of harmony. As a facility in this case, it may be observed, that, among the notes of which such a harmony consists, there are always two, which form with each other the interval of a superfluous sixth, or of a diminished third; in fig. 123, e. g. on page 210, we everywhere find either *f*—*d♯*, or *d♯*—*f*. The upper note of the superfluous sixth, or the lower note of the diminished third, is always the elevated third of the fundamental note, and hence the fundamental harmony of the above example is $^\circ\mathfrak{b}^7$. In like manner, we find, in fig. 124, p. 211, the superfluous sixth *A♭*—*f♯*, which accordingly indicates the fundamental harmony $^\circ\mathfrak{D}^7$, and in the same manner, we recognize, in fig. 125, p. 211, the fundamental harmony $^\circ\mathfrak{g}^7$; in fig. 126, p. 211, $^\circ\mathfrak{D}^7$,—in fig. 127, p. 212, $^\circ\mathfrak{f}\sharp^7$,—in fig. 128, p. 212, $^\circ\mathfrak{A}^7$, &c.

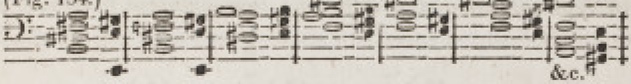
§ 93

Since, moreover, such chords as those which have been described, do not admit of being represented in our system of notes without the prefixing of a chromatic sign to at least *one* note, so every chord of this species, in like manner as the chord of the diminished seventh, (§ 86,) may be called *a chromatic chord.* (General Music Teacher, § XVII, Remark, No. 12.)

§ 94.

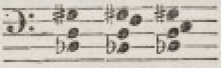
In like manner as in the chords hitherto treated, the small fundamental third of a four-fold chord with a small fifth was arbitrarily transformed into a large third, we may at least conceive to ourselves the fifth of a principal four-fold chord to be arbitrarily lowered, as e. g. the large fifth *f*♯ transformed into a small fifth *f*, in the harmony $\mathfrak{B}^7$, in which case the harmony [B d♯ f♯ a] appears as being changed to [B D♯ f a]; e. g. fig. 134, below:

(Fig. 134.)



One perceives at the first glance, that in such a case exactly the same harmonic combination occurs as is produced by an arbitrary elevation of the third of the harmony $°\mathfrak{h}^7$, and that accordingly the chords above referred to in figs. 123—133, on pages 210—213, all admit of being regarded as principal four-fold chords transformed.

Consequently such a harmonic combination as the following, e. g.



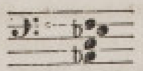
is equivocal, in the circumstance, that it may be explained in two different ways; namely, either as depending upon the fundamental harmony $°\mathfrak{c}^7$, with an elevated third, or as depending upon the harmony $\mathfrak{E}^7$, with a depressed fifth. (Compare § 100, at A. 3.)

We shall find in the sequel, particularly in the doctrine of transition, that harmonic combinations of the species treated in this section admit of being explained according to *yet another* species, by often reducing themselves to mere transitions.

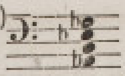
§ 95.

It is, moreover, worthy of remark, that such chords as those in fig. 123, *p*—*u*. on page 210, have, when regarded according to the distances of the keys of a piano-forte, a perfect resemblance to other four-fold chords which are entirely diverse. Compare fig. *J.* with *K.*

(J.)



(K.)



The difference consists, in a manner, only in name: one sounds like the other (and particularly so according to our received system of temperament, Music Teacher, § XIX.) Hence arises again a new equivocalness. (Compare § 100, B.)

Here too, exercises of the kind proposed in § 88, cannot fail to be useful.

REMARK.

I must here add some farther remarks upon the mode of representation* which I have adopted from § 89 onward to the present place, for the purpose of showing, that it is both *more simple and more natural* than that found in our theories heretofore, and also that it *presents a greater variety of aspects*, and is consequently *more rich* and *fruitful in explanation.*

That it is *more simple*, is sufficiently shown by a single consideration. While according to my mode of representation, the following four different harmonic combinations

		$\bar{b}$	$\bar{\bar{c}}$
(1.) $\bar{b}$	(2.) $\bar{a}$	(3.) $\bar{a}$	(4.). $\bar{a}$
$\bar{d}\sharp$	$\bar{d}\sharp$	$\bar{d}\sharp$	$\bar{d}\sharp$
F	F	F	F

all admit of being derived from *one and the same fundamental harmony, which is already known*, and indeed either from the harmony $^{\circ}\mathfrak{h}^{7}$ with an elevated third, or from the principal four-fold chord $\mathfrak{B}^{7}$ with a depressed fifth; our musical teachers heretofore, on the contrary, conceived themselves obliged to invent four peculiar and distinct fundamental chords for the explanation of these four harmonic combinations, namely: (1.) a so called large-diminished, (2.) a doubly diminished three-fold chord, (3.) and (4.) two seventh harmonies of a similar species:

		a	c
(I.) f	(II.) a	(III.) f	(IV.) a
d♯	f	d♯	f
B	D♯	B	D♯

and, accordingly, the chord which is designated by a figure (1.) above, is here explained as a second inversion of the fundamental harmony (I.); figure (2.) as the first inversion of the fundamental harmony (II.); figure (3.) as the second inversion of the fundamental harmony (III.); and figure (4:) as the first inversion of (IV.). Now on the question, which of the two offers the advantages of the greater *simplicity*, no one can be at a loss to decide. (Comp. the remark on § 51.)

So also does my mode of explanation show itself, with equal clearness, to be *more in conformity with the nature of the thing*, than the old method, and that too in many particulars.

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* This mode of representation, which coincides in part with *Kirnberger's* in d. W. Grds. § 15, was first proposed and employed by me in the first volume of this Theory, which appeared in the year 1817, pp. 130 and 177, and in the third volume, p. 215, and may be considered as received ever since that time; it has at least been adopted by the modern writers, though without naming me in the case.

In the first place, it sounds rather strangely, to hear the term *fundamental harmony* predicated of combinations of tones which are not found associated together in the scale of *any one key whatever*, as [F d♯ b], [F d♯ a], [F d♯ a b] and [F d♯ a $\bar{c}$].

In the second place, these fundamental harmonies, and especially that in No. IV, if they were to be recognized as such, would depart, in respect to harmonic succession, from the nature of all other harmonies: for, in supposing the fundamental harmony No. IV to form the basis of the chord No 4, and the tone *D♯* to be the fundamental tone, we are opposed by all the inconsistencies and absurdities which we have censured above in respect to other pretended fundamental harmonies, (in the remark on § 88,) while, on the contrary, as soon as all four combinations are regarded as depending upon °𝔥^7 or 𝔅^7, it becomes perfectly natural that they all require the three-fold chord of 𝔈.

And if, *thirdly*, the progression of the individual intervals of these combinations is taken into the account, and it is found, that every thing agrees to the fact, as, according to this latter view, it certainly must, that in all the combinations of Nos. 2 to 4, above, the tone $\bar{a}$ inclines to proceed exactly according to the laws for the progression of sevenths, while the tone $\bar{\bar{c}}$, in each instance, demeans itself as a small ninth &c.,—if this also be taken into the account, certainly every doubt must be dispelled.

Finally, as to the affirmation made in the commencement of this remark, that my mode of representing the chords in question has *more variety of aspect* and is therefore *more rich* and *fruitful in explanation*, I must refer, in part, to § 94 above, and in part and indeed chiefly to developements which will hereafter be made in the course of the work.

The fact, moreover, that this whole species of transformation admits of being explained as consisting of mere transition notes, will be mentioned farther on (§ 406.)

I have entirely omitted to mention, moreover, in the foregoing paragraphs, the fact that theorists* explain the use of the chords here under consideration, and especially that of the chord of the superfluous sixth, in the so called *strict mode of writing*, and particularly in *the church style*, AS DISALLOWED. I might easily despatch this subject at once, by referring to passages hitherto quoted from the classic musical composers. *J. Haydn*, e. g. in his soul-stirring "*Salve Regina*," (which is, perhaps, more truly of the church music character, than any of his other church pieces,) after a prelude of ten measures, commences the singing voices in a free manner with the chord of the superfluous sixth, fig. 128, p. 212; and surely no one will be profane and base enough to censure this angelic song! I might satisfy myself with simply referring to this and to many other like authorities. Since, however, the expressions *allowed* and *forbidden* in this or that style meet us at every glance into the theoretical books hitherto published, I will here take occasion to explain myself once for all on this subject. *In the first place*, then, as it respects the distinction between *strict* and *free* style, I will here only confess beforehand (what I propose hereafter more fully to develope in its proper place, namely in connection with the subject of *Aesthetics*) that I think but little of this whole distinction, and least of all of those technical theories which say: "this or that is forbidden in the strict style, but is allowed in the free." Whatever sounds positively ill, theory should forbid every where; but that which sounds well, can rationally be forbidden no-where. Accordingly, if a prohibition is really well founded, *that style only* is good which avoids what is forbidden, and every other, which, less scrupulous, violates that principle—steps over upon that forbidden ground, is necessarily a faulty style—the so called *free* style, i. e. a style *contrary to good rule*, and of course a *bad* style, or, to say the least, a worse one than the other.

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*E. g. *Marpurg* in s. Generalb. II. 2. Abschn. 2 und 3. Absatz. Seite 125, Art. 5. § 2, &c.

As it respects, in particular, *the secular* or *profane*, and *the church* or *sacred style*, I have very much too high an opinion of the latter to regard it as essentially dependent upon such technical prohibitions. Woe to the dignity of the church style, if its distinction from the profane, is to be sought in its being prohibited the use of this or that technical material! What would a sensible painter say, if a theorist were to teach him, that in painting a spiritual picture he must use no red, no green, and no fire-color,—or that he must allow no two lines to occur in the picture which would form with each other an angle of so and so many degrees?! *Perhaps*, indeed, in some cases he will not see fit, in a picture of the child in the manger, to blend the purple color in the harmony of shadings, but, suppose he does not use it in this particular case, will he for this reason be guilty of so gross an impropriety as to condemn its use *in general for a religious picture?* and thus of course even in *a glorification?* or a sharp angle in *a crucifixion* or *scourging?* (Upon the essential nature of the church style, compare moreover my treatise in the third volume of the periodical *Cäcilia*, 5th year, 1825, page 173.)

Finally, something requires to be said in relation to the fact, that many theorists forbid *chords of the species now under consideration, in certain positions*, which I have not myself, in the foregoing paragraphs, forbidden. Thus, e, g. *Marpurg**, and after him *Henry Christian Koch*,† teaches that the so called doubly diminished three-fold chord [d♯ f a] in the fourth-sixth position,‡ thus e. g. [A f d♯,] is not in practice [" in der *praxi*"] to be used.—This again is *very* incorrect, as is shown even by fig. 123, *q*, p. 210, to say nothing of other proof. It is true indeed that in the position above named [A d♯ f,] this chord sounds harshly; but this is not due to the so called sixth-fourth position, but to the diminished third [d♯ f] already considered in § 91, (B.)

With equal inaccuracy *Koch*§ teaches, that the (proposed) seventh harmony [D♯ F A c] is to be used only in the first inversion [F A c d♯]. According to this, the example [A c f d♯] would be unusable! fig. 123, *t*, p. 210; while at the same time it is only such positions as [A c d♯ f] that sound harshly, and these on the ground of their diminished third.

It is here very clearly seen, how the inventors of the above mentioned prohibition of the fourth-sixth and the third-fourth-sixth position allow themselves to be deceived by one-sided and partial views! They unquestionably had in their eye, at the time of writing, those very combinations in which diminished thirds happened to occur, and, without observing that the badness of sound in this particular case arose from the diminished third, and instead of forbidding simply *this*, they were short-sighted enough to look for the cause of the imperfection of sound in the fourth-sixth or third-fourth position in the gross, and inconsiderate enough to proclaim the immature result of such a partial, limited, observation, as a universal prohibitory law!

Thus the teachers of the art (I do not say all this merely on the ground of the case before us, which is really one of very little importance, but as a general remark once for all, because our books of instruction in the art teem with prohibitions and directions of a like stamp, as an ordinary and general fact!)—have, by an unadvised stamping of partially true but yet essentially misconceived observations proposed as general rules, loaded the doctrines of the art by degrees with an unfortunate mass of groundless prohibitions, which, as needless fetters, can only injure the art without benefitting it, and which we may in a thousand cases freely violate without in the least offending the ear. This fact is the more striking, inasmuch as these teachers, and particularly

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* In s. Generalbass, I. Theil, 1. Abschn. 3. Absatz, § 27, S. 44, Ziff. 2.

† In s. Anl. z. Compos. 1. Bd. S. 79.

‡ i. e. in the second inversion.—Tr.

§ S. 97.

Koch,* treat such chords as [f a b $\bar{d}\sharp$], and so also† the chords [D♯ f a], [D♯ f a $\bar{c}$], and [F a b $\bar{d}^{\sharp}$], &c., which sound very harshly even to one with the most indifferent ear, §§ 90, 91,—as usable chords and omit to make the slightest mention of their harshness;—a fact which at least proves that the above mentioned fruitfulness of these law-giving masters in prohibitions is not the result of a particularly delicate ear.

It is not due, therefore, to greater strictness on their side and less scrupulousness on mine, that I do *not* forbid much that is found forbidden in the books of the art now extant. The above example, which is by no means the only one to be noticed, affords a positive proof to the contrary. But it is true, that I do not prohibit to the flower-gardener a whole species of flowers, because in a particular case I happened to discover a wasp in a single one. It certainly is the better course to remove the wasps and let the flowers stand, rather than uproot the latter and yet leave the same vermin to prey at their leisure upon other flowers.

In general,—for I now speak at once both of *great* and of *little strictness*,—the present Theory will be found neither more free nor yet more strict than every other, but just as strict and just as free as any other. I shall call attention to *every* harshness which other writers have left unnoticed, and others again I shall unconditionally forbid. How many or how few harsh or smooth combinations of tones *are to be made use of*, for this or that object of art, is a question which it is not the province of *technics* to determine; its decision belongs rather to a correct musical feeling and to the most advanced departments of aesthetics.

§ 95 ^{bis}.

If we were to investigate, in like manner as we did in §§ 55 ^{bis}, 63 ^{bis}, and 87 ^{bis}, the different distances of tones which occur between the elements of a harmonic combination of the species now under consideration in every possible position, we should find numberless new varieties both of the different elements of such harmonic combinations, considered in relation to one another in the general, and of each tone of the same, taken in reference to the base tone, according as this or that tone is placed in the base. (We shall again refer to this variety in the remark on § 99,—which, however, cannot be actually employed in its *full* extent, for reasons which were stated in relation to certain positions in § 91.)

§ 95 ^{ter}.

If, as was done in §§ 55 ^{ter}, 55 ^{quater}, 63 ^{ter}, and 87 ^{ter}, in relation to the harmonies there mentioned, we inquire fully into the number of the different possible positions of the tones of which the species of harmonic combinations of tones *here* under review consist, we should find their entire number to be 120, as it was in § 87 ^{ter}; but many of these, as already observed, are not practicably usable, because on the one hand the fundamental is here also for the most part omitted, and on the other all those positions in which the fundamental fifth would come to stand higher than the third, are little used. (§ 91.)

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* In the place above referred, page 97.

† In seinem Handbuche beim studium der Harmonie, S. 264, 266 und 268.

(3.)

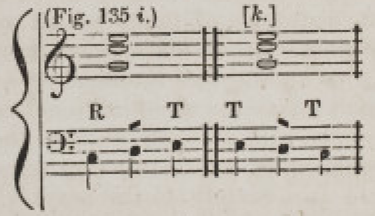
TRANSITION.

§ 96.

One method of introducing tones into a harmony which are entirely foreign to it,—a method of very extensive application,—is that which we denominate *transition.*

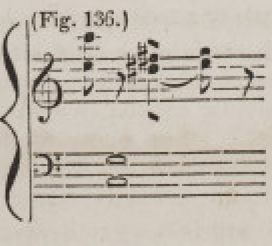
This species of transformation cannot here, indeed, be fully treated; yet, we will acquaint ourselves with some of its leading features by way of anticipation.

Transition depends essentially upon the circumstance, that a voice, before giving a particular tone that belongs to a fundamental harmony, may first give the next higher or lower tone; and since, in doing this, the voice as it were *passes over* the latter on its way to the proper harmonic tone, so this previously struck tone is for this reason called *a transition tone,** or simply *a transition,* and sometimes also *a fore-note* or *previously struck note,* because it is struck in advance of its principal tone—the tone to which it leads. If e. g. in fig. 135, *i,*


(Fig. 135 *i.*)

the base voice moves from the fundamental tone *c*, over the tone *d*—a tone foreign to the harmony, to the third *e*, and if by this means the tones [d g $\bar{c}$ $\bar{\bar{e}}$] sound together at the second quarter note, still this combination, notwithstanding the transient or transition tone *d*, here associated with it, may be regarded as depending upon the fundamental harmony 𝕮.

In like manner in fig. 136,


(Fig. 136.)

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* The word "*transition*" is compounded of the Latin preposition "*trans,*" *over*, and the verb "*eo,*" *to go*, and hence means literally *a going over, a passing over.* Tr.

where, in the upper voice, the transition tone $\bar{\bar{f}}\sharp$ stands before $\bar{\bar{g}}$, and, in the second voice, the transition tone $\bar{\bar{d}}\sharp$ stands before $\bar{\bar{e}}$, the combination [c g d♯ f♯] is to be recognized as the three-fold chord 𝕮, merely transformed or modified by fore-notes.

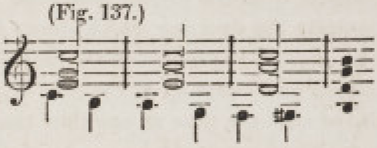
§ 97.

For the purpose of distinctly marking a tone as a transition tone, in the examples which we use, we will place either over or under the note a diagonal stroke (⟋ or ⟍); and to distinguish a fore-note or transition note *from below*, we will use a stroke directed *upward* (⟋),—while, to designate a fore-note *from above*, we will employ a stroke directed downward (⟍). Accordingly, in fig. 135, *i*, p. 220, an upward stroke stands over *d*, while in fig. 135, *k*, p. 220, a downward stroke is employed.

§ 98.

This species of transformation, again, is a rich source of *equivocalness.* For, e g. in fig. 137,

(Fig. 137.)



the tone *b* in the combination [b $\bar{e}$ $\bar{g}$ $\bar{\bar{c}}$], in the first measure, occurs as a transition tone, and, according to this, the fundamental harmony would be 𝕮 with the transition tone *b*. Still, this combination might also be regarded as 𝕮^7. In like manner, the combination [g $\bar{e}$ $\ddot{a}$ $\bar{\bar{c}}$] in the following measure, admits of being regarded either as 𝖆 with the transition tone *g*, or as 𝖆^7, &c.

Whether a particular harmonic combination which, considering the tones of which it consists, has precisely the appearance of a chord consisting of proper harmonic tones, but which, if we regard one or more of its elements as transition tones, shows itself to depend upon an entirely different harmony,—is to be explained as belonging to the one or the other, must, as we shall find in the sequel, be determined in each particular case that occurs, from the connection of the musical sense.

A combination of this kind, which has *the appearance* of a chord consisting of harmonic tones, without actually being such, i. e. without in fact being such to the ear,—we will hereafter denominate AN APPARENT *chord.*

Thus much, in the way of brief hints, and in advance of the general subject, as to the manner in which tones foreign to the harmony may occur as tones of transition. More hereafter in connection with the doctrine of such transitions where it is strictly and fully treated.

(4.)

OTHER TONES FOREIGN TO THE HARMONY.

§ 99.

Besides the above mentioned ways, in which tones entirely foreign to a harmony introduce themselves into it, there are also many other ways in which the same thing is done; but the discussion of these must likewise be deferred till hereafter. (See on this subject § 453, and what follows.)

REMARK.

The foregoing treatment of the doctrine of the transformation of harmonies, and especially that of *the different distances* at which at one time this and at another time that interval of this or that harmony occurs from this or that other interval of the same, (§ 55 $^{bis.}$) and in particular from the lowest tone (the base tone), §§ 60, 61, 62, 63, 63 $^{bis.}$ 63 $^{ter.}$) and particularly the doctrine which shows *how a tone which stands at such and such a particular number of degrees from the base tone may be at one time this and at another time that interval or element of at one time this and at another time that harmony* (e. g. the large third of the base tone at one time the actual fundamental third of a large three-fold harmony, or of a principal or a large four-fold harmony, and at another the fundamental fifth of a small three-fold harmony or of a secondary four-fold harmony, &c.—and again the fundamental seventh of a large four-fold harmony, &c. &c. § 63 $^{ter.}$) I say, the foregoing treatment of this doctrine affords us beforehand a means of determining the question, how much of rationality is exhibited in the fact, that all our books of instruction on musical composition hitherto have, from beginning to end, devoted themselves to the business of showing *how a tone which stands at the distance of such and such a number of degrees from the base tone*, as e. g. the third or the fourth of the base tone, the seventh of the base tone, &c., *may or must be treated, prepared, resolved,—regarded as a so-called consonance or dissonance,—and how it is to be doubled or not doubled, and the like*, and the fact that all our theoretical writers hitherto have made the entire doctrine of musical composition depend solely and exclusively upon the consideration of the distance of this or that tone from the base tone, and, instead of attending to *the essential and fundamental* PROPERTIES of the different harmonic combinations and of each of their elements, they give us rather a troublesome set of mere casuistic *prescriptions* upon the treatment of the intervals of the base tone.

The very first clear view of the thing, even the first and indeed the most transient consideration of the fact, that the interval (distance) at which a tone occurs from the one which happens in a particular instance to lie in the base, is a mere adventitious circumstance—a matter that has no concern whatever with the fundamental properties of the thing, that does not in the least affect its essential nature, and that, e. g. a tone which constitutes the large third of the base tone, may occur in a numberless variety of different ways, (as remarked above,) and may be in one case something essentially and entirely diverse from what it is in this or that other case, &c.,—even the slightest consideration of this plain matter of fact, must, we should suppose, have dissuaded theorists, even in the very first attempt, *from making the theory of musical composition thus consist in a doctrine devoted to the simple point of showing how the third, the fourth, &c. is to be regarded and treated;* and whoever impartially reflects on the subject must regard it as truly astonishing, not indeed that the very first individual who happened to hit upon such an idea did not give it up again in the same hour in which he conceived it, but that even for centuries the very same unfortunate course has been pursued in ALL our books hitherto written on the subject, and has travelled down with implicit faith from generation to generation even to the present time!

As I have already said, even the slighest glance

(1.) at the changes of distance from the base tone which are brought to view in the doctrine of the mere *transformations of position*, and particularly in that of the inversions, (§ 57, § 60 at the end, § 61, 62, 63, 63 *bis.* and especially § 63 *ter.*) and at the fact that a given tone, as e. g. the third or the fourth of the base tone, may be almost endlessly various in its essential character, (of which diversity we commenced a computation in the above quoted § 63 *ter.* but left uncompleted on account of the excessive multiplicity into which it ran, though we found simply in the case of the large and small third of the base tone, that the former is capable of seven different varieties, and the latter of eleven;)—I say, even a transient glance at such a fact shows how very silly an undertaking it is, to attempt to make the doctrine of musical composition consist in a collection of rules upon the treatment of the third, the fourth, &c., and how *impossible* it is that such a course should lead to the truth.

This consideration becomes still farther strengthened, if we reflect, that other transformations give birth to *yet a multitude more* of diversities and resemblances, as e. g.

(2.) the transformation of a principal four-fold chord by the addition of a large ninth, (§ 80), or

(3.) a small ninth, (§ 83), on which point I will, merely by way of example, call attention to the fact, that in the third inversion of such a harmony; [F B d a], or [F B d a♭], the ninths appear as large or small thirds of the base tone and thus the seven and eleven possible varieties mentioned above in (1.), which pertain simply to the third, appear in the present case enhanced by two, namely from 7 to 8 and from 11 to 12, making together 20,—to say nothing of the numerous new possible varieties which such a transformation produces in the case of other intervals, (particularly, e. g. in the case of the large fourths, by the fact that if, say, the small ninth itself is situated in the base, *the fundamental fifth* appears as *the large fourth*, just as does *the fundamental tone* in the second inversion of a diminished three-fold chord, or a four-fold chord with a small fifth, as e. g. [F B d] or [F B d a,] or as does *the fundamental third* in the third inversion of a principal four-fold chord [F B d g],—from which few things it is perceived that the large fourth of the base tone may be at one time *the fundamental tone* of either a diminished three-fold chord or of a four-fold chord with a small fifth, and at another *the fundamental fifth* of a principal four-fold chord, &c.)

(4.) Again, this already pretty large multiplicity obtains a new augmentation by the consideration of the still farther possible varieties which arise, at one time with and at another time without the addition of a ninth, in the transformation of the harmony $°\mathfrak{x}^7$ by the elevation of its fundamental third, or in the transformation of the harmony $\mathfrak{X}^7$ by the depression of its fifth, (§§ 89—94,) and which still farther increase the number of 20 possible varieties exhibited, by way of example in Nos. 1, 2, and 3 above, to compute all which, even to only a limited extent, would be but a most tedious task, and, considering the already sufficiently incomprehensible multiplicity of the possible varieties before us, must appear entirely superfluous and unnecessary,—especially inasmuch as, instead of such detail, even whole masses—whole new classes of yet additional possible varieties of character crowd themselves upon us again from other quarters, when we consider

(5.) that each species of fundamental harmony may be found on more than one degree of the Key, as e. g. a small three-fold harmony may occur either on the first, or the fourth degree of the small [minor] scale, and also on the second, third, or sixth degree of the large [major] scale, (§ 155 at 2 and *b*;) that thus, in saying as we did, e. g. in § 63ter, that the large third of the base tone may be, among other things, the fundamental fifth of a three-fold harmony, we said by far too little: the "among other things" is yet far from being exhausted and must rather be much extended, as follows: the large third of the base tone, may among other things be the fundamental fifth of a small three-fold harmony, *and that too*, either a fundamental fifth of a small three fold harmony of a small [minor] Key, or of a large [major] Key, *and that too* either of the first, or the fourth degree of a small [minor] Key, or of the second, third, or sixth degree of a large [major] Key; and, accordingly, in the same ratio, each of all the other varieties hitherto enumerated, must again be still farther multiplied! If we bring still farther into the estimate, the fact,

(6.) that, as appears from the doctrine of transitions, tones of transition and other tones foreign to the harmony, particularly suspensions, may occur at *every* distance from the base tone, and accordingly *every* interval, at whatever distance from the base tone, may be a transition, accessory, or suspension tone to this or that interval of this or that fundamental harmony of this or that degree of this or that large [major] or small [minor] scale, and indeed,

(7.) that the base tone itself may be such a transient, or transition tone of any one of the above mentioned species, and that thus *all* the intervals reckoned from the same, at once change their numerical names, and, losing *all* boundaries and limits, pass into a perfectly immeasurable ocean of incomprehensibility;—

If, I say, all this be considered, it becomes truly unaccountable, how theorists could be blind enough not to see, that it was a perfectly preposterous idea, to think of giving rules which should suit such a boundless diversity of cases,—cases which often have nothing in common with each other except the mere accidental circumstance that the distance of the notes from the base tone amounts to a third, a fourth, and the like, while in their essential nature they are so entirely diverse, that what is true in one or more of these cases, becomes, for that very reason, wholly inappropriate to the rest, and often indeed the very opposite of the truth! Hence, moreover, it seems very strange, that they should not have perceived it to be a most extraordinary act of rashness—a rashness explainable only on the ground of an extremely partial and limited observation—to proceed forthwith to proclaim that which they might perhaps have observed to hold good in some half dozen or a dozen of a hundred possible cases, as a general truth and a rule holding good for the whole hundred cases, when, in application to all the other cases of the kind, the whole mass of which the gentlemen never once thought to examine, they must of course necessarily prove totally untrue.—Hence the numberless inaccuracies and palpable untruths which meet one's eye on the slightest examination of that mass of rules which have arisen in this mischievous way, —hence the laughable quarrels upon the consonance or the dissonance of the fourth,—hence the rule, that all sevenths must be resolved downwards, &c. &c.;—hence all the unhappy ellipses and catachreses, the innumerable exceptions and licenses, and, in short, all the countless inconsistencies and contradictions, of which I have marked only a small number by way of example in different parts of this book, as e. g. in the remarks on §§ X, 103, 107, 221, 242, 312, 314, 320, 324, 341, 379, 392, 426, 429, 451, 452, 453, 454, 521, 522, 539, 574, &c.

The infelicitous idea of founding the doctrine of musical composition upon the intervals of the base tone seems to me very much like an attempt to establish a theory of the knowledge of mankind upon the consideration, whether a man's name begins with the first, with the second, &c., letter of the alphabet, calling those perhaps whose name commences with the second, or with the third letter, &c , *seconds*, *fourths*, &c., and then giving rules to determine how all those persons whose names begin with a letter standing at such and such a distance from the head of the alphabet, are to be regarded, treated and the like.—Now, just as so absurd a doctrine, having respect solely to that which is external and accidental, casting into the shade the observation of the essential, and, in a hundred different ways, essentially different fundamental properties of human nature, and turning the attention *ex-professo* wholly from these, and directing it exclusively to the accidental numbers of the letters, could not possibly be called rational,—just as it would bespeak the grossest short-sightedness in an anthropologist, if, because he had for once observed in the case of half a dozen men whose names began with *B*, that they had this and that character, that they must be treated so and so, &c., he should therefore write in his theory the rule, that men whose names begin with *B* have this and that character, must be treated so and so, and the like,—just as such rules, looking away from the essential and deriving their origin from that which is merely accidental, although indeed they happen to be entirely true in relation to those six men, yet, as *rules*, are utterly false and that too in *as many different ways* as there can be essential diversities of character under one and the same initial letter (essentially different intervals under one and the same distance from the base tone,)—just so a doctrine of musical composition which adjusts its laws to the distances of tones from the base tone, cannot be otherwise than in thousands and thousands of cases false and deceptive.

The fallacy in this case (as is shown in the passages above referred to) is so *palpable*, so *easily recognized*, and indeed absolutely *incapable of eluding notice*, and so numerous cases must necessarily have occurred to the authors of those theories, to contradict the rules inconsiderately laid down by them, that they *must*, with the very slightest attention, have become satisfied of their entire falsity and deceptiveness.

But what shall we think of the fact that they, in spite of the knowledge thus obtruding itself on their view, still do not retract these principles in search of those that are true, but for a century past *have continued* and still *continue* to promulgate principles as true and valid, which prove themselves false by the slightest examination.

Indeed, if musical teachers were not otherwise totally blind, they *could not fail* soon to see, that not only those precepts, in themselves considered, but even the whole *foundation* of their system in general, *the whole idea*, the whole doctrine of musical composition according to the distances of tones, *adjusted to the intervals of the base tone*, is irrational and absurd in the fundamental idea itself, that an exclusive regard being had to the mere contingencies of the distances of the tones can only serve to abstract the attention from *the fundamental properties* of every tone, from its *relation to the fundamental harmony*, at whatsoever distance from the base tone it may at any time appear, and, in a word, from *the fundamental nature* of the tones, and to fix it upon the mere empty external distances of tones,—that hence the adoption of this course, directing itself, as it always does, to the mere unessential, contingent and variable matters, can never lead to real results, *that this course* must accordingly *be given up*, and that in its stead *an entirely different* course must be taken—one founded on that which is real, on the fundamental and essential nature of the tones, independently of the contingence of the ever variable distances of tones,—that *the truth must be sought in another way.*

But what shall we say of the fact that theorists, who, with but very slight attention and very little knowledge, *could not possibly* fail to see this, have, nevertheless, for a whole century past, still continued on in the same old way, and still hand down, from generation to generation, the same false theory?

What moreover shall be said of the fact, that they adopt this course in their teaching, not merely now and then, in a general way, but that, in their theories of musical composition, they teach *almost nothing else* than just this doctrine of the progressions of intervals, so that one finds in our books of instruction, from beginning to end, almost nothing else than merely rules in respect to this or that interval, as if there were really nothing else,—as e. g. almost nothing of all that which constitutes the contents of my second and third volume, particularly of §§ 155 and what follows, §§ 190—225, 226—228, &c.? What shall we say to the fact, that even the few scattered fragments of all those doctrines which [fragments] are to be found in them, consist throughout in nothing else than rules erroneously deduced in a similar way, proving correct indeed in a *few* cases, but *not* correct in innumerable others, and yet, with a most frivolous levity, received without examination, and decided upon in two words, and hence of course proving utterly false, as e. g. the whole doctrine of harmonic successions is made to consist in a single rule which is to hold good of all the thousands of possible harmonic successions!! (See the remark on § 221, and on §§ 242, 312, 379, 429, &c.) And, finally, what shall we say of the fact, that they, thus proffering a doctrine composed from its very foundation of sheer absurdities and inconsistencies, still give it the specious appearance of being built on *the infallible basis of mathematical principles, pretending to a mathematical creation of the scale*, e. g. and *a mathematical settlement of the idea of consonance* and *dissonance*, and the like, while yet after all, the whole of this is but a tissue of rash and hasty deductions from facts but partially true, and of mathematical propositions which, though true indeed in themselves, are utterly irrelevant in the case under consideration. (Remark on § X of Musical Teacher, and on § 103.)

That I have not over-stated things in the foregoing remarks, is but too palpably shown in all the places referred to.

But if such is the state of the case, if these theories are really nothing but an accumulation of rules whose falsity is continually shown by the test of the very best practice, it certainly is not strange that such a doctrine of musical composition comes at last to be a mere butt of derision, or at most a bugbear, to which musical composers, *decori gratia* (for reputation's sake) exhibit a show of veneration, though they never once think of following its laws, as indeed they never ought to; because, those laws are in fact incorrect, and innumerable things are forbidden by them which are in truth perfectly faultless and perfectly agreeable to the ear,—a fact which most palpably demonstrates the inanity of such rules.

My present attempt at a theory of musical composition may not indeed be free from numerous faults, but it shall at least be free from the reproachful *fundamental fault* of seeking out its radical principles by a course so preposterous,—preposterous in the very direction it takes, and hence absolutely incapable, *from its very direction*, of leading to the truth,—and free also from the rashness of proclaiming as fundamental principles and laws, observations pretended to have been duly made, though without being subjected to the test of examination—observations partially true indeed and holding good in some individual cases, but yet untrue and inapplicable in a hundred other cases,—of *still continuing on*, from sheer indolence and in spite of all the palpable evidence to the contrary, in *an erroneous course* that can only lead to delusions, and of extolling such a course as if it were the very way to eternal salvation;—I say, from such a stain at least, my Theory shall be free.

This is properly the *only* peculiar merit that I claim to myself as property, since, on the other hand, I am entirely satisfied that any man who should once have struck upon the way that has now happened to be first trodden by myself, namely, that of observing the real and fundamental properties of the tones and their relation to the fundamental harmony, instead of the infelicitous observance of the mere distances of the tones,—that of independent personal thought and reflection, instead of a servile echoing of another's rules which owe their own origin only to the want of thought,—that of a complete survey of the field of musical doctrine, and, accordingly, of those parts of it of which hitherto nothing had been known—nothing had been introduced into the books of instruction, as if they had really no existence, &c.,—I say, I am entirely satisfied, that any other man who should have struck upon this method, first indeed pursued by myself, might have written my Theory as well, and perhaps even far better, than I have myself been able to write it, doing it, as I have done it, as a subordinate labor amidst an hundred other heterogeneous principal engagements; and indeed I might say, that, in this respect, it is no art at all to construct a theory, which should be, I will not say, good, true, and correct, but at least beyond all comparison more correct, true, and rational, and more applicable in practice, than any ever could have been, constructed after the manner hitherto pursued.

DIVISION IV.

VIEW OF THE EQUIVOCALNESSES ARISING FROM THE TRANSFORMATIONS OF THE FUNDAMENTAL HARMONIES.

§ 100.

In the course of the different transformations of the fundamental harmonies heretofore mentioned, we have several times seen harmonic combinations arise which were most perfectly similar to other harmonies, or to other transformations of the same, and have found that thus not unfrequently one and the same harmonic combination may be regarded as depending at one time upon one fundamental harmony, and at another time upon another.

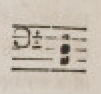
The fact here mentioned, namely the fact that one and the same harmonic combination may be derived from different fundamental harmonies, we will denominate, in general, *harmonic equivocalness*, or *equivocalness in respect to the German letter* [English black letter], because the fundamental harmonies are designated by German letters [English black letters.]

A more close examination leads us to distinguish two subordinate species, which we will designate by the appellations—*simply harmonic* and *enharmonic* equivocalness.

(A.) *Merely Harmonic Equivocalness.*

In the first place, we have seen cases in which two different fundamental harmonies became, by means of the transformation of the one or the other, or of both together, so similar to each other in appearance as to both consist of precisely the same notes. The equivocalnesses referred to in §§ 72, 82 and 98, are of this species.

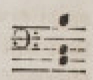
(1.) Take, e. g. the chord . . . . . .



which may be, (according to § 50, α, 3,)
either . . . . $^{\circ}\mathfrak{h}$,
or, (according to § 72,) . . . . . . $\mathfrak{G}^7$,

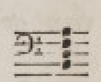
In the last case the chord would be in its second inversion, with the omission of the fundamental note.

So also the harmonic combination . . . .



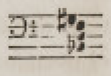
may either depend upon the fundamental harmony . . $\mathfrak{G}$,
or upon that of . . . . $\mathfrak{G}^7$,
or " " . . . . $^{\circ}\mathfrak{h}$,
or " " . . . . $^{\circ}\mathfrak{h}^7$,
or " " . . . . $\mathfrak{h}$,
or " " . . . . $\mathfrak{h}^7$,
or " " . . . . $\mathfrak{E}^7$,
or " " . . . . $\mathfrak{e}^7$,
&c. &c. (§ 63 *ter*, § 72,—Compare the remark on § 99.)

(2.) The chord . . . . . .



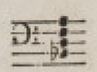
may be at one time, (according to § 50, β, 3,) . . . $^{\circ}\mathfrak{h}^7$,
at another time, (according to §§ 78, 82,) . . . $\mathfrak{G}^7$,
with the omission of the fundamental tone and the addition of the large ninth.

(3.) The harmonic combination . . . .



depends either upon the fundamental harmony . . . $^{\circ}\mathfrak{e}^7$,
with an arbitrarily raised third, (§ 89,)
or upon . . . . $\mathfrak{E}^7$,
with a depressed fifth, (§ 94.)

(4.) The combination . . . . .



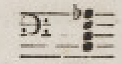
may at one time, (according to § 50, β, 4,) be regarded as . . $\mathfrak{B}\flat^7$,
at another time as . . . . $\mathfrak{B}\flat$,
(§ 50.)
with the transition tone *a*,
or again as . . . . $\mathfrak{g}^7$,
in the first inversion, in which case the tone *a* would be a transition tone before *g*, &c. (§§ 99, 343 and what follows, and 441.)

The several species of harmonic equivocalness here mentioned under (A.) we will denominate in contradistinction from those which follow, *merely or simply harmonic equivocalness.*

(B.) *Enharmonic Equivocalness.*

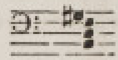
But, in the second place, we have seen, that by the transformation of a harmony, those combinations arise whose elements differ from those of an entirely different fundamental harmony only by an enharmonic distinction, and hence, in a manner, only in name, or, in other words, that two different fundamental harmonies may become so similar to each other, by transformations, that (in our system of temperament) the one sounds precisely like the other, although their individual tones are called by other names and written with other notes. This is the case in the chords referred to in §§ 85 and 95, and partly also in those in § 94. Since, e. g. the tone *a♭* sounds like *g♯*, *f* like *e♯*, &c. it follows that also the chord [B d f a♭] sounds like [B d f g♯], or like [B d e♯ g♯], &c. (§ 85.)

The combination in question, e. g. sounds as . . .



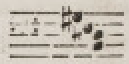
if its fundamental harmony is . . . . $\mathfrak{G}^7$;

as . . . .



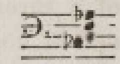
if its fundamental harmony is . . . . $\mathfrak{E}$;

as . . . .



if its fundamental harmony is . . . . $\mathfrak{C}^{\sharp 7}$;

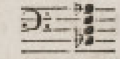
as . . . .



if its fundamental harmony is . . . . $\mathfrak{B}\flat^7$,
[Compare § 85.)

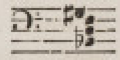
In like manner, the chord [B♭ d f a♭] sounds as [B♭ d f g♯],—(§ 95) One and the same harmonic combination may therefore be (§ 50, *β*, 1,) at

one time . . . .



and then the fundamental harmony is . . . . $\mathfrak{B}\flat^7$;

or at another time . . . .



and then its fundamental harmony is
either (§ 89) . . . . $^\circ\mathfrak{e}^7$,
or (§ 94) . . . . $\mathfrak{E}^7$.

This *second* species of harmonic equivocalness, since it depends upon an enharmonic similarity, we will term *enharmonic equivocalness.*

In the sequel we shall find the aforementioned equivocalnesses to be, not only very important and fruitful in their developements, but also to be copious and inestimable sources of harmonic richness, of easy harmonic turns, and of a widely effective variegation of the harmonic web.

DIVISION V.

CONSONANT AND DISSONANT CHORDS AND TONES.

§ 101.

Teachers of the musical art usually divide the entire mass of all the harmonies into *consonant* and *dissonant*,—in German, *well sounding* and *ill sounding*,—[*wohlklingende* und *übelklingende.*]

Though I do not think much of this usually adopted division, yet I think it best to inform my readers, rather in the way of historical narration, what chords are usually called consonant, and what ones are termed dissonant.

That harmony is denominated *consonant* in which none but so called consonances or consonant tones occur, while that is termed a *dissonant* chord which contains one or more so called dissonances or dissonant tones.

Consonances or consonant tones are those which constitute the elements of a three-fold harmony, thus the fundamental tone, its third and its fifth, and of course the higher and lower octaves of these; and accordingly the only consonant combination of tones is the three-fold harmony. Every other tone, on the contrary, is called dissonant, and hence every combination is dissonant, in which any other tone occurs, than the fundamental tone, its third, and the fundamental fifth.

For the purpose of comparing the above described division of the whole kingdom of tones into consonant and dissonant, with the distinction which we have hitherto made between harmonic tones and tones foreign to the harmony, the following table may be useful:

Harmonic tones,	Fundamental tone, its third, its fifth,	*Consonances.*
	its seventh.	*Dissonances.*
Foreign to the harmony,—every other tone.		

That is to say, the elements of a fundamental harmony are universally only

the fundamental tone,
its third,
its fifth, and
its seventh.

Every other tone whatever that may occur in a harmonic combination, is not an element of the fundamental harmony, and is a tone foreign to the harmony. In the division of the tones into consonant and dissonant, the first three species of harmonic tones, namely,

the fundamental tone,
its third, and
its fifth,

fall into one class, under the name of consonances, and the other class stands contradistinguished from this, under the name of dissonances—a class which embraces (*a.*) the fourth species of harmonic tones, the seventh, and also (*b.*) all the tones foreign to the harmony.

As the class of dissonances consists partly of harmonic tones and partly of tones which are foreign to the harmony, *so* the former might conveniently be called *harmonic dissonances*, and the latter *dissonances foreign to the harmony.* Instead of this name, however, it is more usual to call the former *essential* dissonances, and the latter *accidental* dissonances.

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§ 102.

In the case of *an interval which one tone forms with another*—in the distance of the one from the other, we can *sometimes* recognize the fact that *one of them is a dissonant tone*, and thus far we can, as it were, speak of *dissonant and consonant distances of tones.*

Of two tones, namely, which form with one another some other distance than a large or small third, fourth, fifth, or sixth, (the pure octave of these is understood with them,) one at least is always no element of a three-fold harmony, and hence is a dissonant tone; (for, let the tones of which a three-fold harmony consists be transposed in all possible ways, and still it never happens that two of them form a seventh, a second, or any diminished or superfluous interval with one another, but always only large or small thirds or sixths, and large or small fourths or fifths,—(§ 55, *bis*, under 1;) and every chord in which two tones sound which form some other interval with one another, is always a dissonant chord.

It is to be here observed, however, that the characteristic mark above given is *merely a negative one*, and that we cannot reverse the proposition and say, two tones which stand at the distance of a large or a small third, sixth, &c. from each other are always both consonant; for in the first inversion of the harmony $\mathfrak{G}^7$, e. g. the base tone *B♭* and the tone *f* form a large or small fifth, and yet this *f*, being the original seventh, is still dissonant; and accordingly it cannot be said in general: "*the fifth is never a dissonance, but always a consonance.*"

Still less, secondly, can it be known from the distance of two tones from each other, *which of the two* is the dissonant one, or whether *both* of the tones even be not dissonant. We should take care, therefore, not to receive it as literally true, if we hear it said (as indeed we often enough do,) that "a tone which is a superfluous fifth or a second higher than another, is a dissonance," or briefly, that "the superfluous second, or fifth, and the like, is a dissonance." Take, for example, the chord [A♭ d f b]. The proper third, *b*, in this case, forms a superfluous second; but yet *b is not this superfluous second*, but the base tone itself is the dissonant one.—If the same harmony be put into the third inversion—[f a♭ b d̄], *f* and *a♭* form a amall third, and in this instance *both* tones are dissonances, the *f* as the fundamental seventh, the *a♭* the small ninth of the fundamental tone.

Thus the proposition is true only with the above described limitation, and consequently only in the form in which it was expressed in the commencement of this section. (Compare the Remark on § 103.)

§ 103.

Many musical teachers call *the fifth of the diminished three-fold chord also dissonant*, and, accordingly, *the diminished three-fold harmony a dissonant harmony*. If this be admitted, the definition given in § 101 must be altered thus: every tone is dissonant, except the fundamental tone, its third, and its large fifth; and the characteristic sign given in § 102 must be expressed in the following manner: of two tones which form with each other some other interval than a large or small third, or sixth, *small* fourth, or *large* fifth, or pure octave, (thus a second or seventh, *a small fifth*, *a large fourth*, or some other superfluous or diminished interval,) one is always a dissonant tone: in which case, again, the limitations suggested in the foregoing section must not be overlooked.

Others spin out the distinction between consonances and dissonances still more finely, and distinguish *perfect* and *imperfect consonances*, and also *perfect* and *imperfect dissonances*,—and again *altered dissonances*,—*principal dissonances*, *subordinate* or *secondary dissonances*,—*pseudo* [false] *consonances*, *pseudo* [false] *dissonances*, &c. and then quarrel among themselves on the question, what is to be reckoned in this and what in that division or subdivision.

Far from us be the lot of plunging into such fathomless erudition! It fortunately happens that we have no occasion for it in our Theory; for, we have not a single precept to give which holds good of all the dissonances and only of the dissonances, or which applies to all the consonances and only to these; and thus we could conveniently spare the whole distinction of consonances and dissonances.

In order, however, still to derive *some* advantage from the attention heretofore bestowed upon this distinction, we will at least do so much as to employ it for the enrichment of our technical vocabulary, since the technical word *consonance* always affords us a convenient *common name for the fundamental tone, its proper third and fifth*, while the word *dissonance* gives us a name for every tone which is not the fundamental tone, nor its third, nor its fifth, *but is something else*.

REMARK.

Among all my views, differing from those commonly received, perhaps none will appear more striking at first sight, or will more seriously call for an apology and a more particular confirmation, than those which I have above ventured to express in relation to the doctrine of consonances and dissonances. I am therefore laid under the necessity of at least examining, with some degree of fullness how far the division of the whole kingdom of tones into two classes, called consonant and dissonant, (I.) is *in itself founded in the nature of things*, and, (II.) *how far it is of practical utility.*

(I.) *As it respects the ground and the value of this distinction in itself considered*, it certainly receives no recommendation in the outset from the fact that three species of harmonic tones, namely the fundamental tone, the third and the fifth, constitute the one class, while the fourth species of harmonic tones, namely the sevenths, is referred to the other class, and is there, united with tones of all sorts which are foreign to the harmony, to form one class with which it nevertheless has not a single essential and distinguishing characteristic in common, except simply the negative fact that its tones are not the fundamental tone, the fundamental third, or the fundamental fifth.

If, e. g. in order to divide the letters of our alphabet into two classes, one were to throw the three vowels *A*, *E*, *I*, into the one class, and all the letters into the second class which are not *A*, *E*, or *I*, we should in the very outset conceive a distrust towards the value of such a classification.

But if we go more deeply and particularly into the foundation of the thing itself, and inquire for a distinguishing ground of division, for a sound and satisfactory definition of what is to be understood by consonance and dissonance, we shall find throughout but a very unsatisfactory answer.

(*A.*) Would we, as many have done, put the ground of division in the large or small degree of *melodiousness* or *goodness of sound*, and say: a consonance is a combination of tones which makes an *agreeable*, while a dissonance is one which makes a *disagreeable* impression upon our ear, and thus the former is *a well sounding chord*, but the latter is an ill sounding chord? the reply is, this is all false. Were it true that consonances sound better than dissonances, then it would follow that music would be so much the more agreeable in sound, the more consonances and the fewer dissonances should occur in it, and vice versa; and it follows farther, that inasmuch as in the fine art of melodious or agreeable sound, strictly every thing ought to sound *as well as possible* and nothing should sound *ill at all*, so a piece of music, in order to be in the highest degree conformable to the principles of the art, must contain as few dissonances as possible.—But the case by no means stands thus; on the contrary, the so called *ill sounding chords*, taken in the harmonic web, sound, as is well known, strikingly well, and thus the above mentioned ground of division and the definition corresponding to it, amount to nothing, because they throughout depend upon false suppositions.

But if, after this examination, it were still worth a farther investigation, it would at once occur, that the whole essence of this ground of division turns merely upon *the more* or *the less*,—a circumstance which, from its very nature, is incapable of furnishing any firm and well defined boundary line. For, I should like to see the individual who would come forward and mark out the boundaries where the more well sounding ceases, and the less well sounding begins,—and would show what combinations of tones are to be regarded as lying on this side, and what as lying on that side of the limits?

(*B.*) Not much more valid than the ground of division and the definition connected with it, which we have examined above, are those which are based on the mathematical computation of *the relations of vibrations.*—We are taught that two tones are consonant, if they stand in the more simple relations, as it respects the velocity of their vibrations; whereas those whose relative velocities are expressed by the more complicated fractions, are called dissonant. The simplest relation is 1:1, after this 1:2,—then 2:3;—less and less simple and thus less and less consonant, i. e. more and more dissonant, would be the relations 3:4, 4:5, 5:6, 6:7, 7:8, 8:9, &c.—But the boundary line between consonant and dissonant (it is most usually taken thus) lies in 7; all that lies on this side of such a boundary is called consonant, and all that lies on that side is termed dissonant, and a dissonant chord is every one in which tones occur which stand in a less simple relation to one another.

In thus fixing the boundary line, (which by the way coincides with that of § 103 and must always be understood with the limitations there pointed out,) every thing, it is perceived, hangs simply upon the more or the less, and the line of distinction between consonant and dissonant, placed, as it is, in 7, is assumed in a purely arbitrary manner; for, since in a steady and constant progression no fixed point can ever be otherwise than arbitrarily assumed, so it is a purely arbitrary act to fix upon the number 7 as a point of limitation in the constant proportional series 1:2, 2:3, 3:4, 4:5, &c. Thus here also the distinction depends solely upon the will, and consequently any one may, at pleasure, distinguish the relations of tones on this side and on that side of the arbitrarily assumed boundary line from one another, by peculiar technical names, and may choose for this purpose the expressions consonances and dissonances: but no reason can be found in the nature of the case, why the relations up to just *this* point of limitation should form a class by themselves and should be placed in opposition to those lying the other side of this point, and why they just so far should be called consonant or well-sounding, and from that point onward dissonant or ill-sounding. It is no matter of surprise, therefore, that the musical literati do not agree on the question, whether the boundary should be fixed upon 7, as supposed above, or somewhere else, but have quarreled for a century past on the question, whether this or that interval, as e. g. the fourth, lies on this side or on that side of the dividing line, or, in other words, whether the line of division is to be fixed on this or that side of this or that more or less dissonant or consonant interval. (§ 103.)

(*C.*) Other theorists, again, endeavor to find the ground of division and distinction between consonances and dissonances in *the necessity of the preparation and resolution of the latter;* and thus we find in books of high reputation the following definition: *A dissonance is an interval which must be prepared and resolved:* (among others, e. g. Kollman's *Practical Guide to Thorough Bass*, Chap. I. § 10: A CONSONANCE *is an interval that may be doubled, and that does not require a limited progression or resolution. And a* DISSONANCE *is an interval that ought not to be doubled, and that requires a certain progression, called its resolution!*) I am not disposed to place any particular stress upon the circumstance, that *the mode of treatment which the subject here requires is replaced by a mere definition of it*, just as if one were to define a catarrh by saying: it is an evil that must be relieved. But if, passing over this, we contemplate the matter merely in a practical light and inquire into the essential truth of the suppositions which lay the foundation therefor, we shall find that these suppositions are entirely false, and in part incorrectly apprehended, and accordingly that the characteristics given in the definition are (1.) *in part untrue*, and (2.) in part *undistinguishing.*

(1.) That all dissonances must be *prepared, is not true. The necessity of preparation is not common to all dissonances, and consequently, when employed as a characteristic in a definition, it is not true.* It is true indeed that many dissonances cannot easily be introduced freely [i. e. without preparation,] and that many others cannot be introduced at all in this way; but others again, and indeed very many others, are every where introduced without preparation. Without attempting here to furnish a complete discussion of this truth, I will just call attention to the fact,

(*a*,) *that the seventh of the dominant harmony* may have a free entrance,*—a fact which it would not be easy at the present day to call in question;—this subject will receive a more particular treatment in the doctrine of preparation:—and farther,

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* i. e. may be introduced without preparation. The word "*free*" is frequently used by the author in this sense. TR.

(*b*.) that many secondary sevenths have in like manner a free entrance,—which subject again is fully treated in the place just referred to;—and finally,

(*c*.) that all sorts of transition tones occur without preparation, while yet they are not consonances, and of course are dissonances: (*Kirnberger*, in particular, expressly reckons them in this class.*)

Now according to the definition in question, all these tones, inasmuch as they need no preparation, would not be dissonances and consequently must be consonances!

While, accordingly, the circumstance of unfree [prepared] entrance cannot consistently with truth be admitted into the definition of a dissonance, as a distinguishing characteristic, yet, on the other hand,

(2.) it is indeed true, that dissonances must be *resolved*, or more properly, that they are in certain cases confined to a certain definite progression; but still this is not *a distinguishing characteristic*, since, as is well known, many *consonant* tones have not a free progression, as e. g. the subsemitone [subsemitonium†] as the third of the principal four-fold harmony, &c.

Thus it appears that the distinction of consonances and dissonances which is founded on the necessity of preparation and resolution, is untenable, and that the definition growing out of it is in one respect too limited and in another too extensive. And it follows from all this, that the whole classification of harmonic combinations of tones into consonant and dissonant, is not at all founded in the nature and essence of things, and it is particularly by the view which has been taken under (*C*), above, that

(II.) *the practical utility* of this distinction is to be estimated. For, *what purpose is subserved* by the classification of tones into consonant and dissonant, if, as already observed under (*C*,) no rule admits of being given which would apply to either the one or the other entire class and only to this, if the rules of preparation and resolution which are given for the class of dissonances, apply in part only to some particular dissonances—not to the whole, and in part hold good not only of dissonances, but of consonances also? and indeed if a valid definition and limitation of consonances and dissonances does not even admit of being given! It is evident, rather, from all this, that the whole subject of dissonances and consonances introduces more of confusion and useless strife into our theories of the musical art, than it does of advantage.

Indeed, viewed in the proper light, what is the amount of the use which *others*—those who avow that doctrine—make of it? It is simply this, that they can give the following rule: all dissonances must be prepared, except those which need not be prepared.‡—That is to say: all dissonances which must be prepared, must be prepared. Or, to use *Marpurg's* own words: "dissonances occur *without preparation* in two cases, namely,

(*α*.) When one dissonance is resolved into another,

(*β*.) When the progression is directly from a consonance into a dissonance."

Now inasmuch as every dissonance is preceded either by another dissonance or by a consonance, in both which cases the dissonance must occur without preparation, it follows that the dissonance may in *all* cases occur without preparation,—a position which I am not myself entirely prepared to maintain.

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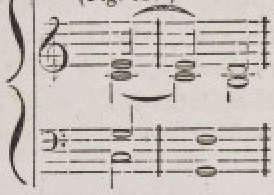
* K. d. r. S., 1. B., 11 Abschn., bei II, S. 213 n. f.

† "*Subsemitone*" or "*Subsemitonium*" is an old Latin name, still occasionally used, for the seventh of any large or major scale,—a tone which is more usually, with us, termed *the leading tone* or *note*. Tr.

‡ See e. g. *Marpurg's* Generalb. II. 2 Abschn. 5. Abs. S. 151, &c.

One word, in conclusion, on the proper limitation of what was communicated in § 102.—It is, as an ordinary fact, unaccountable, how musical teachers could have conceived the strange idea of dividing the intervals into consonant and dissonant, according to *the distances* of the tones, particularly according to the interval which a tone forms with that which is for the time being the base tone, and hence according to *the figures by which they are designated in thorough base.*[*] It is scarcely to be told, what an amount of mischievous confusion they have thereby introduced into the theory of the art, and how much unnecessary toil they have extorted from themselves and others; and, on the other hand, it is really ludicrous to see, what an embittered strife they often wage with one another on the question, whether this or that interval is consonant or dissonant. Were they fully acquainted with the nature of that on which they contend, controversies of such a stamp could not have arisen, or at least not in the manner in which they have been carried on; e. g. the notorious, worthless and unmeaning controversy, which has not yet entirely subsided, on the consonance or dissonance of *the fourth*, would have resolved itself into the simple remark, that while every tone is dissonant which constitutes the fourth as reckoned from *the base tone*, it still is not true that every note designated by a 4 in the figures of thorough base—every fourth tone from *the base tone*,[†] is for this reason the fourth of the fundamental tone; hence it may be at one time a consonance and at another a dissonance. But while the learned combatants always kept their eye on the figures of thorough base, every one could indeed easily point out a case to his opponent in which a consonance is figured with a 4, or in which a dissonance is figured in the same way; and, from the fact that the 4 and 6 in fig. 138, below, e. g. are dissonances, it could be inferred in general, that *the chord of the fourth-sixth is a dissonant chord*, and an *Albrechtsberger*[‡] could write, with a truly devout and honest conviction, no doubt: "Some reckon the fourth, accompanied with the small or large sixth and the pure octave, among the consonances, because it is derived from the second inversion of a perfect chord; others, again, because it lies above in a perfect chord, as e. g. [c e g $\bar{c}$]. Let it have what name it will, still it is always to my ear a dissonance. There is more than one reason for maintaining this position"!

(Fig. 138.)



Even those theorists who are intelligent enough to see, that a fourth may be at one time a consonance, and at another a dissonance, still entangle themselves in most singular definitions, the moment they undertake to tell *when* it is to be regarded as consonant, and when as dissonant. Thus e. g. *Kirnberger*[§] teaches in respect to consonant chords of the fourth-sixth: "The small third may be added to this chord, which [small third] is the small seventh of the fundamental tone of the chord—a seventh which may be added to the three-fold harmony, if the base then ascends four tones [four degrees] into the three-fold chord, as here (fig. 139, *i*, p. 237,) at the sign (*)."

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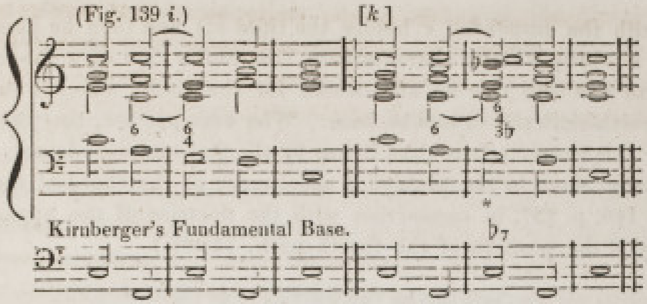
[*] Comp. the remark on § 99.

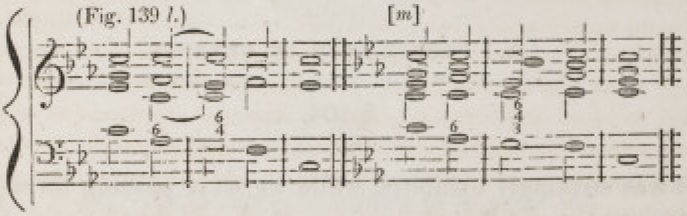
[†] Comp. the remark on § 99.

[‡] Anw. z. Comp. 2. Kap.

[§] K. d. r. S., I. B., 4 Abschnitt, S. 54.

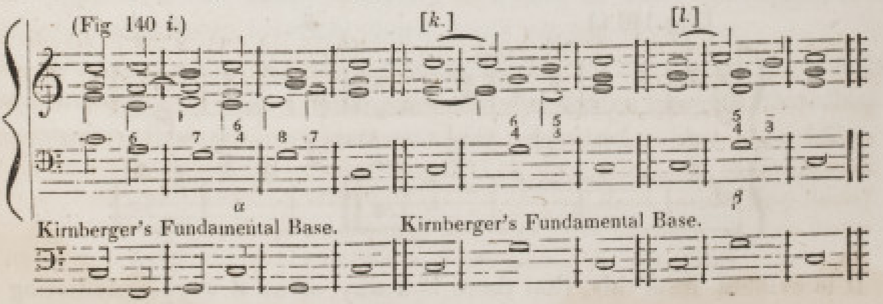


Now who does not see, that this characteristic, even viewed apart from its accuracy, or inaccuracy, is in itself no characteristic, since it always leaves the question first to be answered: when can a small third be added to the chord of the fourth-sixth?—and shall the answer be: it can take place when the chord of the fourth-sixth is not dissonant? Again this characteristic is false and deceptive; for while it is true indeed that every chord of the fourth-sixth which can be changed into a dissonant chord of the third-fourth-sixth by the addition of the proper seventh, is a consonant chord of the fourth-sixth, it still is entirely untrue that every consonant chord of the fourth-sixth tolerates such an addition. Let the experiment be tried, e. g. in fig. 139, *l*, *m*.



Here again it is clearly seen, how Kirnberger, because he discovered a consonant chord of the fourth-sixth in fig. 139, *i*, which admitted of being changed into a dissonant chord of the third-fourth by the addition of the small third of the base tone, forthwith laid it down as a universal principle that the small third may be added to the consonant chord of the fourth-sixth! and immediately proclaimed the possibility of such an addition to be *a characteristic sign* of consonance!

"Another characteristic of the consonant chord of the fourth-sixth," continues *Kirnberger*, "is the fact that the fifth cannot be taken therein instead of the sixth, though this can be done in the case of the dissonant chord of the fourth-sixth. Both cases are made plain by the following examples, (fig. 140.)


(Fig 140 *i.*)
[*k.*]
[*l.*]
6
7
6 4
8 7
α
6 4
5 3
5 4
3
β
Kirnberger's Fundamental Base.
Kirnberger's Fundamental Base.

At α it would not do at all to take the fifth of the base tone instead of the fourth or sixth, as is done at β, where the fourth is only a suspension and is dissonant." Here also Kirnberger had remarked, that in the chord under *k* of the above figure, which he regards as a dissonant chord of the fourth-sixth, the fifth d̄ might be put in the place of the sixth ē, as under *l*: (but by this means there arises an essentially different chord, namely $\mathfrak{G}_7$, with the suspended $\overset{=}{c}$ before the third $\bar{b}$;) and then he immediately proclaimed it as a principle and a characteristic, that in the case of a dissonant chord of the fourth-sixth the fifth can be substituted for the sixth; whereas in a consonant chord of the fourth-sixth this cannot be done. Who does not see, that the case is made even worse by this characteristic than it was by the first mentioned one.

I shall hereafter recur to the pretended dissonance of the chord of the fourth-sixth under *k* in fig. 140, p. 237, in connection with the doctrine of the appearance of the tonic harmony in the position of the fourth-sixth. (§ 207.)

DIVISION VI.

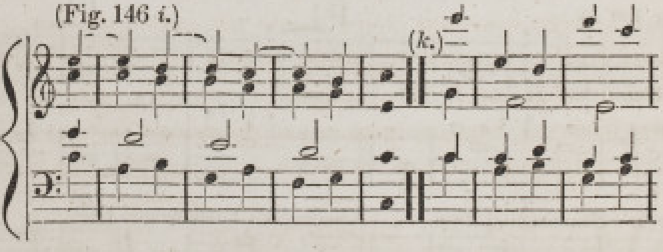
PREPARATION.

(A.) PREPARATION IN GENERAL.

§ 104.

The fact was strikingly exhibited while we were passing through the fundamental harmonies and their inversions, that certain tones, and many dissonances in particular, were remarkably rough and almost disagreeable to the ear, as e. g. the secondary sevenths, especially the large sevenths (§ 53,) the ninth heard in connection with the fundamental tone (§ 78,) &c. But we found also, that such harmonic combinations were at one time entirely ill sounding, and at another time not at all so, just according to the manner of their introduction; that, e. g. the secondary four-fold chord $\mathfrak{F}^7$ and $\mathfrak{c}^7$ are not disagreeable to the ear, in the manner in which they are introduced and treated in fig. 146, *i*;

(Fig. 146 *i*.)



It is evident from this, that there is a way of as it were conciliating the ear by a peculiar precautionary treatment of such tones, or, so to speak, by bringing them to the ear in a happy manner. If we inquire more closely, in what such a peculiar treatment properly consists, we find it to be in the fact that the voice which is to give the tone in question is made to perform it beforehand in the immediately preceding harmony.

This previous introduction of the tone is called *the preparation of the tone*, and, so far as the preparing tone is a dissonant one—a dissonance, this previous introduction of it is called *the preparation of the dissonance.*—More properly speaking, it is not so much the preparation of the tone, as the preparation of *the ear* to hear it.

The tone itself, so long as it sounds in the way of preparation [i. e. previously to being heard in the discord,] is called *a tone of preparation*, or concisely *a preparation.*

At the moment in which the harmonic combination for which the ear is prepared, begins to sound,—at the moment when the harmony is struck in which the tone would, without preparation, sound harshly, the discord is technically said to be *struck*, and the act itself of thus commencing to perform the discordant combination is called *the striking* of it.

In fig. 146, *i*, p. 238, the first *ē* is called the preparation; but in the following measure the striking of the discordant combination takes place and the *ē* becomes dissonant.

(B.) WHAT TONES REQUIRE PREPARATION?

§ 105.

(1.) *Many sevenths require to be prepared.*

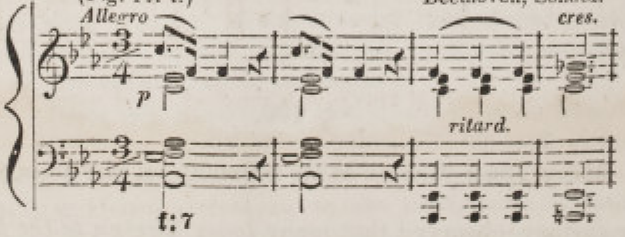
It follows from the declared object of preparation, that only those tones need this preparing process, whose introduction sounds harshly and roughly to the ear; and the more or less this last is the case, the more or less necessity there is for a preparation of them. This at once answers the question, what tones require preparation?

In the first place, this subject applies to *the sevenths* as follows:

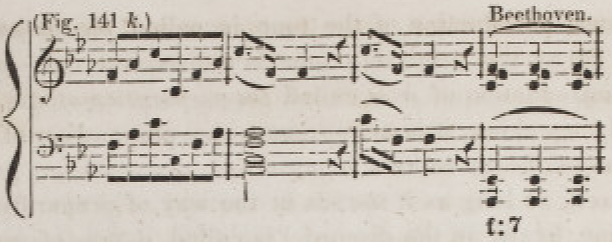
(*a.*) *The large seventh* requires preparation almost uniformly and in all cases. Indeed, I can hardly conceive of a case in which the unprepared introduction of a large four-fold chord would not offend the ear.

(*b.*) Our ear, on the contrary, not unfrequently tolerates certain *secondary sevenths* without preparation, and even derives a positive pleasure therefrom. Some examples from the best composers are contained in figs. 141—143.

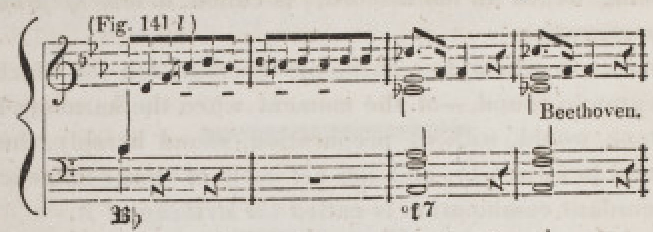
(Fig. 141 *i.*) Beethoven, Sonata.



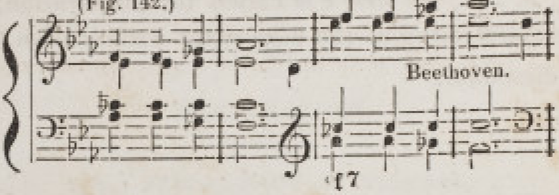
(Fig. 141 *k.*)


Beethoven.
f:7

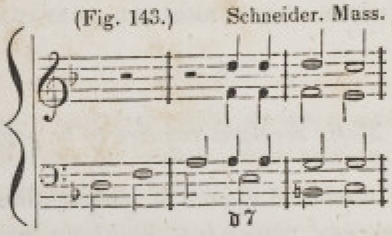
(Fig. 141 *l.*)


Beethoven.
B♭
f7

(Fig. 142.)


Beethoven.
f7

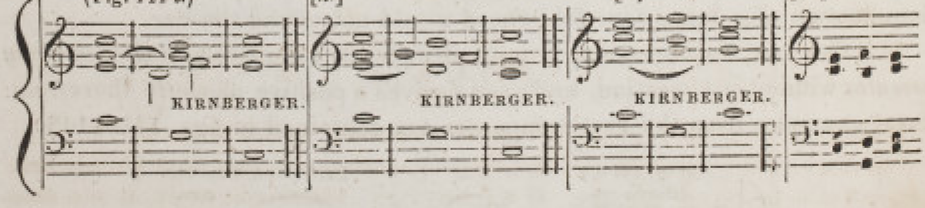
(Fig. 143.)


Schneider. Mass.
b7

The seventh of the four-fold chord with an elevated third, in particular, never requires preparation, as is abundantly shown by the examples in figs. 123—134, pp. 210—215.

(*c.*) *The principal seventh* does not require preparation in any case, as may be seen from figs. 144, *i.*—*m.* below, as well as from numerous other examples that everywhere occur.

(Fig. 144 *i.*) [*k.*] [*l.*] [*m.*]


KIRNBERGER.
KIRNBERGER.
KIRNBERGER.

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§ 106.

(2.) *Many Tones foreign to the harmony require to be prepared.*

We have farther observed that many *tones foreign to the harmony* sometimes sound harshly to the ear. We observed this particularly in the case of *the independent added ninth*, when the fundamental tone is heard in connection with it. (§ 77.)

This harshness of the ninth can be mitigated, by preparing it, as is done in the first and second, fourth and fifth measures of fig. 103, p. 196.

That this preparation, however, is not absolutely necessary, is shown by the third and sixth measures of the same example, and also by figs. 104—109, pp. 196 and 197, in all which cases the added ninth is introduced, unprepared, in connection with the fundamental tone, and that too in some instances with very expressive and happy effect.

How far a preparation may be necessary or useful, in relation to *other tones foreign to the harmony*, we shall find pointed out in the more particular treatment of the doctrine of such tones,—§ 418 and what follows.

Those tones which need no preparation, which may be introduced without preparation, or, as it is usually termed, may be *introduced freely*, may be called *free in respect to their introduction*, whereas those whose introduction requires to be prepared, may be called *unfree* in this respect.

§ 107.

Since, in accordance with the foregoing, the tones to which a preparation is necessary or useful, are either *sevenths* or *tones foreign to the harmony*, and consequently always dissonant, it may be said that *dissonant tones* only are unfree in respect to their introduction, and require a preparation.

But it cannot be said, on the other hand, that every dissonance must be prepared, for we have already seen the opposite of this in §§ 105 and 106, and we shall meet with the same fact, still more frequently, in the doctrine of transition tones.

Indeed, we shall in the sequel become acquinted with something that does not look entirely unlike *a preparation of consonant tones.* (§ 241, at 3.)

REMARK.

Theorists have laid down the rule, that *all dissonances must be prepared.*

This rule evidently arose in the same way as many others that have already been adverted to in preceding remarks. It was observed that several tones of the class which are called dissonances, require a preparation; and hence the rule was at once laid down, that *all* dissonances must be prepared.

That this rule is false, very satisfactorily appears, from the numerous examples already referred to, (§ 105, *b.* and *c.*;) and I will only, in few words, call attention to some particular points.

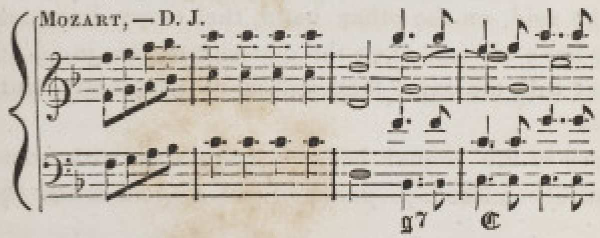
As it respects *the principal seventh*, no one can really doubt that it may be freely introduced, every where and in every variety of style. Yet, notwithstanding this, the principle is ordinarily laid down and stereotyped in the theories, that " *all dissonances* *must be prepared;*" and because such a rule has once found place, and because the principal seventh happens to bear the name of dissonance, so it must be reckoned among the intervals which require preparation.

If then such a theorist happens to meet with the numerous examples in which a principal seventh is freely introduced without the slightest inconvenience, he is so overawed by the rule once laid down—the work too of his own hands,—that he has not the courage to make an open declaration of such a freedom, but rather writhes and twists and distorts himself until he discovers, or rather invents, an elliptic or catachrestic preparation, i. e. a resolution in which the resolution is not carried into effect,* or perhaps a preparation of the consonant *termini* [termination] of the dissonance! So *Kirnberger*,† e. g. in the above quoted figure 144, *i. k. l.* p. 240, finds a preparation of the seventh $\bar{f}$ in the preceding $\bar{g}$ or *g*,—a preparation which runs directly counter to all the ideas and rules of preparation laid down by all the theorists,—a preparation in which the dissonant $\bar{f}$ is introduced on the light part of the measure, and that too directly as dissonant, and of course, therefore, *not* prepared, and is resolved on the heavy part of the measure!

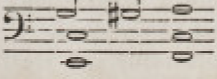
How much more rational it would be, then, instead of such miserable far-fetched helps and subterfuges, rather openly to acknowledge that the rule requiring "*all dissonances to be prepared*," is incorrect.

Let it not be said in reply, that the rule for the preparation of all sevenths holds good in the strict style, but that a license of free introduction is granted in the free style. After having once freely expressed my views upon the technical distinction of styles, (Remark on § 95,) I conceive myself under no obligation farther to reply to applications of such a distinction. (Compare Remark on § 485.)

That many secondary sevenths, no less than the principal seventh, may be freely introduced without harm, may be seen from the examples already quoted in § 105. Or, will it be said that the following example is faulty, because the $\bar{\bar{f}}$, the seventh of $\mathfrak{g}^7$, is introduced without preparation?


MOZART, — D. J.

A similar fact appears in the case of tones foreign to the harmony. I refer for examples only to figures 104—109, pp. 196 and 197, where ninths have a free entrance, even in connection with the fundamental tone, and, in some instances, in what is called the strict or church style. It has, moreover, occurred to no one to find fault with transient or so called changing notes in any style, notwithstanding the fact that these tones are not consonant, but dissonant. Of the same kind, we may say, without being guilty of captiousness, is the unprepared appearance of the superfluous fifth in the following example, among others:



If, finally, musical teachers declare the necessity of preparation not only in the case of every actual seventh, but in that of every note in general which is marked with a 7 in the figures of thorough base, i. e. in the case of every note which stands on the seventh degree, reckoning from the base tone, then it is easy to contradict a rule so foolishly laid down, by the following single example;

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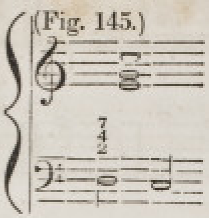
* See *Türk's* Anw. z. Generalbassp. § 47.

† In s. K. d. r. S. I. Bd. 3. Abschn. S. 32, 4. Abschn. S. 65, und. 5. Abschn. S. 89.

(Fig. 145.)



(and, if necessary, by a hundred others,) in which no rational person would think of preparing the seventh *c*. (Compare the Remark on §§ 99 and 103.)

(C.) PERFECT AND IMPERFECT PREPARATION.

§ 108.

Preparation is at one time *more perfect*, and at another time *less so*. It is more perfect, when it occurs

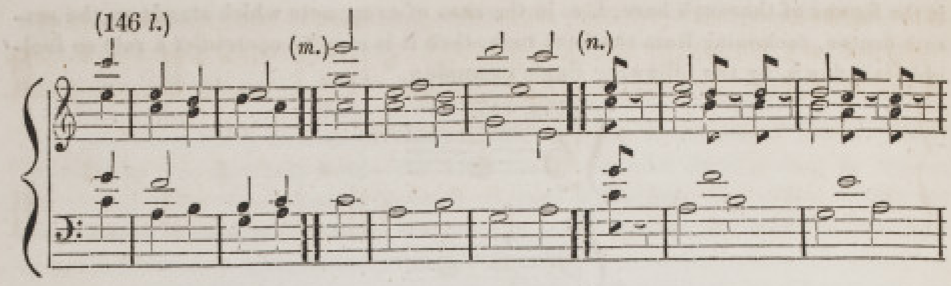
(*a.*) On the same pitch of the tones,
(*b.*) In the same voice,
(*c.*) Connected by a tie,
(*d.*) Continued sufficiently long,
(*e.*) Made by a genuine harmonic tone, and
(*f.*) On a light part of the measure.

We will take a view of these requisites in their order, though in the present place only in reference to the preparation of *the sevenths*, since we shall attend to that which pertains to tones foreign to the harmony, in connection with the doctrine of those tones,—(§ 415, and what follows.)

§ 109.

(1.) *Manner of preparing the Sevenths.*

(*a.*) The note of preparation must have been situated *at the same point of elevation*, *at the same pitch*, or *in the same octave*, as that in which the dissonant tone occurs, as is the case in fig. 146, *i.* p. 238. A preparation in which this is not the fact, could be called, at the least, but a very imperfect preparation, as e. g in fig. 146, *k.* p. 238, where the proper large seventh, $\bar{\bar{e}}$, is not prepared in this position—not in the twice stricken octave, but in the thrice stricken octave, in which case the $\bar{\bar{e}}$ that is afterwards heard as the large seventh is not the one that has preceded, but the latter, on the contrary, was the higher $\bar{\bar{\bar{e}}}$. The same imperfection occurs also in the following measure, where $\bar{d}$ precedes instead of $\bar{\bar{d}}$. (Compare also fig. 146, *m.* on the following page.)



§ 110.

(*b.*) The preparation should be made *by the same voice*, or, in other words, the preparatory note must have lain in the very voice which is to give the dissonance on the introduction of the following harmony. A preparation in which the preparatory note should be given by *another* voice, as in fig. 146, *l.* above, where before $\overset{=}{e}$ is heard as a proper seventh in the upper voice, the same $\overset{=}{e}$ was heard in the second voice, and thus not in the same voice that afterwards gives it as a seventh,—a preparation like this or like the one in fig. 146, *m.* above, would not, to say the least, be equally perfect with that in fig. 146, *i.* p. 238.

§ 111.

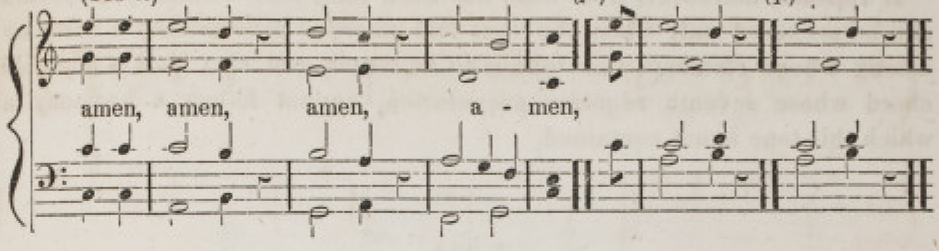
(*c.*) A preparation exhibits its mitigating effect in the fullest measure when the dissonant tone is not struck, for the first time, at the moment of its becoming dissonant, and therefore is not struck at the same time with the intervals of the newly introduced harmony, but, on the contrary, is only *continued on*, or, as it is usually expressed, is *tied* or *bound* to the preparing tone, as in fig. 146, *i.* p. 238. This tying or binding is at one time effected, as in the present instance, by the connecting together of two notes of like name, [i. e. standing on the same degree of the staff,] by means of a curved line, and at another time by other forms of notes. (Comp § 114.)

Tones tied together in the manner above described, are often concisely called *binds*, or *ligatures*, and sometimes *ties* or *slurs*; and we say of a piece of music in which all the dissonances are prepared by means of these binds, that it is written in the *bound* or *slurred style*.

Preparations are frequently met with, however, which do *not* occur in this bound manner. In fig. 146, *n.* above, the seventh is even separated from its preparation by pauses [rests.]

Prepared tones are not unfrequently exhibited in an unbound or untied state, in singing voices, [vocal parts,] where a necessity occurs for pronouncing a new syllable on striking the discord, as e. g. in fig. 146, *o*, p. 245.

(146 *o.*)



§ 112.

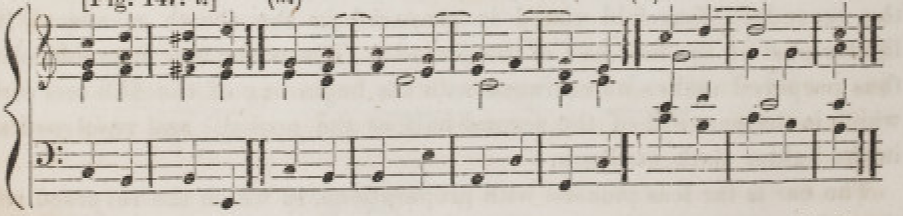
(*d.*) In order to arrive at the full effect of the preparation, *it must continue a due length of time;* the preparatory tone, as the matter is usually expressed, must *have been present a sufficient length of time,* because a note of only a very short duration cannot, in the nature of the case, so perfectly prepare the ear, as a note that continues longer. It is received as a general principle, that the preparatory note ought to continue as long as the discordant one, as in fig. 146, *i.* p 238, &c.

The fact that a very short preparatory tone, however, softens the harshness of the discord, is shown by fig. 146, *p.* above, in which case $\overset{=}{e}$ of the upper voice, though prepared only by a short eighth note, still sounds far less harshly than it would in fig. 146, *q.* above.

§ 113.

(*e.*) In all the examples referred to, the note of preparation is always a *genuine harmonic note.* The preparation of a seventh by a tone foreign to the harmony, cannot, in the nature of the case, be well conceived; and, for this reason, such a preparation cannot be effected by means of a dissonance; for then the case would be somewhat as it is in fig. 147, *i.*

[Fig. 147. *i.*]



where the principal seventh precedes as a ninth,—or as in fig. 147, *k.* above, where the secondary seventh goes before as a ninth.

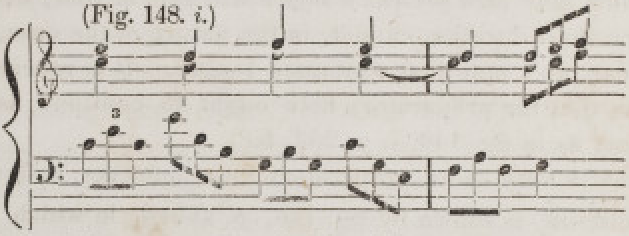
But when our musical teachers lay it down as a universal rule, that a dissonance can in general be prepared only by a consonance, they teach what is entirely untrue, as we have in part seen in the examples last referred to, and as we shall still farther see in the doctrine of the preparation of suspended notes. (§ 418, and what follows.)

It appears, moreover, from what has been said, that ordinarily a seventh can be prepared only when the four-fold chord is preceded by a harmony among whose elements this tone is to be found, and that thus a four-fold chord whose seventh requires preparation, cannot follow a harmony in which this tone is not contained.

§ 114.

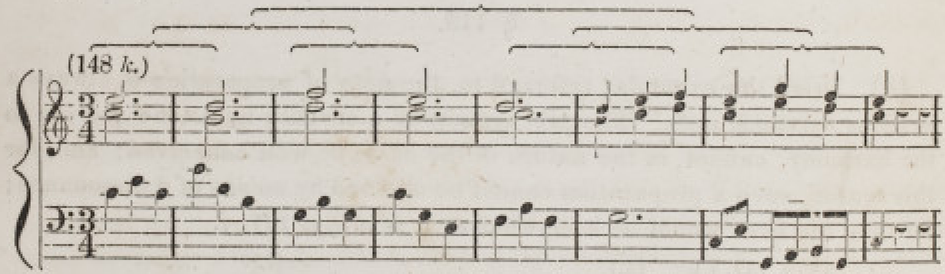
(*f.*) The preparation of a seventh is the most satisfactory, when it occurs on *a lighter portion of the measure*, than the discord does, so that the striking of the seventh follows on a heavier part of the measure, and thus, so far as they occur bound or tied together, (§ 111,) they appear in the form of a syncope, (Music Teacher, § XCVIII,) as in fig. 148, *i*.

(Fig. 148. *i.*)



What is here said in respect to light and heavy parts of the measure, applies also to light and heavy measures and pairs of measures. (Music Teacher, § LXIX.) Thus e. g. in the eight-measure periods represented in fig. 148, *k*.

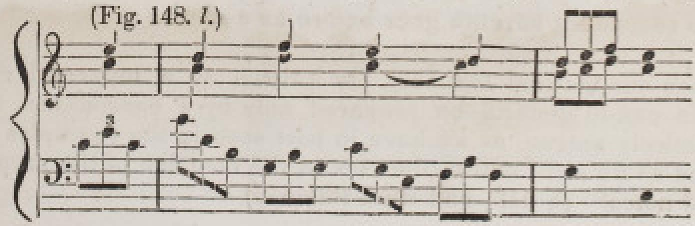
(148 *k.*)



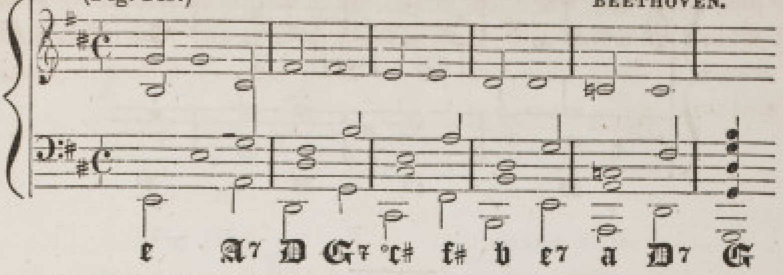
the secondary four-fold chord is prepared in the fourth measure, (the lighter part of the first half of the period.) The secondary four-fold chord thus prepared makes its entrance with the beginning of the fifth measure,) which is the heaviest of the second-half of the period,) and resolves itself in the lighter sixth measure.

The ear is far less pleased with preparations in which the reversed relation of the rhythmical accent takes place, as e. g. in fig. 148, *l*, below,

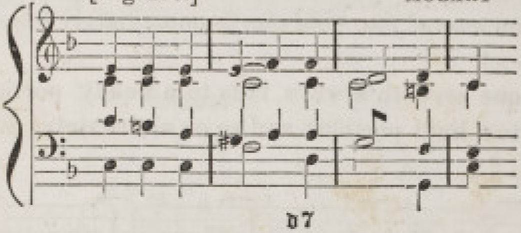
(Fig. 148. *l.*)



and 149, below:

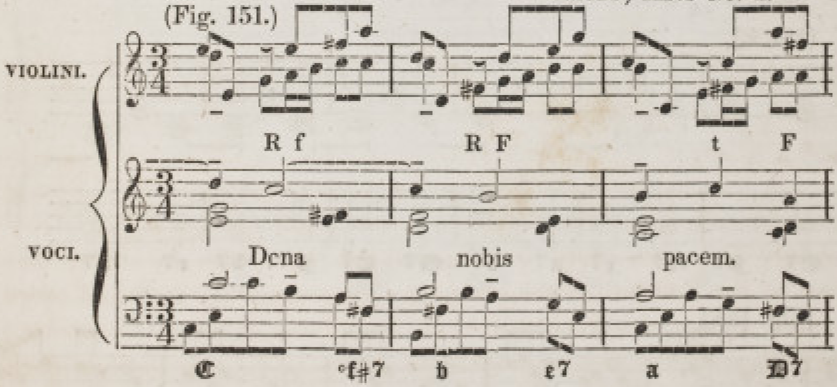

(Fig. 149.) **BEETHOVEN.**
e A7 D G7 °c# f# h e7 a D7 G

Preparations of this kind, however, are not to be absolutely condemned For the fact that at least *the less harsh sevenths* do not sound disagreeably even in *this* way, is shown by fig. 150;

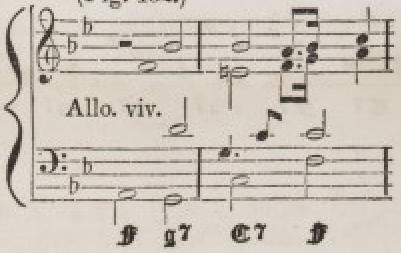

[Fig. 150.] **MOZART**

where the secondary seventh $\bar{c}$, occuring on the last part of the measure, is prepared on a heavier portion of the measure, namely on the first and second parts of the measure, and appears as a seventh on a lighter portion. A similar case is found in figs. 151—153.

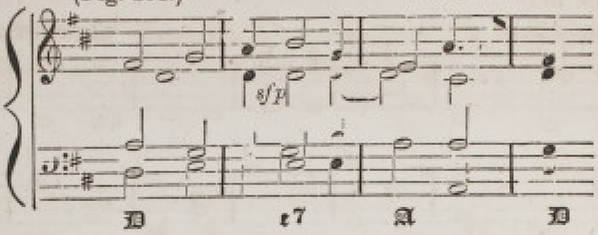
HAYDN, MASS NO. 2.


(Fig. 151.)
VIOLINI.
R f
R F
t F
VOCI.
Dcna
nobis
pacem.
C °f#7 h e7 a D7

HAYDN, MASS NO. 4.


(Fig. 152.)
Allo. viv.
F g7 C7 F

(Fig. 153.) MOZART.



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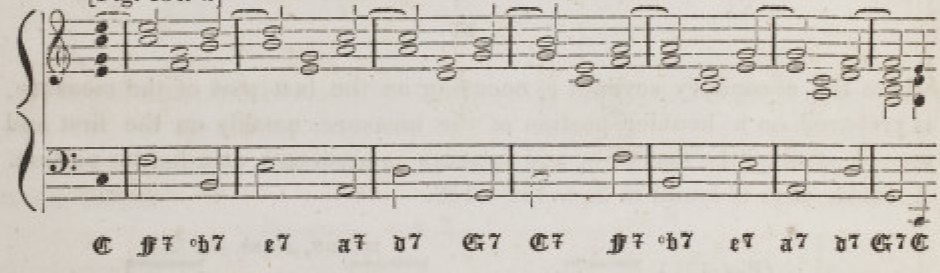
§ 115.

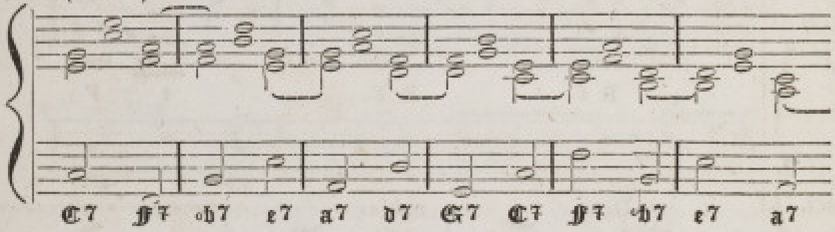
In many cases it is impracticable in itself, to observe this rhythmical relation, namely, when *several four-fold chords* immediately follow one another. For in this case,

In even rhythm, one seventh always falls to a heavy portion of the measure, and the next to a light portion; and so on alternately. Figs. 154—163.

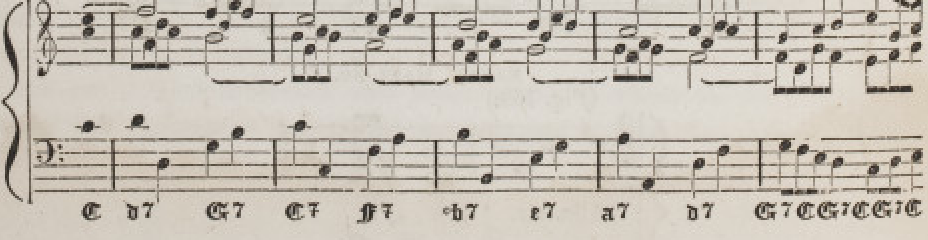
[Fig. 154. *i.*]


C
F7
°h7
e7
a7
d7
G7
C7
F7
°h7
e7
a7
d7
G7
C

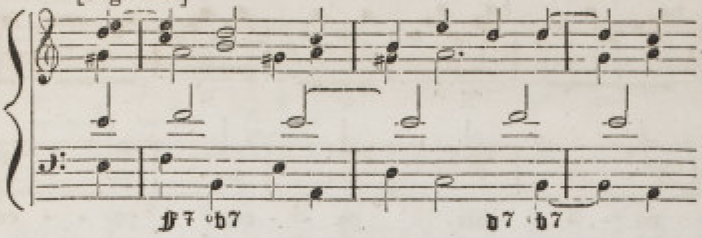
(154. *k.*)


C7
F7
°h7
e7
a7
d7
G7
C7
F7
°h7
e7
a7

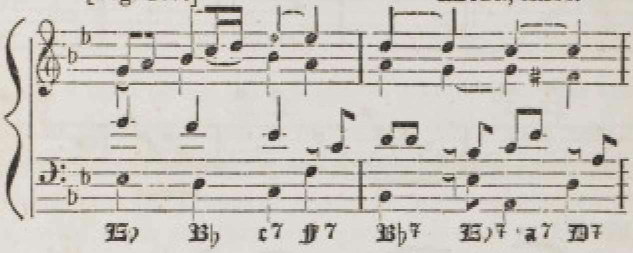
[Fig. 155.]


C
d7
G7
C7
F7
°h7
e7
a7
d7
G7
C
G7
C
G7
C

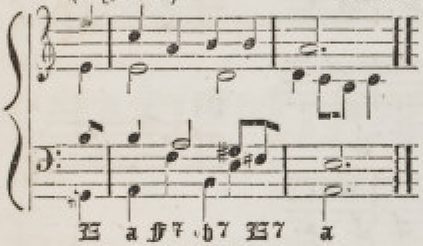
[Fig. 156.]



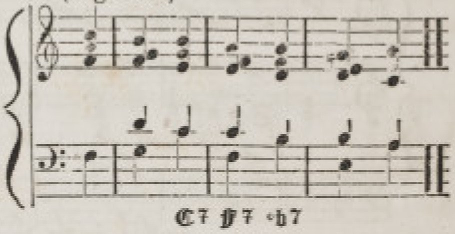
[Fig. 157.] HAYDN, MASS.


E♭
B♭
c7
F7
B♭7
E♭7
°a7
D7

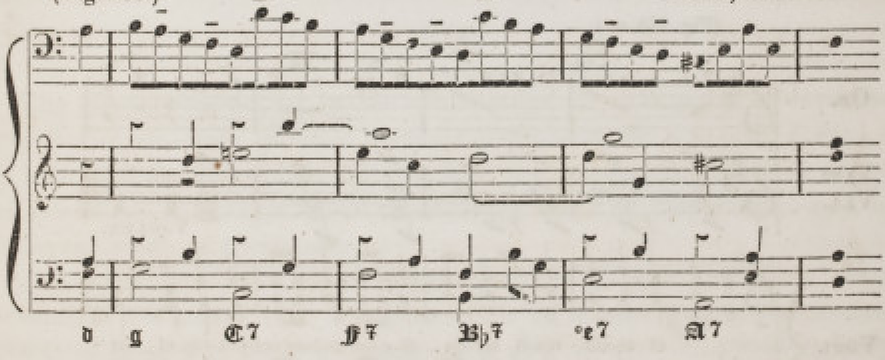
(Fig. 158.) VOGLER.



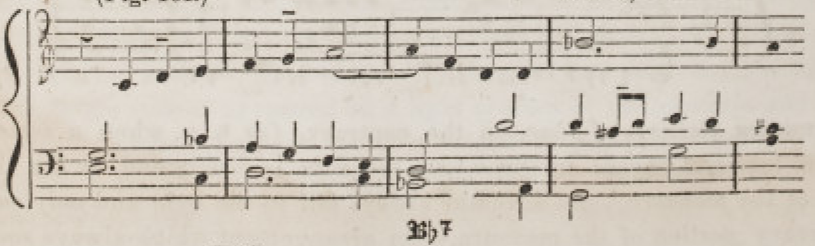
(Fig. 159.)



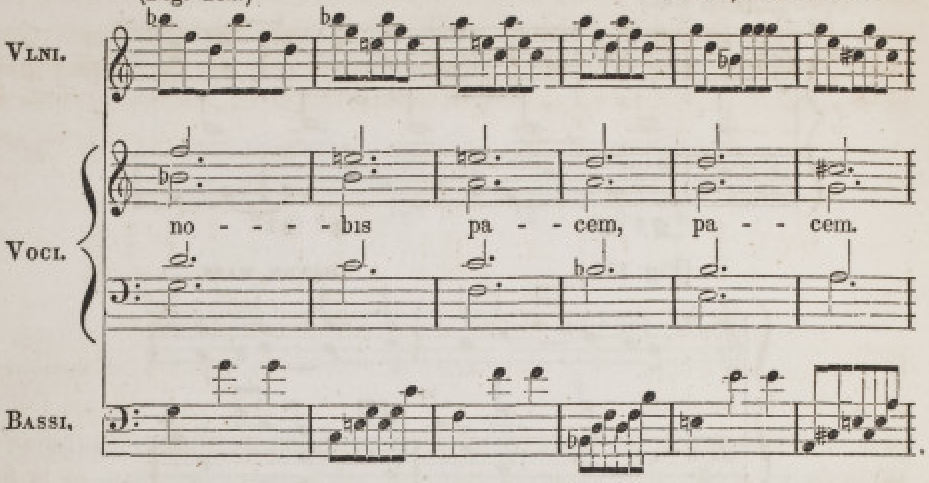
(Fig. 160.) HAYDN, CREATION.


d
g
C7
F7
B♭7
°e7
A7

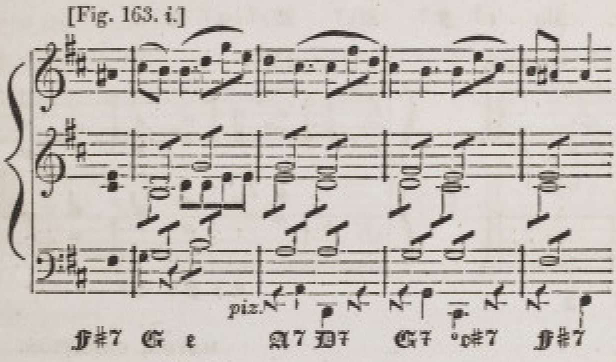
(Fig. 161.) HAYDN, CREATION.



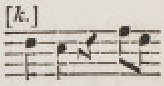
(Fig. 162.) HAYDN, MASS NO. 2.


VLNI.
VOCI.
no - - - - - bis pa - - cem, pa - - - cem.
BASSI.

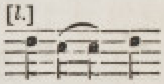
[Fig. 163. *i.*]


piz.
𝔉#7 𝔊 e 𝔄7 𝔇7 𝔊7 °c#7 𝔉#7

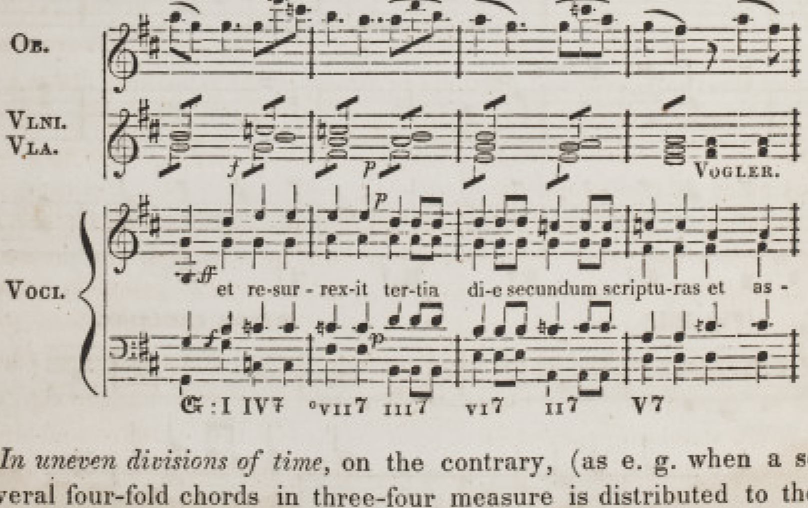
[*k.*]



[*l.*]

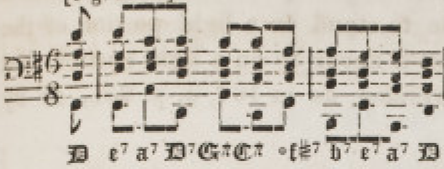


(Fig. 163. *m.*)

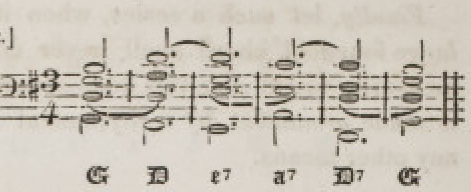

OB.
VLNI.
VLA.
f
p
VOGLER.
VOCI.
ff
et re-sur - rex-it ter-tia di-e secundum scriptu-ras et as -
f
p
𝔊 : I IV7 °VII7 III7 VI7 II7 V7

In uneven divisions of time, on the contrary, (as e. g. when a series of several four-fold chords in three-four measure is distributed to the three parts of the measure,) *two* sevenths always fall to the light and only *one* to the heavy portion of the measure,—an arrangement which always sounds very unsatisfactorily; fig. 164, *i*, p. 251.—(Comp. Mus. Tr. § LXVI.)

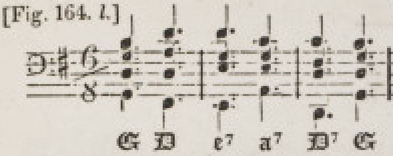
[Fig. 164 i.]



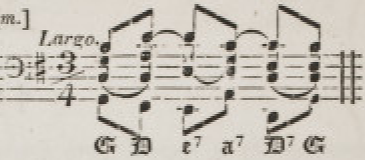
[k.]



[Fig. 164. l.]

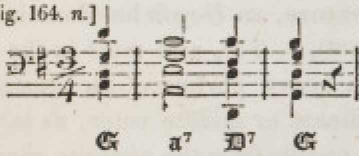


[m.]

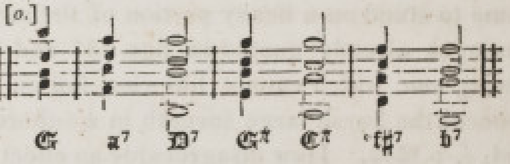


If therefore we would bring such series of chords into this kind of measure, it had better be done in such a way that a four-fold chord will not fall to each of the unevenly grouped parts of the measure, as in fig. 164, *i*, above, but to each larger even group of times or parts of the measure, as in fig. 164, *k* and *l*, or to each smaller even group, as in fig. 164, *m*, or in such a manner that the uneven groups of time are divided into two unequal portions, as in fig. 164, *n* or *o*.

[Fig. 164. n.]



[o.]



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§ 116.

The circumstance that in the distribution of such series of sevenths to evenly and unevenly grouped portions or times of the measure, always one at least, and sometimes two, fall to a light portion, is indeed in some respects an infelicity; still, such series of sevenths admit of being meliorated by a judicious mode of treatment.

This treatment consists, *first*, in regularly preparing at least *the first* seventh of the series, i. e. in preparing it on a light part of the measure, and in causing it to make its appearance as a seventh on a heavier portion of the measure,—and also in preparing, whenever possible, the last seventh, as in fig. 154, *i*, 155, 156, and 157, pp. 248, 249. (The reverse of this is found in figs. 154, *k*, and 158, pp. 248, 249.) The first four-fold chord in fig. 160, p. 249, is not indeed prepared on a light portion of the measure and struck on a heavy portion, but yet the first secondary four fold chord is. In fig. 161, p. 249, the third measure is stronger than the second and fourth.

The *second* means of mitigation consists in not putting that seventh whose lot it is to fall on the light portion of the measure, in the upper voice or in a voice which by any other means is a prominent one, but in concealing it in a subordinate voice, as is observed to be the case in figs. 154, *i*, 156, 158, pp. 248, 249, but not in figs. 155, 157, 159, 160, 163, pp. 248, 249.

Finally, let such a series, when it can be done, be so arranged, that a *large* four-fold chord shall never come to stand on a light portion of the measure; or, in case this does occur, let it never be on a light portion that is made prominent by a rhythmical inversion, as in 164, *o*, p. 251, or by any other means.

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§ 117.

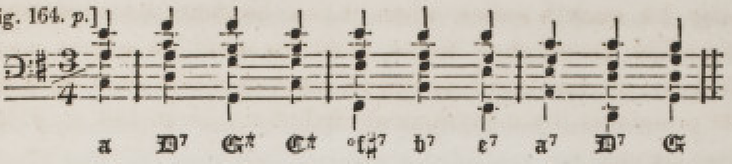
The greatest evil in such series, however, whether in even or uneven measure, is the fact that sometimes even *two large* four-fold chords immediately follow one another; in which case, of course, both cannot fall on an equally heavy portion of the measure, but one must always fall on a light portion, as e. g. fig. 154, fourth measure, p. 248, figs. 157, 159, 160, 162, 163, 164, pp. 249, 250, and 251.

In such a case, one must endeavor to make such an arrangement, that the *first* of two such immediately successive large four-fold chords may come to stand on a heavy portion of the measure, as *Haydn* has done in the passages already quoted in figs. 157 and 160, p. 249, and must in the following one, which cannot likewise fall on a heavy portion of the measure, conceal the harsh large seventh in a subordinate or middle voice, as in fig. 154, *i*, p. 248. How disagreeable an effect results from the opposite course, is shown by fig. 159, p. 249, where the harshest of all four-fold chords first makes its appearance on a light part of the measure, and assumes moreover a particular prominence by appearing in the principal voice. The same thing is perceived in fig. 154, *k*, p. 248, from the fourth to the fifth measure.

(The fact that in fig. 163, *i*, p. 250, the two successive large four-fold chords, of which the first introduces itself on a light portion of the measure and has its large seventh in the upper voice, do not, after all, sound disagreeably, may be explained, perhaps, by the circumstance that, as we shall find hereafter, the $\overline{\overline{c}}\#$ of the upper voice in the second half of the third measure, may perhaps be regarded as *a merely prolonged interval* (§ 458,) instead of being as in fig. 163, *k*, p. 250; or it might possibly, moreover, even be considered a suspension, as in fig. 163, *l*, p. 250, whose resolution would be interrupted merely by the insertion of the harmonic interval $\overline{f}\#$: regarded in this point of view, the harmony of this last half measure would not be the large four-fold chord $\mathfrak{D}^7$, but $\mathfrak{D}$.)

It would be the worst of all evils in the case of such a succession of sevenths, distributed to uneven times or portions of the measure, to bring *two* large sevenths successively upon light times or portions of the measure, as in fig. 164, *p*, on page 253.

[Fig. 164. p.]



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§ 118.

(2.) *Mode of preparing tones which are foreign to the harmony.*

The preparation of tones foreign to the harmony takes place essentially in the same manner as that of the sevenths. Comp. e. g. figs. 102 and 103, pp. 195, 196. We shall speak more particularly on this point, under the head of *the preparation of suspensions.* (§ 418 and what follows)

CHAPTER III.

KEYS.

DIVISION I.

IDEA.

§ 119

Having become acquainted, in the second chapter, with the different harmonies individually taken, we will now consider them in their relations to one another.

When our ear perceives a succession of tones and harmonies, it naturally endeavors to find amidst this multiplicity and variety an internal connection—a relationship to a common central point. For, as in every art the mind[*] spontaneously desires to find a certain unity in the multiplicity—

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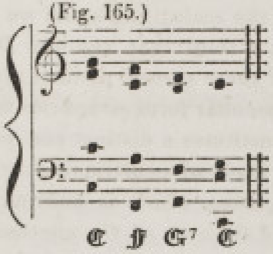
[*] The word translated "*mind*" is in the original "*Kunstsinn*," *the artal* or *artial sense*—that state of mind involved in the perception of the so called phenomena, i. e. the attributes, productions, &c. of any art. The feeling in question, however, can scarcely be regarded as pertaining to the arts, any more than to many other things. It is really nothing else than *the generalizing* principle of the human mind,—a principle as natural and universal as is that of being pleased with the objects of beauty or shocked with those of terror and dread, or of being gratified with clear ideas, &c. Whenever we perceive a multiplicity of objects, no matter of what sort they be, we spontaneously seek to trace a general relationship between them, and, if possible to arrange them in classes, on the ground of some general resemblance or of derivation from some common cause or of the production of the same species of effect, &c.; that is to say, we strive to reduce the large and multifarious mass to a smaller and more homogeneous form—a form more easy to grasp, and more agreeable to contemplate. This generalizing tendency, whose cause is ultimately reducible to the greater facility which the mind thereby gains for conceiving of things, naturally strives, on perceiving a mass of musical sounds, to find some such resemblances and general relationships among them as will enable it to reduce them to a more compact and consolidated form, and to contemplate them more as *one*, instead of being obliged to view them as *many*, and to regard them more as of the same kind and belonging to the same family, instead of being obliged to see them as so many isolated and disconnected individuals; in short, it wishes to bring them under one simple, condensed and uniform view. Hence, if the mind, on perceiving a successive mass of tones, can find among them such relations as show them, as it were, to revolve around some one particular tone as a common center, or to be derived from it as a common cause, or to be like it in producing the same effects, or to have such resemblances toward it and toward one

a centrality of the manifold parts, so it does here. The ear every where longs to perceive some tone as a principal and central tone, some harmony as a principal harmony, around which the others revolve as accessories around their principal, to wit, around the predominant harmony.

An example will at once demonstrate to the ear, what is meant by the above somewhat abstractly expressed proposition.

On hearing the following passage, e. g.

(Fig. 165.)



every musical ear perceives the tone *c* to be the central tone, or, otherwise expressed, the tone from which the passage proceeds,* and the three-fold harmony 𝕮 to be the principal harmony of the passage.

Now so far as a tone thus appears as a principal and central tone, and a harmony as a central harmony—as a common middle point to which the others relate and on which they depend, we denominate the harmony *a tonic harmony* or *tonic chord*, and also *the principal chord;* and we call the fundamental tone of this harmony, *the tonic* or *tonic note*, sometimes also *the first note*, *the first degree*, *the prime*, and also *the final note*, *the final string*, *the principal note*, *the principal tone.* We then say: the composition *goes or proceeds from this tone;* and such a predominance of a principal harmony over the others, we call A KEY.† Thus in the example above referred to,

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another as to show that they all belong to one family and stand related to one another as children to a common parent,—I say, if the mind can find this, it finds just what it seeks; it secures the satisfaction of a clear and intelligent grasp of things whose relations it sought to trace, and realizes the pleasure of just that generalized, condensed and homogeneous result which it desires. Such is the desire, the process and the result, in the case of the mind's seeking and discovering THE KEY of a piece of music.—TR.

* The Germans have a peculiar usage in expressing the relation of a piece of music to its key: they say of a piece of music, namely, that it *goes or proceeds* FROM *a particular key*, whereas we say it *is* IN *a particular key;* of a piece whose key note is *c*, e. g. they would say: it goes from *c*, or from the key of *c*, while we should say: it is IN *c*, or in the key of *c*. TR.

† The German word translated *key*, is *tonart*, which literally means *a tone-species* or *species of tone*, thus corresponding very nearly to the Latin word *modus* and the English word *mode*, both which have also been used as names for what is here called *key*. There is more or less appropriateness in both of these modes of designation, because both are in a measure significant of the nature of the thing, though the terms *modus*, *mode* and *tonart* or *species of tone*, have *a more natural and obvious* significancy than does the term *key*. The idea may be presented somehow thus. There are several distinct systems or sets of tones, according to the different tones that may be taken as

the key of *C* is the predominant one, the passage goes or proceeds from *C*, and the tone *c* is *the tonic* or *tonic note* in it.

One and the same key, however, does not always continue throughout a piece of music, but several keys may alternately enter and retire, one after the other; or, as it is usually expressed, *a modulation* may take place into

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common centers, principal tones or number *ones* of the scale: and thus we have e. g. the system of tones that is constructed upon the tone *C* as the common center, the principal tone or number *one* of the scale; and again we have the system of tones that takes *G* as the common center; a third that assumes *D* as the principal tone or common center; &c. Now each of these several distinct systems of tones may be considered as making a distinct and peculiar form or species of music, and hence as being a particular MODE, because it constitutes a distinct and peculiar *mode of constructing a piece of music:* thus e. g. one mode of constructing a piece of music is, to take its elements out of that system of tones which is built on *C* as its common center, and hence this mode would be called *the mode of C;* another form of musical composition is that which takes the tones found in the system of *G* as its elements, and this would accordingly be called *the mode of G;* and so on.—And, again, another variation in the species or character of a piece of music depends upon the circumstance, whether the first third from the central tone or number *one* of the system of tones out of which it is constructed, is a *large* or a *small* third: that mode or form of a composition whose system of tones has a *large* third between number *one* and number *three*, would hence be called the *large* mode, while that whose system of tones has a *small* third between number *one* and number *three* would be called a *small* mode; thus, a composition formed out of the tones contained in the system which is built on *C* as a common center and which has the distance of a small third between its first and its third degrees, would be said to be constructed in *the* SMALL *mode of C* [*c*], while a composition whose system is that of *C* with a *large* third, would be said to be constructed *in the* LARGE *mode of C*. Thus the appellation *species of tone* or *mode*, as a designation of that which we otherwise term *key*, has a very obvious applicability in the nature of the case, and, but for the more prevalent use of the latter, would be the better term to be adopted. The term *key*, on the other hand, applies somewhat in the following manner. The principal tone or common center, together with that system of tones which it carries with it, constitutes as it were *the key* to the piece of music composed of such system of tones; that is to say, it is that upon which the mode or form of a piece of music depends, that which determines the species or character (i. e. species or character on the point in question) of a musical composition, or, if you please, that which commands the entrance to this particular structure of a piece, just as a key, in the primary sense, commands the entrance to a room or an edifice: thus the analogy rests on the idea of *source* or *cause*,—a sense in which the word key is very abundantly used; as e. g. when we say: this is the key to the whole affair, i. e. this explains the whole affair—this is *the source* of our acquaintance with the whole affair, &c., or when we speak of the key-stone of an arch, meaning that particular stone on which the structure of the arch depends—that by which the arch is supported, &c. Thus the key in a piece of music is that particular system of tones on which, in one respect, the structure of a piece of music depends, that which forms the source of the elements out of which it is composed, and the source of that peculiar character which results from the use of these elements. We accordingly say of a piece of music composed of the system of tones that has *C* for its center, that it is written in the key of *C* or that its key is *C*, meaning thereby that the system of tones built on *C* is the source of its materials, of the mode of constructing its chords and of the particular character resulting from these; and again we say of a composition framed out of a system of tones which another key—into another tone. We sometimes find whole series of harmonies, each of which is successively in a different key; the ear, however, always strives to conceive of each of these different harmonies as belonging to some particular key.

§ 120.

The harmony which appears as the tonic harmony, is always *either a large or a small three-fold chord.*

Wherever *a large three-fold chord* appears as the principal harmony, the key is said to be *large,* [*major, modus-major* or *durus.*] But in case the principal harmony is *a small three-fold chord*, the key is termed *small*, [*minor, modus-minor* or *mollis.*] If e. g. the principal harmony is the large three-fold chord 𝕮, as in the foregoing example, the key is called *C-large*, [*C-major, C-durus;*] but if the principal harmony is the small three-fold chord 𝖆, the key is denominated *a-small*, [*a-minor, a-mollis.*]*

A diminished three-fold chord never appears as the tonic chord, and thus

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has *C* for its common center, but *a small third* between its first and its third degrees, that it is written in *the* SMALL *key of C* [*c*]; and so of all the other keys, whether large or small.

One word as to the distinction between *a key* and *a scale*. *A key* is a system of tones built on some one particular tone as a principal tone or common center, without reference to any particular arrangement of these tones or even any arrangement whatever; while *a scale*, on the other hand, is a regularly arranged series of these tones in a continuous ascending or descending row [i. e. ascending and descending *in point of pitch*, if not in the form of external exhibition.] Thus, *the key* of *C* is the tone C, taken as a common center, together with the three-fold chord built upon it and the naturally allied three-fold chords of F and G, while *the scale* of *C* is the regularly arranged series of all the tones contained in this system or set of chords, in one continuous row, to wit: C D E F G A B c. TR.

* The Germans are accustomed to use more or less the terms "*hard*" and "*soft*" in application to the two classes of keys, in the place of our *large* and *small*, or *major* and *minor;* and in reference to this usage the author says: "As it respects the terms *hard* key and *soft* key, it is not to be supposed that the so called hard key always has the character of harshness, or that the soft key always has that of softness. It often happens, on the contrary, that the roughest and the most vivid sentiments admit of being expressed in the so called soft keys; while, on the other hand, the greatest softness, delicacy, and sweetness may sometimes be expressed in the so called hard keys. These terms must be regarded as mere names, which have no literal meaning. The small or soft key would rather admit of being called *heavy, depressed, melancholic* and *sad;*—and the large or hard, *clear, firm* and *vigorous;* but this even is not universally true. Such a characterizing of the keys, however, is not appropriate to the present place."

The terms *hard* and *soft* are a mere translation of the Latin terms *durus* and *mollis*, which were first adopted by the ancient Latin musicians; and it cannot be doubted that *in general* and *for the most part* they are appropriate in their proper sense. TR.

there is no *diminished key.* Nor does a four-fold chord ever appear as a tonic chord.

REMARK.

In the foregoing section I have given no reasons why none but large and small three-fold chords can be tonic chords; because, in my opinion, it is here, as in many other matters, impossible to assign a *valid* reason, or *at least it has thus far proved to be so.*

Suppose, in the case of the diminished three-fold chord, I should state the reason to be the fact that this chord is not produced by the divisions of a string; still does the *small* three fold chord arise from such a division? (Comp. Mus. Tr § X, Remark,) and yet there is a small key. Or, should I undertake to relieve myself by saying, that the small key is an imitation of the large, then a diminished three-fold chord could be justified in the same way by saying that it is an imitation of a small three-fold chord; and, on the other hand, the principal four-fold chord is entirely produced by the divisions of a string, &c.

For myself, instead of proffering the specious appearance of an argument, I will only assume that as an axiom which is actually known to exist,—which shows itself to be deeply seated in the nature of our ear and faculty of perception, and which is, for this very reason, neither capable of proof nor in need of any,—rather than affect the assignment of a reason which after all is nothing but false appearance and which can only deceive the reader who reposes confidence in its validity.

DIVISION II.

MODE OF DESIGNATING THE KEYS.

§ 121.

We will in future designate *the large* keys by *large Italic letters*, and the *small* keys by *small Italic letters*. The large letter *C* will thus denote the key of *C-large*, while a small letter *c* will denote the key of *c-small; F* will represent the key of *F-large*, and *f*, on the contrary, that of *f-small; E♭* will stand for the key of *E♭-large*, and *e♭* for that of *e♭-small;*—and so of *D-*, *E-*, *G♭-* and *A♭-large*, and of *d-*, *e-*, *f♯-* and *g♯-small*, &c.

If it be wished to generalize this mode of designation still farther, a large key can be represented in general by *X* or *Z*, and a small key by *x* or *z*. (Comp. the last part of § 52, and of § 153.)

DIVISION III.

ESSENTIAL HARMONIES OF THE KEY.

§ 122.

The question *by what means* the ear is determined to assume this or that harmony as the tonic harmony,—*by what means* the perception of this or that key is awakened in it, cannot here be definitely determined. It can only be said in general, that the ear perceives this or that key, according as it hears harmonies which in some way exhibit the appearance or convey the impression of belonging to this or that key.

That is to say, there are only certain particular harmonies which belong to any one particular key, and these, constituting as they do the family of the harmonies appropriate to a key, we denominate *the peculiar or appropriate harmonies of the key.*

Some, among these, exhibit a *special* alliance with the key, a very peculiar and intimate bond of connection with the tonic harmony, as their principal fundamental pillar; while others appear in a less close alliance with it. The former are called *the essential harmonies of the key*, while the latter are denominated its *kindred or appropriate accessory harmonies*, and also *the proper accessory chords of the scale.*

We will first enumerate the former.

§ 123.

The essential harmonies of a key are:

(1.) The tonic chord.

(2. and 3.) The large three-fold chord and the principal four-fold chord on the large fifth of the tonic. These last two harmonies are, next after the tonic harmony, the predominant harmonies in every piece of music, and both have received the name of *dominant chord* or *dominant harmony*, and their fundamental note is called *the dominant.* (Comp. § 50 and § 74.)

(4.) The remaining harmony especially allied to a key, is that of the three-fold chord on the small fourth of the tonic—a three-fold chord that is *large* when the tonic harmony is a large one, and *small* when the tonic harmony is small. It is called *the under-dominant* or *sub-dominant chord*, and its fundamental note is called *the under or sub-dominant*, because it is the under-fifth of the tonic, in the same manner as the upper dominant is the upper-fifth of the tonic.

Let us apply what has been said, to an example. In the large key of *C*, the three-fold chord 𝕮 is the tonic harmony; 𝕲 and 𝕲^7 are the dominant chords; the large three-fold chord 𝕱 is the under or sub dominant chord. The three most essential harmonies of the large key of *C* are, accordingly, 𝕮, 𝕲 or 𝕲^7, and 𝕱.

In the small key of *c*, on the contrary, where 𝖈 is the tonic harmony, 𝕲 and 𝕲^7 are the dominant chords, and the small three-fold chord 𝖋 is the under dominant chord. We find, in like manner, that the three most essential harmonies of *a-small*, are 𝖆, 𝕰 or 𝕰^7, 𝖉,—&c.

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§ 124.

The four species of harmonies described in the foregoing section, namely,

(1.) The tonic three-fold chord,
(2.) The large three-fold chord, } on the dominant,
(3.) The principal four-fold chord, }
(4.) The under dominant chord;

or, (since it is usual to reckon Nos. 2 and 3 only as one:)

(1.) The tonic three-fold chord,
(2.) The dominant— { three-fold chord and
{ four-fold chord, and
(3.) The under dominant chord,

belong the most strictly and intimately to every key as its principal elements. They are the heads of the family, they determine its character, and they most distinctly impress the key on the ear, and hence are very properly called its *most essential harmonies.*

We find even whole pieces of music, in which no other harmonies occur, than these most essential ones. Indeed, many pieces are constructed of only *two* chords, the tonic, and the dominant chords. And even, if need be, a piece can be made out with merely the tonic and the under dominant chords alone.

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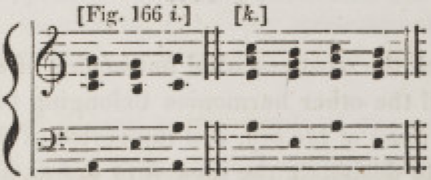
§ 125.

There is still one other circumstance connected with the consideration of the most essential harmonies, that is worthy of remark, and that has doubtless already occurred to the reader; it is the fact that the under dominant harmony always regulates itself by the tonic harmony, so that if the latter is large, the former is so likewise, and if the one is small, so is the other also. In other words, a small under dominant chord always associates itself with a small three-fold tonic chord; and, on the other hand, a large under dominant harmony connects itself with a large three-fold tonic harmony. But the case is entirely otherwise with the upper dominant chord. This is *always large*, even when the tonic and the under dominant are small. Our spontaneous feeling, the organization of our musical ear, requires it to be so, while yet it is difficult to point out the reason for the fact. It is sufficient that such is the fact, and that thus e. g. when the small three-fold chord 𝔢 is heard in *a-small*, it awakes the feeling of another key. The passages in fig. 166, *i.* and *k.* below, consisting of the harmonies 𝔞 and 𝔢, certainly are not *a-small*, but rather *e-small.*

[Fig. 166 *i.*] [*k.*]



REMARK.

Perhaps I had better here also explain the reasons for the facts in question, and say, e. g. that otherwise the small key *would have no sub-semitone* [*leading note:*]—but then the first question would still remain, as before, with the exception only of its being put into different words,—to wit, why must every key have a sub-semitone [leading note]? Perhaps only because the *large* third of the dominant is *adapted to a cadence.* A high-sounding phrase, again! But *for what reason* is it that the *large* third alone is suitable for a cadence? (Compare also the Remark on § 131.)

§ 126.

Besides the most essential harmonies of a key, there are still others particularly appropriate to it, though not so intimately and closely related to the tonic harmony, as the three most essential ones. We called them, in § 122, *the appropriate accessory harmonies of a key*, or *the appropriate accessory chords of the scale:* we will not, however, fully enumerate these in the present place, because their complete enumeration *here* would unduly burthen the memory. Instead of doing this, we will only remark, by way of anticipation, that they all consist of the same tones, which compose the three most essential harmonies already enumerated. The complete enumeration of all the chords belonging to a key, (and thus of course, that of the appropriate accessory chords of the scale,) will follow farther on in the work, (§§ 146—150,) and, taken in that connection, it will not load the memory.

DIVISION IV.

THE SCALE.

§ 127.

The tones of which the most essential harmonies of a key (and hence, according to § 126, all the other harmonies belonging to the key) consist, we call *the appropriate tones of the key*, and the series of these tones we denominate *the scale*, (or, to designate the idea very definitely and to avoid confounding it with any other mere series of tones, it is termed *the scale of the key*,) *the diatonic scale*, Latin—*scala* [of the key.]

Now since the most essential harmonies of the key of *C-large*, e. g. namely,

[c e g], [f a c], [g b d], (§ 123,)
𝕮 𝕱 𝕲

are composed of the tones *c*, *d*, *e*, *f*, *g*, *a* and *b*, so the series of tones *c*, *d*, *e*, *f*, *g*, *a*, *b*, $\bar{c}$, $\bar{d}$, $\bar{e}$, $\bar{f}$, $\bar{g}$, &c. constitutes the scale of *C-large*.

And in like manner the tones *A*, *B*, *c*, *d*, *e*, *f*, *g*♯, *a*, *b*, $\bar{c}$, &c. form the scale of *a-small*, because the most essential harmonies of this key, to wit,

[a c e], [e g♯ b], [d f a], (§ 123,)
𝖆, 𝕰, 𝖉,

consist of these seven tones.

The scale of a large key is called *a large scale* [*major scale*,] and that of a small key is called *a small scale* [*minor scale*.]

The additional appellation *diatonic*, as applied to the scale, only serves to distinguish it from certain other series of tones which usurp the name *scale*, to wit, from the so called *chromatic* and *enharmonic* scales, and from the thing that is called a *chromatic-enharmonic* scale. (Compare § 369, and also the Remark on § XVII of Music Teacher.)

§ 128.

The scale consists, as we see, of seven tones or tone-degrees, which are reckoned from the tonic upwards, by counting the tonic as *the first tone* or *first degree*, the tone next above the tonic as *the second tone* or *second degree*, and so on: *third degree*, (called also the *mediant*; compare § 50,) *fourth degree*, (called also the *under-dominant*, § 123,) *fifth degree*, (also called the *dominant*,) *sixth degree*, (named also the under-mediant,) *seventh degree*, (called likewise the *under-half-tone*, *subsemitone*, because it is only a small degree or half-step from this to the eighth tone,—also *subsemitonium modi*, *subsemitonium octavae*, or briefly merely *semitonium*,—frequently also *the leading tone or note*, and also *characteristic note*, (§ 140* and 140**,) *septima characteristica*, *chorda elegans*, *note sensible*, &c.

The name under-half-tone is inaccurate; for, the distance from *b* to $\bar{c}$ is not a half-tone, not a *half* tone-degree, but a *small* one. (Music Teacher, § XXXVIII.) Moreover, the appellations, *characteristic degree*, *leading note*, &c. are not appropriate; for, other tones also are often characteristic or leading tones, and, vice versa, not every subsemitone is a leading tone, as we shall find in the sequel, (§ 140*, 140**, and 187.)

All tones which do not belong to the scale of the predominant key, are said to be *tones foreign to the scale ;* and in contradistinction from these, we call those which are peculiar to a key, *the appropriate tones of the scale.*

For like reasons, we say of all harmonies which are composed of tones appropriate to the scale of a key, that they are *the appropriate harmonies of the scale ;* and every harmony, on the contrary, in which one or more tones occur which are foreign to the scale, may be said to be *a harmony foreign to the scale.*

(A.) LARGE NORMAL SCALE.[*]

§ 129.

Every tone of a large scale, as e. g. of the large scale of *C*, is, as we perceive, separted from its neighbor either by a small or by a large degree, to wit:

$$c \underbrace{\qquad\qquad}_{\text{large,}} d \underbrace{\qquad\qquad}_{\text{large,}} e \underbrace{\quad}_{\text{small,}} f \underbrace{\qquad\qquad}_{\text{large,}} g \underbrace{\qquad\qquad}_{\text{large,}} a \underbrace{\qquad\qquad}_{\text{large,}} b \underbrace{\quad}_{\text{small.}} \bar{c}$$

The degree from the first tone to the second is a large one, that from the second to the third is also large; but, the step from the third to the fourth is only a small degree. The steps from the fourth tone to the fifth, from the fifth to the sixth, from the sixth to the seventh, are large; but the step from the seventh to the eighth, or to the octave of the first, is small again. (Compare Music Teacher, § XXXVI, at *a*.)

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[*] The word "*normal*" means *that which relates to a pattern, model*, &c. and hence the expression, "*normal scale*" means *a model scale, a scale taken as a model for others.* TR.

§ 130.

This alternation of large and small degrees, is, as one must have already observed, just the same that is given by the long keys of a piano-forte; in a word, the large scale of *C* consists of the series of the natural tones. (Music Teacher, § XVII.) This remark *explains* what we could at an earlier period, (Music Teacher, § XIII,) only imperfectly *describe*, namely the manner in which our names of notes, our system of notation, [or note-writing,] and our key-boards are adjusted.

That is to say, we have given peculiar letter names to just *those* tones which make out the large scale of *C*. (Music Teacher, §§ XIV and XVII.)

It has been assumed, that the degrees of our system of notes, so long as they remain unaltered by a transposition sign, shall exhibit the tones as they occur in the large scale of *C;* or, in other words, it has been agreed that the seven degrees or places on the staff shall represent the seven tones of the *C*-scale, and that the tones constituting this series shall be called *the natural tones.*

The level series of the long keys of the piano-forte has been exclusively devoted to these tones, so that these just give the large scale of *C;* or, in other words, the seven tones which form the scale of *C* have been appropriated to seven keys lying along in one plane.

And inasmuch as our system of tones thus assumed, and the large scale of *C*, so entirely correspond to each other, it has become the custom to concede to the latter the rank of *first* or *normal key;* it is especially considered as holding such a rank among the large keys, and as being particularly *the normal large key.*

(B.) SMALL NORMAL SCALE.

§ 131.

We find in the small scale, as we presented it above in § 127, a succession of large and small degrees, which is entirely different from the one that occurs in the large key: it is particularly observed that the distance from the sixth degree to the seventh, amounts to a *superfluous* second.

A B c d e f g♯ a

large, small, large, large, small, superfluous, small.

This scale also admits of being represented on the system of note-lines or staff, though the latter was primarily adjusted to the large scale of *C*. The small scale of *a* is most easily thus represented, (i. e. with the fewest transposition signs;) because its essential tones *a*, *b*, *c*, *d*, *e*, *f*, occur already in the series of the natural tones, and only *g*♯ requires to be indicated by an elevation sign placed on the *g* line.

The small *a*-scale is, therefore, usually regarded as *the normal small scale.*

REMARK.

I have here, (as I first did in the year 1811, in the Heidelberg Annual Register of Literature, No. 76, p. 1057 et seq.) proposed a small scale different from what is usual. For, it unfortunately happens, that the theories are not agreed on the question, of what tones the small scale consists!

One might indeed cry, *wo!* to the scientific treatment of an art, if even its fundamental properties are not yet fixed! Wo! to the condition of the theory of musical composition, if even its scales do not admit of being incontestably settled! Thus we might indeed most justly exclaim, were we not reminded somewhat to repress our voice, by the circumstance that many other departments of science are no better off, and to console ourselves and our brethren in the art, as is often done in human life, by reflecting upon the equally bad condition of our neighbors, of neighboring arts and sciences.

I will accordingly proceed with a somewhat repressed voice, and remark, that the common doctrine of the nature of the small scale belongs, among others, on the shady side, and indeed on the *most* shady side, of the doctrines of our art.

There is a school which teaches in the manner of established usage, that the sixth and seventh degrees of the small scale are *large in ascending*, but *small in descending*; or, in other words, that the scale of *a*-small, e. g. is, in its ascending series, as follows:

A B c d e f♯ g♯
☝ ☝

but, in its descending series, as follows:

a g f e d c B
☝ ☝

A few others, lead by *right instinct*, have ventured to believe, that the tones *f*♯ and g♯ are not elements of the small *a*-scale, but that *f* ♮ and g♯ are uniformly such. The former do not prove their doctrine at all, and the latter theirs scarcely at all. The former have indeed the most substantial of all reasons for not proving theirs, to wit, the doctrine has no foundation in fact; but the latter, who are right, are still very wrong in not knowing *why* they are right, or, in case they do know, they are wrong in not expressing the matter better than it has yet been expressed.

I will here, by way of anticipation, attempt this proof, though it cannot become entirely clear until at a more advanced stage of our treatise.

It has long been the custom to construct the *large* scale of those tones which constitute the three most essential three-fold chords of the large key, and accordingly to recognize the tones

c d e f g a b

as the scale of the large key of *C*. (§ 127.)

Now if we establish the definition: a scale or scale of a key is the collective mass of the tones which compose the three most essential three-fold chords of the key, and if we construct the scale of the small key on the same principles, the latter cannot, unless we abandon all pretensions to consistency, be constructed otherwise than with *f* and g♯, and it usually strikes unbiassed minds very singularly, to hear, according to the common doctrine, the ascending series of the contents of three chords spoken of, in defining the contents of these chords, as contradistinguished from the descending series of the same, and particularly to find that these contents are materially different in the upward series from what they are in the downward!

But, in particular, as it respects the position that the tones *f*♯ and *g* appropriately belong to the small scale of *a*, and, in the first place, as it respects

(1.) The tone *g*, we must suppose, in order to assume this as an element of the small scale, that the small key has two different upper dominant harmonies, one with a large third, (as the indispensable subsemitone or leading note,) and a second with a small third. But this

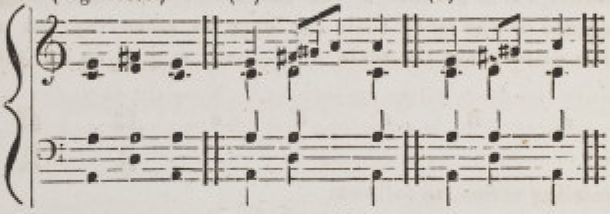
(*a.*) Would not only run counter to all analogy, inasmuch as the large key has only one species of upper dominant harmony, and in general, only one scale, but

(*b.*) An upper dominant harmony with a small third would contradict our perceptions; for, the three-fold chord [e g b] is clearly felt not to belong to *a*-small, as is shown by the examples referred to in § 125, as well as by others.

If we would avoid such an absurdity, we can do so only by recognizing *the large third* alone of the upper dominant harmony as belonging to the small key, and by thus acknowledging, not *g*♮, but *g*♯ alone, as being universally an element of the small *a*-scale.

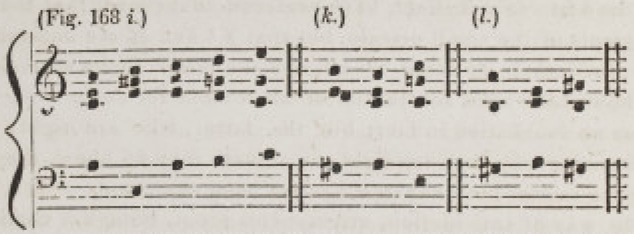
(2.) We find, in like manner, that, in order to regard the tone *f*♯ as an element of the small scale of *a*, (*a.*) we must not only assume two different under dominant harmonies, but that (*b.*) *a*-large 𝔇-three-fold chord in *a*-small must do violence to the ear: see the following fig. 167.

(Fig. 167. *i.*)



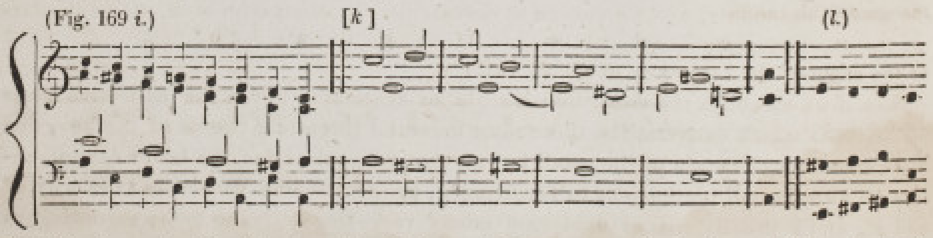
and in general every other harmony in which *g*♮ or *f*♯, occurring as a harmonic element, always either permanently or transiently eradicates the impression of *a*-small; fig. 168.

(Fig. 168 *i.*)



I am by no means ignorant of the fact that passages which run predominantly in *a*-small, admit of the very transient occurrence of such harmonic combinations as [e g b], [c e g], [f♯ a d̄] and the like. Fig. 169.

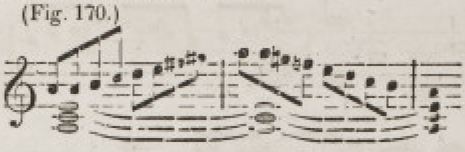
(Fig. 169 *i.*)



But it is in part self-evident, and will, in part, be more particularly and fully shown in the doctrines of modulation and of transitions, that such combinations in such cases either form transient modulations, or that the tones *f*♯ and *g*, occurring therein, are merely transition notes; and, accordingly, such examples by no means show that the tones *f*♯ and *g* belong to the small scale of *a*, as *elements* of some harmony belonging to the small key of *a*.

Thus it is clearly evident, that the common doctrine of the pretended variable small scale, did not arise in any rational way.—From what other source then may it have originated? Evidently from the misconstruction of the observed fact, that in musical compositions in *a*-small, the tones *f*♯ and *g*♯ do indeed very often occur in an ascending melody, while in a descending melody, on the contrary, the tones *g*♮ and *f*♮ occur. They, e. g. in such cases as that in fig. 170.

(Fig. 170.)

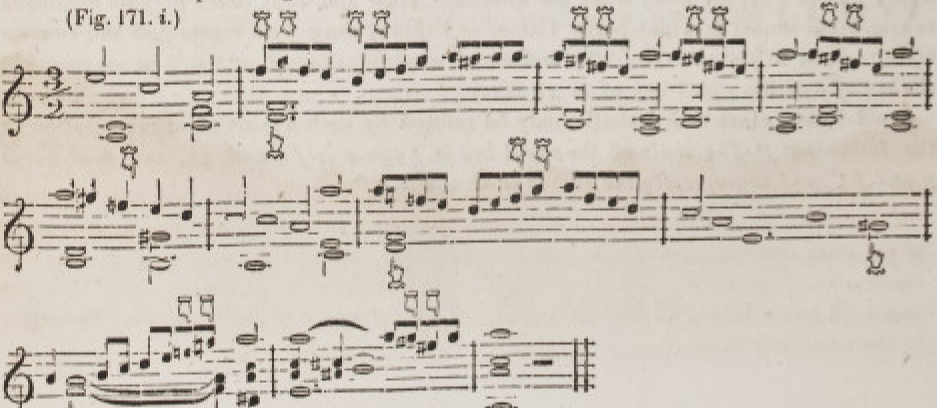


the melody ascending by diatonic degrees from $\bar{\bar{e}}$ to $\bar{\bar{a}}$ must truly proceed by the tones $\bar{f}$♯ and $\bar{\bar{g}}$♯, but in descending from $\bar{\bar{a}}$ to $\bar{\bar{e}}$ it must proceed by the tones *g* and $\bar{f}$. The reason for this, however, as will appear from our doctrine of transitions, is simply the fact, that no transition tone is admissible which does not connect itself with a tone that is at most but a large degree higher or lower than itself, or, in other words, that it is an indispensible condition of the introduction of transient tones, that the distance to the next tone above or below, be at most not more than a large degree; and hence, the tone *f* cannot be used as an accessory tone before *g*♯, (thus in the ascending progression,) but only *f*♯, and for a like reason *g* alone can appear as an accessory tone before *f*, (thus in the descending movement.) Now the fact, that thus *in many cases* *f*♯ and *g*♯ are employed in an ascending melodic progression, while *g* and *f* are used in a descending melodic progression, has misled musicians to believe and to teach, that *the scale itself* is thus variable.

Now, in the first place, it is in itself rather a gross blunder, to argue from the accidental elements of a melodic figure to the essential chords of the key, and to undertake to regard every tone that may chance to occur melodically in a key, as therefore belonging to the scale of that key! The tones *g*♯, *d*♯, *a*♯ and many others may just as well be regarded as belonging to the large scale of *C;* for, they certainly can occur melodically in this key; and in this way there would at last be *no tone* that might not belong to *every* scale!

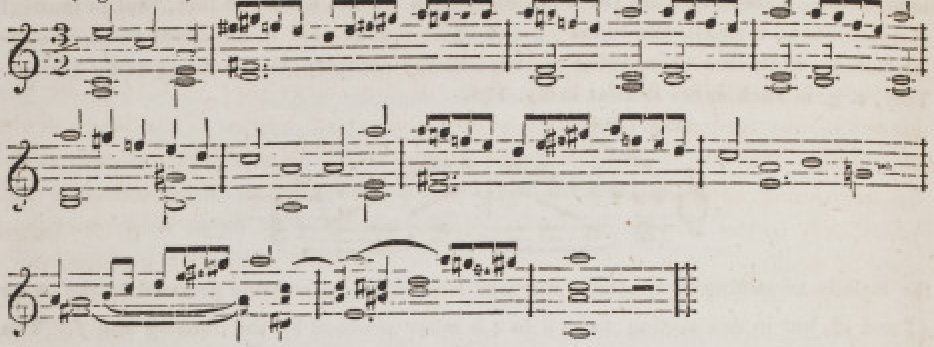
But the commonly received doctrine is, secondly, most strikingly false in another respect; for, irrespective of the question, whether *f*♯ and *g* are essential elements of the small scale of *a*, or not, and taking into view the simple consideration, to what extent *f* and *f*♯, *g* and *g*♯ actually occur as melodic tones in the small key of *a*, it is seen to be most obviously untrue that a melody in a small key must always employ *f*♯ and *g*♯ in ascending, and *g* and *f* in descending. It often happens, on the contrary, that the exact reverse may and indeed in many cases must take place: *f* and *g* must be used in ascending, and *f*♯ and *g*♯ in descending, as is clearly seen in many places of the short example in fig. 171, *i*,

(Fig. 171. i.)



In fig. 171, *k*,

(Fig. 171. *k*.)



I have remodeled this passage according to the common rule: "*f*♯ and *g*♯ in ascending, *f* and *g* in descending;"—but listen! it sounds horribly, and of all the theorists who teach that commonly received rule, certainly no one would write in this manner: all would indisputably write as in fig. 171, *i*, above, and thus directly counter to the rule.

This again most strikingly shows how the authors of our theories, because they in *many* cases found *f*♯ and *g*♯ to be employed in an ascending melody, and *f* and *g* in a descending melody, at once inconsiderately proclaimed this fact as a general or universal rule, and how, as if they had no eyes and no ears for the perception of examples at every moment occurring to prove the untenableness of their position, they have forever stupidly and thoughtlessly repeated, one after another, the old *credo:* "upwards, *f*♯ and *g*♯, downwards, *f* and *g*,"—and have most faithfully continued to repeat it just as the masters had taught it to them, without even once mentioning that it is sometimes otherwise and not unfrequently *must* be otherwise; yes, even that many a one (as e. g. *Rameau*, in *d'Alembert*, § 85,) has even trodden on the very heels of the truth, and still has immediately sunk down again (§§ 91 and 92,) into the old customary doctrine (the prevalent sin:) "upwards, *f*♯ and *g*♯; downwards, *f* and *g!*"

Thus much in the present place, as *preliminary* proof of the utter and manifold incorrectness of the common doctrine of two different sorts of small scale, and of an ascending and descending melody in a small key.

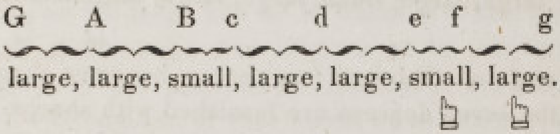
To furnish another and more rational doctrine in the place of the one here exhibited as erroneous, falls within the appropriate objects of the present Theory. The place for doing this is in part the doctrine of modulation, where I examine the question (hitherto investigated by no one.) As what and as belonging to what key, does every harmony that occurs impress itself upon the ear? And, again, the proper place for presenting the true doctrine of the small key is in part the doctrine of transitions, where I (and I for the first) treat the question: How and what tones may be employed as transition tones? in which place I also, as I think, show by a connected and consecutive train of argumentation, why and under what relations, *f* or *f*♯, *g* or *g*♯ occurs in the melody of the small key of *a*. (§ 379.)

But I know, alas! that I shall easily be refuted by such chains of argumentation as the following: "*The scale of the small key is, 'upwards f♯ and g♯, and downwards g and f;' and consequently the author is here wrong.*"

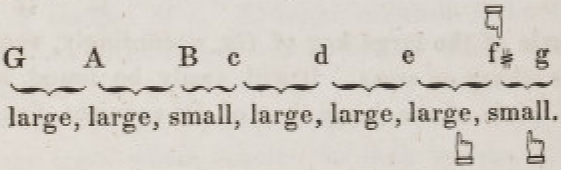
(C.) TRANSPOSITION OF LARGE SCALES.

§ 132.

Other large scales also, than that of the large key of *C*, can be exhibited in our system of notation, which consist of copies of the large scale of *C*-large, placed on other degrees of the staff. Not indeed entirely without additional appendages; for, our system of notation is immediately adjusted only to the large scale of the large key of *C*. Thus, e. g. the large scale of *G*-large cannot be represented on the staff without some addition; for, in this, as well as in every other large scale, the step from the sixth tone to the seventh must be large, while that from the seventh tone to the eighth must be small; but, if we begin to reckon from *G* in the series of the natural tones, the step from the sixth note *e* to the seventh *f* is small, and, vice versa, that from *f* to *g* is large:



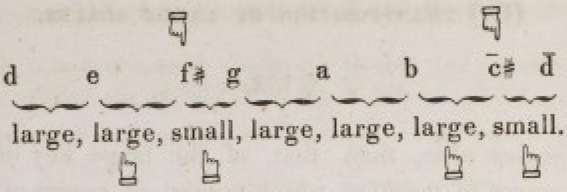
In order, therefore, to make the series of degrees like that of the large scale of *C*-large, we must use a transposition sign. In order, namely, to make the step from the sixth degree to the seventh larger, and that from the seventh to the eighth smaller, the seventh tone *f*, which otherwise would be only a *small* degree higher than *e*, must be chromatically raised, and, instead of the *f*, another tone must be written which is a *large* degree higher than *e*, namely *f♯*, from which *f♯*, moreover, to the eighth tone *g*, the distance is only that of a small degree:



Thus the tone of the short key *f♯* occurs in this scale.

Now inasmuch as such a scale is fundamentally a copy of the large scale of *C*-large and differs only in the single circumstance that it is *trans-placed* or *transposed* to another degree of the staff, so every large key and every large scale which is not that of *C*-large is said to be *transposed*. These transposed keys and scales might also be called chromatic keys and scales, because they are represented by means of chromatic changes, (Mus. Tr. § XVII.) This expression is not, however, used for such a purpose; the terms chromatic key and chromatic scale are applied rather to many other things which are neither keys nor scales.

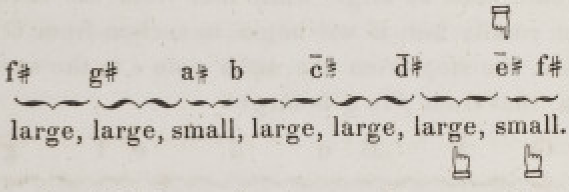
In order to exhibit the large scale of the large key of *D*, we must not only put *f♯* in the place of *f*, but *c♯* in the place of *c*:



In like manner, we find that the large scale of *A*-large requires three sharps; while that of *E*-large requires four.

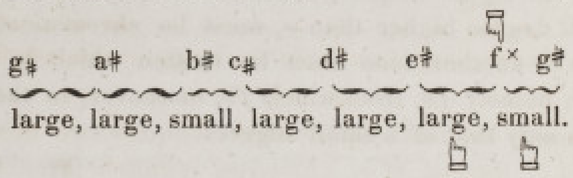
The large scale of the large key of *B* requires the use of five sharps, and hence as many as there are upper* or short keys.

If we would exhibit the large scale of the large key of *F*♯, we must change *e* also into *e*♯:



In the large scale of *C*♯-large, *b* moreover becomes changed into b♯, in which case all the seven degrees are furnished with sharps.

In order to exhibit the large scale of the large key of *G*♯, we must introduce still one elevation sign more, and as all the degrees are already furnished with sharps, we employ, in raising one of these degrees still higher, a double elevation sign or double sharp, called also a cross, to wit ×; thus:



The large scale of the large key of *G*♯, accordingly, requires six sharps and one double sharp or cross. It will easily be found, in like manner, that the large scale of the large key of *D*♯ requires five sharps and two crosses, &c.

But a momentary use, however, at most is ever made of such widely transposed—such very chromatic keys. For, we shall directly become acquainted with others, less chromatic, which coincide with the former and supply their place. (§ 137.)

---

§ 133.

If we arrange the large keys in a series, in that order in which one always requires one more sharp than the preceding, to wit:

---

* The short keys of a piano-forte or organ are sometimes called "*upper*" or "*higher*," because they are higher on the key-board than the longer keys. Tr.

C, G, D, A, E, B, F♯, C♯, G♯, D♯, &c.

we readily observe, that the scale of *the tone which is a fifth higher,* (or, which is the same thing, *a fourth lower,*) *than the preceding,* always requires one more sharp,—and that this additional sharp is always requisite *for the purpose of representing the so called subsemitone or leading note,* (§ 128,) that is to say, for the purpose of making the step from the sixth tone to the seventh large, and that from the seventh to the eighth small.

G A B c d e f♯ g
C D E F G A B c d e f g

§ 134.

But if the scale of the large key of *F,* which is a fifth lower (or a fourth higher) than that of the large key of *C,* is to be exhibited, it becomes necessary to put *b♭* in the place of *b,*—for similar reasons, or, in a manner, for a reason the opposite of that which we mentioned in the foregoing case, namely in order to make the step from the third to the fourth small, whereas it would otherwise be large (*a—b;*) thus:

f g a b♭ c d e f
large, large, small, large, large, large, small,

In like manner, we find that *B♭*-large requires two flats, namely *b♭* instead of *b,* and *e♭* instead of *e.* *E♭*-large requires three flats,—*A♭*-large four flats,—and so on to *D♭*-large, which has as many flats as there are upper or short keys. *G♭*-large requires also *c♭* instead of *c,* and *C♭*-large requires both *c♭* and *f♭,* and *F♭*-large requires even *c♭, f♭,* and *b♭♭,* &c.

Here again, the keys which require for their transposition an excessive number of flats, are relieved by simpler keys with sharp signatures. (§§ 137 and 140.)

§ 135.

It will be observed here, moreover, that the order of succession in which a key always requires one more flat than the preceding, is just the reverse of that which took place in those transposed by sharps (§ 133,) to wit:

C, F, B♭, E♭, A♭, D♭, G♭, C♭, F♭, &c.

and that each additional flat becomes necessary *for the purpose of representing the fourth tone of the scale,* i. e. for the purpose of making the step from the third to the fourth tone small, and that from the fourth to the fifth large; thus:

C D E F G A B c d e f
F G A B♭ c d e f
♭

---

§ 136.

The following table exhibits a general view of the chromatic tones requisite for representing each transposed large key in our system of notation

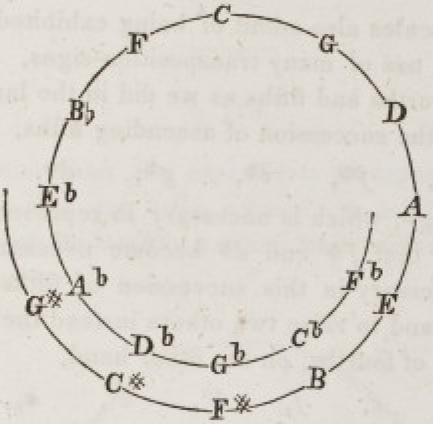
&c.		
D♯-large	requires	g♯, d♯, a♯, e♯, b♯, f×, c×.
G♯ "	"	c♯, g♯, d♯, a♯, e♯, b♯, f×.
C♯ "	"	f♯, c♯, g♯, d♯, a♯, e♯, b♯.
F♯ "	"	f♯, c♯, g♯, d♯, a♯, e♯.
B "	"	f♯, c♯, g♯, d♯, a♯.
E "	"	f♯, c♯, g♯, d♯.
A "	"	f♯, c♯, g♯.
D "	"	f♯, c♯.
G "	"	f♯.
C "	"	nothing.
F "	"	b♭.
B♭ "	"	b♭, e♭.
E♭ "	"	b♭, e♭, a♭.
A♭ "	"	b♭, e♭, a♭, d♭,
D♭ "	"	b♭, e♭, a♭, d♭, g♭.
G♭ "	"	b♭, e♭, a♭, d♭, g♭, c♭.
C♭ "	"	b♭, e♭, a♭, d♭, g♭, c♭, f♭.
F♭ "	"	e♭, a♭, d♭, g♭, c♭, f♭, b♭♭.
B♭♭ "	"	a♭, d♭, g♭, c♭, f♭, b♭♭, e♭♭.
&c.		

---

§ 137.

I have said above, that the excessively transposed large keys, i. e. those which require too many transposition signs, can be dispensed with, and that their place can be supplied by others. If, that is, we compare the transposed large keys with one another, we find that those which are transposed by an excessive number of sharps coincide with others that are transposed by flats, the latter differing from the former only enharmonically; and that we can in like manner substitute for a key requiring an excessive number of flats, another with but a small number of sharps. Thus, instead of *G*♯-large, e. g. which would require six sharps and a double sharp, we can write *A*♭-large, which requires only four flats. In the same way, *E*-large may supply the place of *F*♭-large. So also *F*♯-large can be written instead of *G*♭-large, and *D*♭-large instead of *C*♯-large.

A sensible representation of this coincidence of the keys most different from one another—this concurrence of extremes, is furnished by the following figure:



It is seen from this, how the transposed large keys, proceeding from *C*-large, constantly recede farther and farther from each other, while yet the most remote of all approach each other again, so that those transposed by sharps come at last to coincide enharmonically with those transposed by flats, and reciprocally to relieve each other, and thus, as it were, to form a circle. The above series of ascending fifths or descending fourths, (or, which is the same thing, only in the reversed order, the series of descending fifths or ascending fourths,) is called, for this reason, *a circle of fifths.* (It might with equal propriety be called *a circle of fourths.*) Only *twelve* different large keys, therefore, are usually assumed, while *F*♯-large and *G*♭-large, e. g. are regarded as being but enharmonically diverse and the same as one, so far as sound is concerned, and are actually reckoned as one;—so also *G*♯-large and *A*♭ large,—*D*♭ and *C*♯,—*C*♭ and *B*,—*F*♭ and *E*,—*B*♯ and *C*,—*E*♯ and *F*,—*D*♯ and *E*♭, &c. The keys thus resolving themselves into one another by an enharmonic transmutation, might be termed *enharmonically parallel keys.* (Compare Music Teacher, §§ XIX and XXI.)

Thus *F*♯-large is, in reality, the remotest transposition, by sharps, from *C*-large. For, though *C*♯-large would indeed be the most remote, yet since it coincides with *D*♭-large, it becomes, as the foregoing figure shows, nearer *C*-large again. So also *G*♭-large is the most remote transposition by flats from *C*-large, because *C*♭-large coincides enharmonically with *B*-large. Accordingly, the point of the circle farthest from *C*-large is *F*♯-large or *G*♭-large. So also is *G*-large the point in the circle most remote from *D*♭ or *C*♯; &c.

The keys which are thus diametrically opposite each other, to wit, *C* and

G♭ or *F♯*,—*G* and *D♭* or *C♯*,—*A* and *E♭*,—*E* and *B♭*,—*B* and *F*, &c. may be called *antipodes*, [*opposites*, literally *with the feet directly opposite to one another*, as are those of persons standing on the opposite sides of the globe.]

(D.) TRANSPOSITION OF SMALL SCALES.

§ 138.

Transposed *small* scales also admit of being exhibited on the same staff; they only require the use of many transposition-signs. If we go through them in a series of fourths and fifths as we did in the large scales, we shall find,—(1.) That in the succession of ascending fifths,

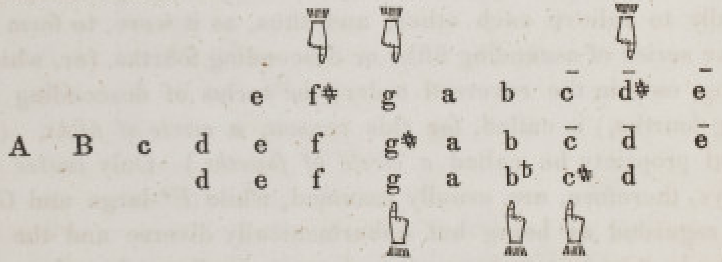
a, *e*, *b*, *f♯*, *c♯*, *g♯*, *d♯*, *a♯*, &c.

the change of *g* into *g♯*, which is necessary in representing *a*-small, disappears in *e*-small, and that *f♯* and *d♯* become necessary in its stead; and thus it is always necessary in this succession of fifths, to lower a tone of the preceding scale, and to raise two others instead thereof.

(2.) In the series of fourths, on the other hand,

a, *d*, *g*, *c*, *f*, *b♭*, *e♭*, *a♭*, *d♭*, &c.

two tones of the preceding scale must each time be lowered, and, in exchange for this, another must be raised. Thus, e. g. the *g♯* found in *a*-small must be lowered to *g* in *d*-small, and *b* also must be changed to *b♭*, while, on the contrary, *c* must be exchanged for *c♯*.



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§ 139.

The following table presents a general view of the chromatically changed tones, which are requisite in exhibiting each of the small scales.

&c.

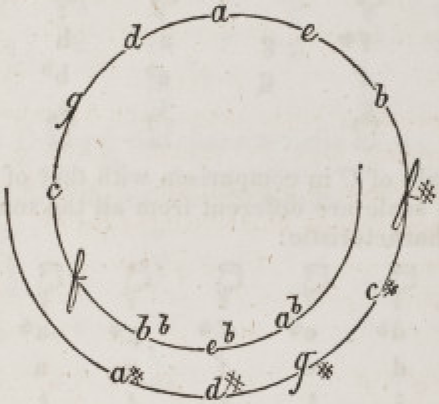
d♯-small	requires	f♯,	g♯,	d♯,	a♯,	e♯,	c×,
g♯	"	"	c♯,	g♯,	d♯,	a♯,	f×.	
c♯	"	"	f♯,	c♯,	g♯,	d♯,	b♯.	
f♯	"	"	f♯,	c♯,	g♯,	c♯.		
b	"	"	f♯,	c♯,	a♯.			
e	"	"	f♯,	d♯.				

a	"	"	g♯.				
d	"	"	c♯,	b♭.			
g	"	"	f♯,	b♭	e♭.		
c	"	"	e♭,	a♭.			
f	"	"	b♭,	a♭,	d♭.		
b♭	"	"	b♭,	e♭,	d♭,	g♭.	
e♭	"	"	b♭,	e♭,	a♭,	g♭,	c♭.
a♭	"	"	b♭,	e♭,	a♭,	d♭,	c♭,	f♭.
&c.							

---

§ 140.

Here again we can shun the excessively transposed keys, and supply their place by those that are more natural, as is shown by the following figure; for this reason we usually assume only *twelve* small keys, as we do only twelve large ones.



(E.) CHARACTERISTIC NOTES.

§ 140.*

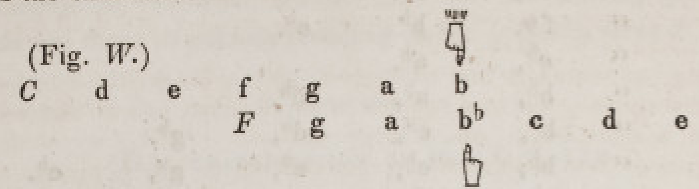
It is usual to denominate that tone or those tones by which one scale is distinguished from some other given scale, *nota characteristica*, *characteristic note*, *characteristic tone*. Thus, e. g. the tone *f*♯ is that by which the large key of *G* is distinguished from the large key of *C*, and is accordingly the characteristic tone of the large scale of *G* in reference to that of *C*; and, vice versa, *f*♮ is the characteristic tone for the large scale of *C* in reference to that of *G*.

(Fig. *U*.)

G a b c d e f♯
C d e f g a b

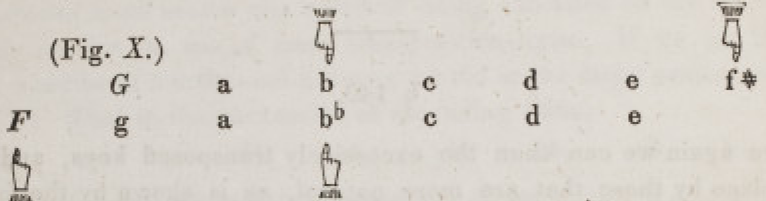
In like manner, the tone *b*♮ is the characteristic one for *C* in relation to *F*, while *b*♭ is the characteristic tone for *F* in relation to *C:*

(Fig. *W.*)



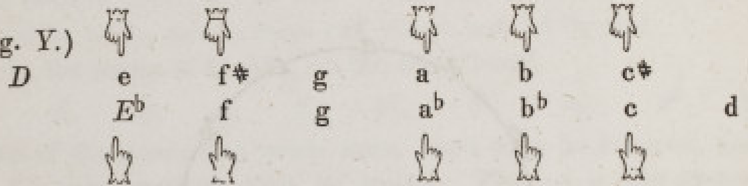
Between *F*-large and *G*-large, the two tones *b*♭ and *f*, and the corresponding *f*♯ and *b*, are the most distinguishing:

(Fig. *X.*)



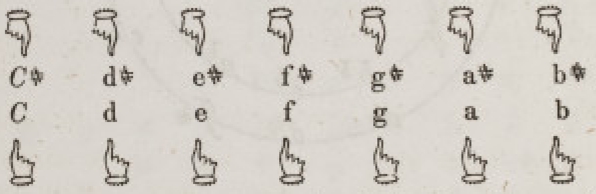
The most distinguishing tones between *D*-large and *E*♭-large, are *e*, *f*♯, *a*, *b*, *c*♯, and the corresponding *e*♭, *f*, *a*♭, *b*♭, *c:*

(Fig. Y.)



Taking the large scale of *C* in comparison with that of *C*♯, we find that *all* the tones of the one scale are different from all the tones of the other, and that hence *all* are characteristic:

(Fig. Z.)



and that strictly, therefore, *none* is distinguishingly characteristic.

(1.) If we go through the large keys, comparing them one with another, we shall find that,

(*a.*) In *the ascending series of fifths*, the seventh degree, the tone situated at the distance of a small second below the key note of each key, (*the subsemitonium modi*,) is always the characteristic tone—the tone that distinguishes this key from the preceding one;—and that,

(*b.*) In the reversed or *descending succession of fifths*, the fourth tone of each scale (*quarta toni*) is the one that distinguishes the key from the preceding one. (Compare §§ 133, 135, 136.)

Take, for example, the large key of *G;* here the seventh degree, the tone *f*♯, is the characteristic note of the key *G*-large, in reference to the large key of *C*, (compare fig. *U.* of this section,) while the fourth degree of *C*-large, the tone *f*♮, is the characteristic tone for this key, in reference to *G*-large. In like manner, the *seventh* degree of *C*-large, the tone *b*, is the one that distinguishes this key from *F*-large, while, on the other hand, *F*-large distinguishes itself by its *fourth* degree, *b*♭, from *C*-large. (See fig. *W.* of this section.)

&c.
A
|
D
|
G
|
C
|
F
|
B
&c.

(2.) If we take a view of *large keys as compared with small keys*, we shall find other tones to be the characteristic ones, and

(3.) If we *compare the small keys with one another*, we shall find the characteristic tones to be others still.

Assuming, as seems as last to be generally acknowledged to be the most rational, that there is but one species of small scale, to wit, that which has a small third, a small sixth, and a large seventh, (§ 131,) we shall find, on *comparing large keys with small keys*, according to No. 2, above, that merely the tones g♯ and the corresponding g♮, i. e. the *seventh* and the corresponding *fifth* degrees, are the characteristic tones between *a*-small and *C*-large. (§ 164.)

						☟		
		C	d	e	f	g	a	b
a	b	c	d	e	f	g♯		
						☝		

The characteristic tones of *c*-small in reference to *C*-large, are e♭ and a♭, and, vice versa, the characteristic tones of *C*-large in reference to *c* small, are the corresponding a♮ and e♮, i. e. the *third* and the *sixth* degrees. (§ 165.)

		☟			☟	
C	d	e	f	g	a	b
c	d	e♭	f	g	a♭	b;
		☝			☝	

between *e*-small and *C*-large, the characteristic tones are f♯ and d♯, and the corresponding d♮ and f♮, i. e. *the second* and *seventh*, and the corresponding *second* and *fourth* degrees of the scale:

	☟		☟					
C	d	e	f	g	a	b		
		e	f♯	g	a	b	c	d♯
			☝					☝

&c.

&c. f♯ - b - e - a - d - g - c &c.

As it respects No. 3, above, to wit, *small keys as compared with small*, the characteristic tones between *a*-small and *e*-small, e. g are (*a*.) In *the ascending succession of fifths*, f♯, g and d♯,—and (*b*.) In *the reversed* or *descending succession*, the tones d, f and g♯, i. e. the *second*, *third*, and *seventh* degrees of e-small, answering to the *fourth*, *sixth* and *seventh* degrees of *a*-small:

	☟	☟				☟			
e	f♯	g	a	b	c	d♯			
			a	b	c	d	e	f	g♯;
						☝		☝	☝

between *d*-small and *a*-small, the characteristic tones are g, b♭, and c♯, and the corresponding g♯, b, and c:

	☟	☟				☟			
a	b	c	d	e	f	g♯			
			d	e	f	g	a	b♭	c♯,
						☝		☝	☝

between *e* and *d* the characteristics are the *second, third, fifth, sixth*, and *seventh* of *e*, answering to the *third, fourth, sixth, seventh* and *first* of *d*.

☟ ☟ ☟ ☟
e f♯ g a b c d♯
d e f g a b♭ c♯
☝ ☝ ☝ ☝

&c. (Compare §§ 138 and 139.)

It is perceived from all this, how, under different relations, at one time this and at another time that degree of a scale appears as the characteristic note, and how inappropriate it would be to say in general: "the characteristic note is such and such a particular degree of every scale."

REMARK.

The following figures, corresponding to the foregoing, may serve to show, what degrees would become the characteristic ones, in case the small scale were to be taken in the former and commonly received manner, namely, according to the usual model, and how, considered in this point of view, at one time this and at another time that degree appears as the characteristic one, in the case both of small keys as compared with large keys, and of small keys as compared one with another.

Large keys as compared with small keys :

C d e f g a b c
a b c d e f g a.

Here there would be no distinguishing characteristic tone.

☟ ☟ ☟
C d e f g a b c
c d e♭ f g a♭ b♭ c
☝ ☝ ☝

Here the third, the sixth and the seventh degrees are characteristic ones.

☟
C d e f g a b
e f♯ g a b c d
☝

Here the characteristic tone would be that of the fourth degree, corresponding to the second degree.

Small keys as compared one with another :

Here, between *a*-small and *e*-small,

☟
e f♯ g a b c d
a b c d e f g,
☝

the second degree of *e*-small would be the characteristic tone, answering to the sixth of *a*-small;—between *a*-small and *d*-small,

☟
a b c d e f g
d e f g a b♭ c
☝

the characteristic tone would be the sixth of *d*, corresponding to the second of *a*;—and in the case of *d*-small as compared with *e*-small,

☟ ☟
e f♯ g a b c d
d e f g a b♭ c,
☝ ☝

the characteristic tone would be the second and fifth of *e*, answering to the third and sixth of *d*.

---

§ 140**.

Many, and indeed almost all, writers, apply the term *nota characterstica, characteristic note*, only to the tone of the seventh degree of each scale,—(§ 128.)

It is easily perceived, that in this these authors limit their view *simply to the relation of a large key to its nearest neighbor in the ascending succession of fifths*, (above at 1. *a.*)—while, in *the succession of descending fifths* or *ascending fourths*, the case is directly reversed, (above at 1. *b*,) and again it is otherwise too *in the relation of the large keys with the small*, (above at 2,) and yet again entirely diverse in *the relation of the small keys to one another, in each direction*, (above at 3.)

REMARK.

We meet with the following unintelligible, not to say absolutely senseless, remark of Koch in his Musical Lexicon, under the article in question, to wit: "the subsemitonium is characteristic only in those keys which have no *B*s in their signature, because it is by this [the subsemitonium] that the contents of the scales of these keys are distinguished from one another. . . . . . In those keys, on the contrary, which have *B*s in their signature, the *quarta toni* [the fourth from the tonic] must indisputably be regarded as the characteristic tone, for the large key of *F* distinguishes itself from the large key of *C*, not by its under-half-tone *e*, but merely by its pure fourth *b*♭."

It is very manifest, that the worthy author had in his eye, while writing down such instruction, (1.) merely the relation (considered above under No. 1,) of a large key to its next neighbor, in the ascending and descending succession of fifths, but did not advert at all to the more remote relations of keys in this series, (as e. g. the relation of *F* to *G*,) and that (2.) he still less took into consideration the relation of a large key to any small key, whether near or remote, and that (3.) he was equally blind to the relations of small keys to one another; but that, worst of all, he even (4.) confounded the idea of *the ascending and descending succession of fifths*, in the case of the large keys mentioned under (1.) above, with that of *keys with sharps and keys with flats*. For, as (compare the above figures in § 140*) the subsemitonium of the large key of *G*, the tone *f*♯, in ascending from *C*-large to *G*-large, is the characteristic tone, so, in ascending from *F*-large to *C*-large, the subsemitonium *b*♮ is the characteristic tone; and also in ascending from *B*♭ to *F*, the characteristic tone again is the subsemitonium of the latter key, *F*, namely the tone *e*♮; and so universally, in ascending, the subsemitonium of the last key is the characteristic tone, and thus the fact by no means applies exclusively in keys with sharps, but also in those with flats; and hence it is untrue that in keys with flats, the *quarta toni* [the fourth tone from the tonic] is always the characteristic tone;—and, vice versa, in descending, the *quarta toni* is the characteristic tone as well in keys with sharps, as in those with flats; for, as the fourth of the large key of *F*, i. e. the tone *b*♭, is the characteristic tone, in descending from *C*-large to *F*-large, so also is the *quarta toni*, *f*♮, the characteristic tone, in descending from *G*-large to *C*-large,—and the *quarta toni* *c*♮ is likewise the characteristic tone in descending from *D*-large to *G*-large,—and so universally in descending the *quarta toni* is the characteristic tone, and by no means so merely in keys with flats, but also in those with sharps; and thus it is untrue again, that the subsemitonium is always the characteristic tone in keys with sharps!!

The whole *qui pro quo* [*how, by what means*,] seems to have arisen from the fact that Mr. Koch, when he wrote thus, not only confined his view exclusively to the relation of a large key to another large key standing in the most immediate connection either above or below, but even in this narrow circle of vision contemplated only an ascending from *C*-large to *G*, *D*, *A*, &c. and only a descending from *C*-large to *F*, *B*, *E*♭, &c.; and, by taking only these partial views, he happened to notice indeed no keys in ascending but those with sharps, and none in descending but those with flats. Now this was enough to induce him to predicate (1) that which is true *in all cases of ascending*, (namely the fact that in ascending the *subsemitone* is the characteristic note,) only of those keys which happened to fall in his way from *C* upwards and thus only of those with sharps,—(2), for the same reason, to predicate what is true *in all cases of descending*, (namely the fact that in descending the *quarta toni* is the characteristic note) only of keys with flats,—(3), to maintain *in relation to keys with flats* that which is true *only in reference to the descending direction*, and positively *untrue* in reference to the ascending direction, (namely, that in such keys the *quarta toni* is the characteristic tone,)—(4), to maintain *in relation to keys with sharps* that which is true *only in ascending*, and *untrue* in descending, (namely, that in such a case the *subsemitonium* is the characteristic tone,)—and (5), to lay down a principle in general which, laying the gross errors here complained of entirely out of the question, is totally inappropriate to the relations of the large keys to the small keys, as well as to those of the small keys to one another, and which is but partially applicable to the reciprocal relations of the large keys.—All this the man does in the compass of scarcely eleven half lines.

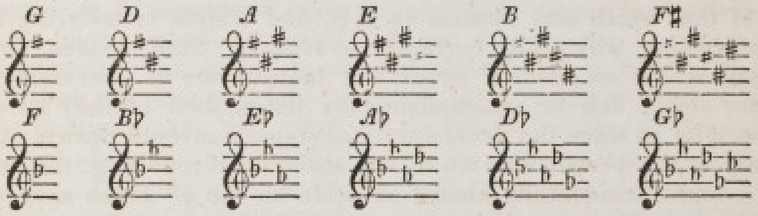
Upon the manner in which musical writers, and particularly our worthy *Koch*, are accustomed to treat the idea of *leading note*—an idea kindred to that of *characteristic note* [*nota characteristica*,] I shall animadvert in § 187.

(F.) CHROMATIC SIGNATURE.

§ 141.

If we wish to write a piece of music in a transposed large key, we are accustomed to write the requisite transposition signs once for all at the beginning, and thus to save the trouble of prefixing a sharp or flat to each individual note which is to be effected by such a sign, as it occurs along the piece. (Mus. Tr. § XXX.) One or more transposition signs thus written at the commencement of a piece of music is called *a signature*, (in French, *la décoration*,) or *the chromatic signature* (Mus. Tr. § XVII, Remark,) for the purpose of distinguishing it from *the rhythmical signature*, (Mus. Tr. § LIV) Accordingly in the beginning of a piece of music written in the large key of *G*, where of course *f*♯ is requisite, a sharp (♯) is placed on the *f*-line;—so in the large key of *D*, one is placed on the *f*-line, and another on the *c*-line or in the *c*-space;—in the large key of *F*, a flat (♭) is placed on the *b*-line;—in *B*-large, one flat is placed on the *b* line, and another on the *e*-line, or in the *e*-space, &c.—These transposition signs are usually written in the order in which they become necessary according to the succession of fifths in the large keys, (§ 136,) and thus the first sharp is placed on the *f*-line, the next on the *c* line, or in the *c*-space, &c.; and, in like manner, the order of the flats is as follows: first *b*♭, then *e*♭, then *a*♭, &c.

(Fig. 172. *i.*)

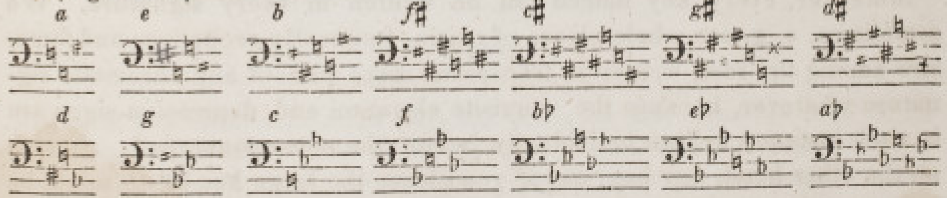


§ 142.

The requisite transposition signs are also usually placed once for all at the beginning, in pieces of music written in small keys.

If we were here to pursue the same course that we adopted in the large keys, the small key of *a*, which requires *g*♯ (§§ 127, 138 and 139,) must have *g*♯ written in its signature; *d*-small, to whose scale *b*♭ and *c*♯ belong, must have a flat before *b* and a sharp before *c* in its signature; *g*-small must have two flats and one sharp, &c. Fig. 172, *k*.

(Fig. 172. *k.*)



Such a signature would be entirely consistent, and we should moreover be able, from such a signature, to determine at first sight, whether a piece of music is in a small key.—But musicians have here preferred to introduce another way. Instead of marking in the signature those tones which in every instance characterize a small key, they use the signature *which is appropriate to that large scale which sustains the nearest relationship or has the most similarity to the small scale in question*, and this is always the large scale of the small third of the small key. Thus, e. g. the scale of *a*-small is most similar to that of *C*-large, and accordingly it is the custom to write no signature at all for *a*-small or for *C*-large. For the same reason a sharp is used in the signature of *e*-small, as well as for that of *G*-large, and a flat in that of *d*-small as well as for that of *F*-large. Hence, whenever the seventh tone of the scale is to be used, it becomes necessary always to mark that tone with a sign of elevation, and thus e. g. whenever the tone *g*♯ is to be employed in the small key of *a*, a sharp must be prefixed to the note *g;* and so likewise in *d*-small, the *c*♯ must be made by placing a sharp before *c;* and in *c*-small, *b* must be made by the use of a natural (♮), &c.

It is readily perceived, that such a method of forming the signature is not consistent, and that the first method pointed out would be far the best adapted to the nature of the case.—We will not, however, attempt a reformation of that which may remain as it is, and which, considering the iron power of custom, will pretty certainly so remain. And besides, the signature itself is not *an essential affair*, but merely one of convenience; and this latter object can be accomplished by the method already introduced, and especially so since the accidentally depressed seventh occurs almost as frequently as the proper seventh of the scale itself; as e. g. the note *g* in *a*-small occurs accidentally almost as often as the *g*♯ which appropriately belongs to the scale.

We find among the old composers still another signature for small keys. That is to say, they carry the signature only so far as would be required by the large scale of *the under second of the tonic:* thus e. g. a simple flat before *b* in *g*-small, as well as for *F*-large; nothing in *d*-small as well as for *C*-large; a sharp before *f* in *a*-small, as well as for *G*-large.—This mode of forming the signature, it is perceived, is still more improper than the one now in use, since it represents even *two* degrees differently from what they actually are in the scale.—This is a relic of the old so called *Doric* key [or mode,] of which we shall speak more at large hereafter.

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§ 143.

Moreover, every key indeed can be written in every signature. We sometimes, e. g. see whole pieces of music, frequently recitatives and fantasies among the rest, written in transposed keys without any chromatic signature whatever, because the requisite elevation and depression signs are in each instance written individually before the notes concerned. So also on the other hand, any key, say if you please the large key of *C*, might be written with several sharps: it is only requisite in this case to remove the elevation signs of the signature in each instance by prefixing the resolution sign [the natural] to the individual notes.

Again, we do not alter the signature in the middle of a piece of music in every instance in which a short modulation into another key occurs, but rather than write an entirely new signature in every such instance, we separately place before the individual notes those transposition signs which are required by the foreign key. In cases, however, where the entire change of the signature in the middle of a piece is found to be more convenient, we at once make this change. If, e. g. we think of remaining some time in a key which requires a very different signature from the preceding one, we change the signature; for, in this case, it would be very troublesome to write the numerous transposition signs in each instance before the individual notes. In short, we always adopt that mode of marking the signature that we find to be the most convenient.

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§ 144.

Many musical writers are accustomed to call those transposition signs which stand in the signature, *essential*, and those occurring individually in the course of the piece, *accidental*. These appellations, however, are not very appropriate: for, (1.) if a piece modulates, say e. g. from *G*-large to *D*-large, from the moment that this takes place, a sharp before *c* becomes just as essential for the latter key, as the sharp before *f* in the signature. Indeed, (2.) according to the usual mode of constructing the signature in small keys (§ 142,) even the proper seventh tone of the scale must in every instance be separately represented by means of a sharp prefixed to its note; and thus in the small key of *a*, e. g. the $g^{\#}$ which belongs to the scale must be indicated by a sharp prefixed to its note wherever the latter individually occurs. But is the name *accidental* appropriate to the sharp which here occurs before *g*?—And if, (3.) a piece of music is written in a transposed key entirely without a signature, (§ 143,) are the transposition signs which must necessarily occur in the course of the piece, to be likewise called *accidental*?—But, (4.) we shall in the doctrine of transitions become acquainted with another species of accidental transposition signs, which have a far stronger claim to the appellation *accidental;* and accordingly other musical teachers, with greater propriety, call the latter alone accidental. But, at any rate, we prefer not to receive the technical expression *essential* and *accidental* into *our* vocabulary, because it is at least indefinite, and has become, by the various usage of different writers, equivocal.

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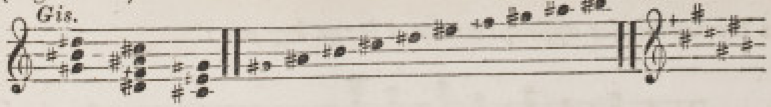
§ 145.

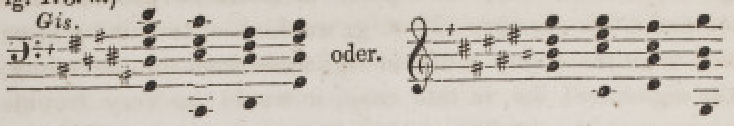
It would be a useful exercise for every one who is not very expert, to write all the possible large and small scales on one or two staves, and that somewhat perhaps in the following manner. First, the three most essential chords of each large key, then the scales, and at last the signature; as e. g. in fig. 173, *i*.

(Fig. 173. *i.*)



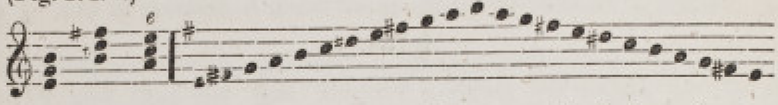
One may also strike the three most essential chords of each large key on a pianoforte, perhaps as in fig. 173, *k*.

(Fig. 173. *k.*)



Let the same course of procedure be adopted in the case of the small scales. Since however the usual signature in these does not correspond with the proper scale (§ 142,) let the three most essential chords be first written, then immediately afterwards the signature in its usual form, and after this the scale; as e. g. in fig. 173, *l.*

(Fig. 173. *l.*)



In playing the small scales, let the course be the same as in the large keys.

DIVISION V.

THE APPROPRIATE HARMONIES OF THE KEY.

(A.) ENUMERATION OF THESE.

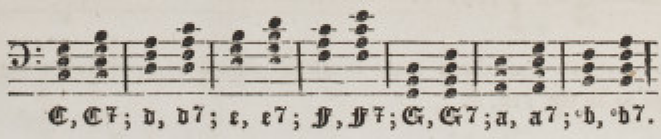
§ 146.

After having become acquainted with the nature of each individual scale, it will be easy to acquire a knowledge of *all* the harmonies appropriate to a key, (whereas we have thus far in § 123 and what follows, attended only to the three most essential of these as the principals and heads of the family, and have left the accessory harmonies appropriate to the key for further consideration.)

All those fundamental harmonies belong appropriately to a key *which can be composed of the tones of its scale.*

§ 147.

Thus *the harmonies appropriate to a large key are:*



(1.) The large tonic three-fold chord on the first degree of the scale, as e. g. the large three-fold harmony ℭ, in the large key of *C;* (§ 123, No. 1.)

(2.) The small three-fold chord on the second degree of the scale, i. e. its fundamental tone is the second degree of the scale, as e. g. the harmony 𝔡 in the large key of *C;*

(3.) The small three-fold chord also on the third degree of the scale, as e. g. the harmony 𝔢 in the large scale of *C;* (as an ordinary principle this harmony occurs but *seldom.*)

(4.) The under-dominant three-fold chord or the large three-fold chord on the fourth degree of the scale, as e. g. the harmony 𝔉 in the large key of *C;* (§ 123, No. 4.)

(5.) The large three-fold chord on the fifth degree, or the dominant three-fold chord, as e. g. the harmony 𝔊 in the large key of *C;* (§ 123, No. 2.)

(6.) The small three-fold chord of the sixth degree, as e. g. the harmony 𝔞 in the large key of *C;*

(7.) The diminished three-fold chord of the seventh degree, as e. g. the harmony °𝔥 in the large key of *C;* (this harmony also occurs but rarely, and moreover the ear usually confounds it with the principal four-fold chord without its fundamental note) (§ 72.)

(8.) The large four-fold chord on the first degree, as e. g, 𝔊^{7} in the large key of *C;*

(9.) The small four-fold chord on the second degree, as e. g. 𝔡^{7} in *C*-large;

(10.) A small four fold chord on the third degree, as e. g. 𝔢^{7} in *C*-large;

(11.) The large four-fold chord on the under-dominant or fourth note of the scale, as e. g. 𝔉 in the large key of *C;*

(12.) The principal four-fold chord on the dominant or fifth degree, (§ 123, No. 3,) as e. g. 𝔊^{7} in *C*-large; (this four-fold chord—the four fold chord on the fifth degree of the *large* scale is the one to which the addition of a *large* ninth (§ 77 and what follows,) is applicable, because the *large* ninth of the fifth degree of the scale occurs in the *large* key, and not the *small* ninth, as e. g. the tone *a* and not *a*♭ in the large key of *C.*)

(13.) The small four-fold chord on the sixth degree, as e. g. 𝔞^{7} in *C*-large;

(14.) The four-fold chord with small fifth on the seventh degree, as e. g. °𝔥^{7} in *C*-large.

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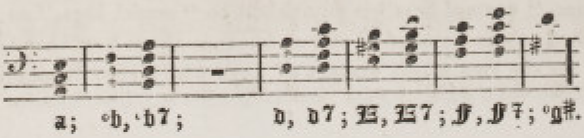
§ 148.

If we inquire in like manner after *the harmonies appropriate to a small key,* we find them as follows:



(1.) The small tonic three-fold chord, as e. g. the harmony $\mathfrak{a}$ in the small key of *a;* (123, No. 1.)

(2.) The diminished three-fold chord on the second degree of the scale, as e. g. $^\circ\mathfrak{h}$ in *a*-small;

(3.) The small three-fold chord of the under-dominant or fourth degree, as e. g. $\mathfrak{d}$ in *a*-small; (§ 123, No. 4.)

(4.) The large three-fold chord of the dominant or fifth degree of the scale, as e. g. $\mathfrak{E}$ in *a*-small; (§ 123, No. 2.)

(5.) The large three-fold chord of the sixth degree, as e. g. $\mathfrak{F}$ in *a*-small;

(6.) The diminished three-fold chord of the seventh, as e. g. $^\circ\mathfrak{g}^\sharp$ in *a*-small;

(7.) The four-fold chord with small fifth on the second degree, as e. g. $^\circ\mathfrak{h}^7$ in *a*-small; (this harmony—the four-fold chord on the second degree of the small scale, is the one that is peculiarized by the elevation of its third.)

(8.) The small four-fold chord on the under-dominant or fourth degree, as e. g. $\mathfrak{d}^7$ in *a*-small;

(9.) The principal four-fold chord on the fifth degree or dominant (§ 123, No. 3,) as e. g. $\mathfrak{E}^7$ in *a*-small; (this principal four-fold chord—the four-fold chord on the fifth degree of the *small* scale is the one to which the addition of a *small* ninth is most directly appropriate, because the *small* and not the *large* ninth of the dominant occurs in the small scale, as e. g. *f*, and not *f*♯, in *a*-small.)

(10.) The large four-fold chord on the sixth tone of the small scale, as e. g. $\mathfrak{F}^7$ in *a*-small.

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§ 149.

The following table affords a general view of the entire family of all the harmonies of the normal keys* of *C*-large and *a*-small which [harmonies] are appropriate to the scale:

(*a.*) We find in *C*,

on the first degree $\mathfrak{C}$ and $\mathfrak{C}^7$,
" second " $\mathfrak{d}$ and $\mathfrak{d}^7$,
" third " $\mathfrak{e}$ and $\mathfrak{e}^7$,
" fourth " $\mathfrak{F}$ and $\mathfrak{F}^7$,
" fifth " $\mathfrak{G}$ and $\mathfrak{G}^7$,
" sixth " $\mathfrak{a}$ and $\mathfrak{a}^7$,
" seventh " $^\circ\mathfrak{h}$ and $^\circ\mathfrak{h}^7$.

---

* The expression "*normal keys*" is equivalent to "*model keys*," or "*pattern keys;*" and is here applied to the keys of *C* and *a*, because these are here taken as specimen or pattern keys for the two whole classes of keys which they respectively represent.
TR.

(*b*.) We find in *a*,

on the first degree, $\mathfrak{a}$,
“ second “ $^{\circ}\mathfrak{h}$ and $^{\circ}\mathfrak{h}^7$,
“ third “ nothing,
“ fourth “ $\mathfrak{d}$ and $\mathfrak{d}^7$,
“ fifth “ $\mathfrak{E}$ and $\mathfrak{E}^7$,
“ sixth “ $\mathfrak{F}$ and $\mathfrak{F}^7$,
“ seventh $^{\circ}\mathfrak{g}^{\sharp}$.

Or:

	on the first deg.	on the second deg.	on the third deg.	on the fourth deg.	on the fifth deg.	on the sixth deg.	on the sev’nth deg.
In *C:*	$\mathfrak{C}$ and $\mathfrak{C}^7$;	$\mathfrak{d}$ and $\mathfrak{d}^7$;	$\mathfrak{e}$ and $\mathfrak{e}^7$;	$\mathfrak{F}$ and $\mathfrak{F}^7$;	$\mathfrak{G}$ and $\mathfrak{G}^7$;	$\mathfrak{a}$ and $\mathfrak{a}^7$;	$^{\circ}\mathfrak{h}$ and $^{\circ}\mathfrak{h}$.
In *a:*	$\mathfrak{a}$;	$^{\circ}\mathfrak{h}$ and $^{\circ}\mathfrak{h}^7$;		$\mathfrak{d}$ and $\mathfrak{d}^7$;	$\mathfrak{E}$ and $\mathfrak{E}^7$;	$\mathfrak{F}$ and $\mathfrak{F}^7$;	$^{\circ}\mathfrak{g}^{\sharp}$.

Beginners may construct similar tables on all the transposed large and small keys; e. g.:

In *G*-large,

on the first degree $\mathfrak{G}$ and $\mathfrak{G}^7$,
“ second “ $\mathfrak{a}$ and $\mathfrak{a}^7$,
&c.

In *e*-small,

on the first degree $\mathfrak{e}$,
“ second “ $^{\circ}\mathfrak{f}^{\sharp}$ and $^{\circ}\mathfrak{f}^{\sharp 7}$,
&c.

In *F*-large,

on the first degree $\mathfrak{F}$ and $\mathfrak{F}^7$,
“ second “ $\mathfrak{g}$ and $\mathfrak{g}^7$,
&c.

---

§ 150.

The small key, it is perceived, is considerably more meager in harmonies, than the large key. The latter has seven harmonies that are appropriate to the scale, each of which consequently has one of the seven notes of the scale for its fundamental tone; but a three fold chord whose fundamental tone should be the third tone of the *small* scale, would be a monstrosity. In the small key of *a*, e. g. it would consist of the tones [c e g♯]; but this would be a three-fold chord with a superfluous fifth, and such a fundamental harmony does not exist, (§ 50.) Hence it comes to pass that the small key has one three-fold chord less than the large key.

The large key has, moreover, *seven* four fold chords, one each on all the seven degrees of the scale; but in the *small* key there are three degrees of the scale which admit *no* four-fold chords appropriate to the scale as fundamental harmonies: not on the first degree, namely, because this would be a fundamental chord with a small third, large fifth and large seventh, as

e. g. [A c e g#,] and such a chord does not exist, (§ 50;) not on the third, as e. g. [c e g# b,] for there is no fundamental chord with a superfluous fifth;—not on the seventh, because that would necessarily be a four-fold chord with a diminished seventh, as e. g. [G# B d f,] and such a fundamental harmony does not exist, (§ 50.) Such combinations of tones as the following, do indeed sometimes occur, [G# B d f], (§ 83), [A c e g], [c e g#], and [c e g# b]: none of these however is a fundamental harmony, but all of them are mere transformations of fundamental harmonies. If, on the other hand, the harmonies [A c e g], [c e g], [c e g b], and [G B d f] occur in passages in the small key of *a*, still these are not appropriate to the scale, but are modulations. (Remark on § 131.)

(B.) MODE OF DESIGNATING THE SITUATION OF HARMONIES.

§ 151.

We will hereafter make use of a method of designating all the various harmonies of a key that is still more general than the one adopted in § 149 and is not like that limited to a particular key, but is applicable to *every* key; that is to say, instead of employing the German letters [Eng. black letters,] we will use the Roman numerals to denote the degrees of the scale on which chords have their fundamental tones; and in the place of the *large* letters, we will use *large* numerals, while in the place of the small letters we will use *small* numerals, and we will mark these numerals with the characters ^{7}, $^{\cancel{7}}$, and °, just as we did the German letters.

In this case a *large* Roman numeral denotes a large three-fold chord on *that* degree of the scale which this numeral indicates, as e. g. the large Roman numeral I denotes the large three-fold chord on the first degree of the scale, namely the degree on which the tonic or key-note is situated,—V denotes the large three-fold chord on the dominant or fifth degree.—A *small* Roman numeral, on the contrary, denotes a *small* three-fold chord, as e. g. ii denotes the small three-fold chord on the second degree; a small numeral with the character (°) prefixed to it denotes a diminished three-fold chord, as e. g. °vii denotes the diminished three-fold chord of the seventh degree; a *large* Roman numeral with a figure (^{7}) denotes the principal four-fold chord, and thus V^7 denotes the principal four-fold chord on the fifth degree; a *small* Roman numeral with a (^{7}) denotes a small four-fold chord (with a small third and large fifth,) as e. g. ii^7 denotes the small four-fold chord on the second degree; a *small* Roman numeral with the character (°) and the figure (^{7}) denotes the four-fold chord with small fifth, as e. g. $°\text{vii}^7$ denotes the four-fold chord with small fifth on the seventh degree of the scale or on the so called subsemitone of the key,—and finally a *large* Roman numeral with a figure (^{7}) that has a stroke through it ($^{\cancel{7}}$)

denotes the harmony of the large four-fold chord, as e. g. $\mathrm{IV}^{\bar{7}}$ denotes the large four-fold chord of the fourth degree of the scale.

We can in this way represent *all the harmonies appropriate to each key*, by the following form or structure of figures:

Fundamental harmonies of each large key.

I and $\mathrm{I}^{\bar{7}}$,
ii " ii^{7},
iii " $\mathrm{iii}^{\bar{7}}$,
IV " $\mathrm{IV}^{\bar{7}}$,
V " V^{7},
vi " vi^{7},
$^{\circ}\mathrm{vii}$ " $^{\circ}\mathrm{vii}^{7}$.

Fundamental harmonies of each small key.

i
$^{\circ}\mathrm{ii}$ and $^{\circ}\mathrm{ii}^{7}$,
iv " iv^{7},
V " V^{7},
VI " $\mathrm{VI}^{\bar{7}}$,
vii.

Or:

	on the first deg.	on the sec'd deg.	on the third deg.	on the fourth deg.	on the fifth deg,	on the sixth deg.	on the seventh deg.
In large key:	$\mathrm{I}, \mathrm{I}^{\bar{7}}$;	$\mathrm{ii}, \mathrm{ii}^{7}$;	$\mathrm{iii}, \mathrm{iii}^{7}$;	$\mathrm{IV}, \mathrm{IV}^{\bar{7}}$;	$\mathrm{V}, \mathrm{V}^{7}$;	$\mathrm{vi}, \mathrm{vi}^{7}$;	$^{\circ}\mathrm{vii}, {}^{\circ}\mathrm{vii}^{7}$.
In small key:	i;	$^{\circ}\mathrm{ii}, {}^{\circ}\mathrm{ii}^{7}$;		$\mathrm{iv}, \mathrm{iv}^{7}$;	$\mathrm{V}, \mathrm{V}^{7}$;	$\mathrm{VI}, \mathrm{VI}^{\bar{7}}$;	$^{\circ}\mathrm{vii}$.

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§ 152.

This mode of designating the fundamental harmonies by large and small Roman numerals with (°) and (^{7}) or ($^{\bar{7}}$), exactly coincides, it is perceived, with our previous mode of designation by large and small German letters [Eng. black letters] with the characters (°) and (^{7}) or ($^{\bar{7}}$); though each has its peculiarities and each its peculiar advantages.

The designation by German letters [Eng. black letters] denotes specifically only this or that harmony on *one particular note*, but leaves it undetermined on what degree of what scale the chord stands. Thus e. g. $\mathfrak{F}^{\bar{7}}$ definitely denotes the large four-fold chord of F, but without regard to any particular degree of any particular scale to which this $\mathfrak{F}^{\bar{7}}$ belongs,—whether it is $\mathfrak{F}^{\bar{7}}$ as a four-fold chord of the first degree of *F*-large, or on the fourth degree of *C*-large, or on the sixth degree of *a*-small, &c. A large *Roman numeral* with ($^{\bar{7}}$) on the contrary, points out definitely the large four-fold chord on a determinate degree of some scale, but leaves it undetermined, in *what key* and thus on *what note.* The sign $\mathrm{IV}^{\bar{7}}$, e. g. denotes with perfect definiteness a large four-fold chord on the fourth degree of any (large) key whatever, but without determining whether it is $\mathrm{IV}^{\bar{7}}$ of

C-large and thus $\mathfrak{F}^7$, or IV^7 of *G*-large, thus $\mathfrak{C}^7$, or of *F*, thus $\mathfrak{B}^{\flat 7}$, or of *A*, thus $\mathfrak{D}^7$, &c.

Thus the designation by German letters [Eng. black letters] is in one respect *more definite*, but for that very reason is also more *limited;* and in *another* respect is *more general*, but for that reason is also *more indefinite.* The designation by Roman numerals, on the other hand, is *more limited* in the *first* respect and therefore more *definite* and *discriminating*, but is, on the contrary, *less definite* in *another* respect and therefore more *general* and *comprehensive.*

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§ 153.

We can, however, *unite the advantages of both modes of designation*, by prefixing a large or small Italic letter to the Roman numeral, as an index of the key (§ 121,) by which means every thing becomes perfectly definite. Thus e. g the designation *C*:IV^7 would carry the following definite meaning: the large four-fold chord on the fourth degree of the large scale of *C*, consequently the harmony $\mathfrak{F}^7$ as IV^7 of *C*-large. So also the following signs

C:I, V^7, vi, *G*:V^7, *e*:V^7, i, °ii, V, &c.

would mean: the large three-fold chord on the first degree of the large key of *C*, thus $\mathfrak{C}$ as I of *C*-large; then the principal four-fold chord on the fifth degree of the same key, thus $\mathfrak{G}^7$ as V^7 of *C*-large; the small three-fold chord $\mathfrak{a}$ on the sixth degree of the same key; the principal four-fold chord on the fifth degree of *G*-large, thus $\mathfrak{D}^7$ as V^7 of *G;* the principal four-fold chord $\mathfrak{B}^7$ on the fifth degree of the small key of *e*-small; the harmony $\mathfrak{e}$ as a tonic harmony; the diminished three-fold chord $^{\circ}\mathfrak{f}^{\sharp}$ on the second degree of *e*-small; the large three-fold chord on the fifth degree of the same key, thus $\mathfrak{B}$ as V of *e;* &c.

We shall find in the sequel, what clearness and facility this mode of designation will afford us; therefore let not the reader grudge the little pains that it will cost him to become familiar with it.

If, moreover, we would here apply the mode of generalization pointed out in the end of §§ 52 and 121, we might represent the harmony of the first degree of any large key whatever, by the designation X: I, which would accordingly mean either *C:* I or *C*♯*:* I, or *D:* I, &c.,—and we might represent the four-fold harmony of the second degree of any small key by the sign x: °ii^7, which would accordingly mean either *c:* °ii^7, or *c*♯*:* °ii^7, or *d:* °ii^7; &c.,—and farther, we might represent each of the large three-fold harmonies occurring in *C*-large by *C:* X, thus either *C:* I, or *C:* IV, or *C:* V; and we might indicate each of the small four-fold chords occurring in *C*-large by *C:* x^7, thus either *C:* ii^7, or *C:* iii^7, or *C:* vi^7, &c.

(C.) GENERAL VIEW OF THE APPROPRIATE HARMONIES OF EACH KEY.

§ 154.

The following table exhibits the fundamental harmonies belonging to each one of all the different keys that occur. The table is to be read in the following manner:

We find in *C*-large, 𝕮 and 𝕮^7 on the first degree, 𝖉 and 𝖉^7 on the second degree, &c. We find in the large key of *C*♭, 𝕮♭ and 𝕮♭^{7} on the first degree, &c.

(D.) EQUIVOCALNESS OF SITUATION.

§ 155.

It is perceived from what precedes, that (1.) not only more than one fundamental harmony may have its seat on one and the same degree of a key, but that (2.) one and the same species of fundamental harmony may occur on more than one degree of a key, and indeed may belong at one time to one key and at another time to another. This is a second principal species of equivocalness, which we will denominate *equivocalness of situation.*

A TABLE OF ALL THE APPROPRIATE HARMONIES OF EACH KEY THAT OCCURS.

		On the First degree.	On the Second degree.	On the Third degree.
In the Large Keys.	In C	$\mathfrak{C}$ and $\mathfrak{C}^7$	$\mathfrak{d}$ and $\mathfrak{d}^7$	$\mathfrak{e}$ and $\mathfrak{e}^7$
	$C\flat$	$\mathfrak{C}\flat$ “ $\mathfrak{C}\flat^7$	$\mathfrak{d}\flat$ “ $\mathfrak{d}\flat^7$	$\mathfrak{e}\flat$ “ $\mathfrak{e}\flat^7$
	B	$\mathfrak{B}$ “ $\mathfrak{B}^7$	$\mathfrak{c}\sharp$ “ $\mathfrak{c}\sharp^7$	$\mathfrak{d}\sharp$ “ $\mathfrak{d}\sharp^7$
	$B\flat$	$\mathfrak{B}\flat$ “ $\mathfrak{B}\flat^7$	$\mathfrak{c}$ “ $\mathfrak{c}^7$	$\mathfrak{d}$ “ $\mathfrak{d}^7$
	A	$\mathfrak{A}$ “ $\mathfrak{A}^7$	$\mathfrak{b}$ “ $\mathfrak{b}^7$	$\mathfrak{c}\sharp$ “ $\mathfrak{c}\sharp^7$
	$A\flat$	$\mathfrak{A}\flat$ “ $\mathfrak{A}\flat^7$	$\mathfrak{b}\flat$ “ $\mathfrak{b}\flat^7$	$\mathfrak{c}$ “ $\mathfrak{c}^7$
	$G\sharp$	$\mathfrak{G}\sharp$ “ $\mathfrak{G}\sharp^7$	$\mathfrak{a}\sharp$ “ $\mathfrak{a}\sharp^7$	$\mathfrak{b}\sharp$ “ $\mathfrak{b}\sharp^7$
	G	$\mathfrak{G}$ “ $\mathfrak{G}^7$	$\mathfrak{a}$ “ $\mathfrak{a}^7$	$\mathfrak{b}$ “ $\mathfrak{b}^7$
	$G\flat$	$\mathfrak{G}\flat$ “ $\mathfrak{G}\flat^7$	$\mathfrak{a}\flat$ “ $\mathfrak{a}\flat^7$	$\mathfrak{b}\flat$ “ $\mathfrak{b}\flat^7$
	$F\sharp$	$\mathfrak{F}\sharp$ “ $\mathfrak{F}\sharp^7$	$\mathfrak{g}\sharp$ “ $\mathfrak{g}\sharp^7$	$\mathfrak{a}\sharp$ “ $\mathfrak{a}\sharp^7$
	F	$\mathfrak{F}$ “ $\mathfrak{F}^7$	$\mathfrak{g}$ “ $\mathfrak{g}^7$	$\mathfrak{a}$ “ $\mathfrak{a}^7$
	$F\flat$	$\mathfrak{F}\flat$ “ $\mathfrak{F}\flat^7$	$\mathfrak{g}\flat$ “ $\mathfrak{g}\flat^7$	$\mathfrak{a}\flat$ “ $\mathfrak{a}\flat^7$
	E	$\mathfrak{E}$ “ $\mathfrak{E}^7$	$\mathfrak{f}\sharp$ “ $\mathfrak{f}\sharp^7$	$\mathfrak{g}\sharp$ “ $\mathfrak{g}\sharp^7$
	$E\flat$	$\mathfrak{E}\flat$ “ $\mathfrak{E}\flat^7$	$\mathfrak{f}$ “ $\mathfrak{f}^7$	$\mathfrak{g}$ “ $\mathfrak{g}^7$
	D	$\mathfrak{D}$ “ $\mathfrak{D}^7$	$\mathfrak{e}$ “ $\mathfrak{e}^7$	$\mathfrak{f}\sharp$ “ $\mathfrak{f}\sharp^7$
	$D\flat$	$\mathfrak{D}\flat$ “ $\mathfrak{D}\flat^7$	$\mathfrak{e}\flat$ “ $\mathfrak{e}\flat^7$	$\mathfrak{f}$ “ $\mathfrak{f}^7$
	$C\sharp$	$\mathfrak{C}\sharp$ “ $\mathfrak{C}\sharp^7$	$\mathfrak{d}\sharp$ “ $\mathfrak{d}\sharp^7$	$\mathfrak{e}\sharp$ “ $\mathfrak{e}\sharp^7$
	as	I “ I^7	II “ II^7	III “ III^7
In the Small Keys.	In c	$\mathfrak{c}$ “ —	$^\circ\mathfrak{d}$ “ $^\circ\mathfrak{d}^7$	— “ —
	b	$\mathfrak{b}$ “ —	$^\circ\mathfrak{c}\sharp$ “ $^\circ\mathfrak{c}\sharp^7$	— “ —
	$b\flat$	$\mathfrak{b}\flat$ “ —	$^\circ\mathfrak{c}$ “ $^\circ\mathfrak{c}^7$	— “ —
	$a\sharp$	$\mathfrak{a}\sharp$ “ —	$^\circ\mathfrak{b}\sharp$ “ $^\circ\mathfrak{b}\sharp^7$	— “ —
	a	$\mathfrak{a}$ “ —	$^\circ\mathfrak{b}$ “ $^\circ\mathfrak{b}^7$	— “ —
	$a\flat$	$\mathfrak{a}\flat$ “ —	$^\circ\mathfrak{b}\flat$ “ $^\circ\mathfrak{b}\flat^7$	— “ —
	$g\sharp$	$\mathfrak{g}\sharp$ “ —	$^\circ\mathfrak{a}\sharp$ “ $^\circ\mathfrak{a}\sharp^7$	— “ —
	g	$\mathfrak{g}$ “ —	$^\circ\mathfrak{a}$ “ $^\circ\mathfrak{a}^7$	— “ —
	$f\sharp$	$\mathfrak{f}\sharp$ “ —	$^\circ\mathfrak{g}\sharp$ “ $^\circ\mathfrak{g}\sharp^7$	— “ —
	f	$\mathfrak{f}$ “ —	$^\circ\mathfrak{g}$ “ $^\circ\mathfrak{g}^7$	— “ —
	e	$\mathfrak{e}$ “ —	$^\circ\mathfrak{f}\sharp$ “ $^\circ\mathfrak{f}\sharp^7$	— “ —
	$e\flat$	$\mathfrak{e}\flat$ “ —	$^\circ\mathfrak{f}$ “ $^\circ\mathfrak{f}^7$	— “ —
	$d\sharp$	$\mathfrak{d}\sharp$ “ —	$^\circ\mathfrak{e}\sharp$ “ $^\circ\mathfrak{e}\sharp^7$	— “ —
	d	$\mathfrak{d}$ “ —	$^\circ\mathfrak{e}$ “ $^\circ\mathfrak{e}^7$	— “ —
	$c\sharp$	$\mathfrak{c}\sharp$ “ —	$^\circ\mathfrak{d}\sharp$ “ $^\circ\mathfrak{d}\sharp^7$	— “ —
	as	I “ —	$^\circ\mathrm{II}$ “ $^\circ\mathrm{II}^7$	— “ —

A TABLE OF ALL THE APPROPRIATE HARMONIES OF EACH KEY THAT OCCURS.

Continued.

On the Fourth degree.	On the Fifth degree.	On the Sixth degree.	On the Seventh Degree.
F and F$^{\not 7}$	G and G^7	a and a^7	°b and °b^7
F♭ “ F♭$^{\not 7}$	G♭ “ G♭^{7}	a♭ “ a♭^{7}	°b♭ “ °b♭^{7}
E “ E$^{\not 7}$	F♯ “ F♯^{7}	g♯ “ g♯^{7}	°a♯ “ °a♯^{7}
E♭ “ E♭$^{\not 7}$	F “ F^7	g “ g^7	°a “ °a^7
D “ D$^{\not 7}$	E “ E^7	f♯ “ f♯^{7}	°g♯ “ °g♯^{7}
D♭ “ D♭$^{\not 7}$	E♭ “ E♭^{7}	f “ f^7	°g “ °g^7
C♯ “ C♯$^{\not 7}$	D♯ “ D♯^{7}	e♯ “ e♯^{7}	°f× “ °f×^{7}
C “ C$^{\not 7}$	D “ D^7	e “ e^7	°f♯ “ °f♯^{7}
C♭ “ C♭$^{\not 7}$	D♭ “ D♭^{7}	e♭ “ e♭^{7}	°f “ °f^7
B “ B$^{\not 7}$	C♯ “ C♯^{7}	d♯ “ d♯^{7}	°e♯ “ °e♯^{7}
B♭ “ B♭$^{\not 7}$	C “ C^7	d “ d^7	°e “ °e^7
B♭♭ “ B♭♭$^{\not 7}$	C♭ “ C♭^{7}	d♭ “ d♭^{7}	°e♭ “ °e♭^{7}
A “ A$^{\not 7}$	B “ B^7	c♯ “ c♯^{7}	°d♯ “ °d♯^{7}
A♭ “ A♭$^{\not 7}$	B♭ “ B♭^{7}	c “ c^7	°d “ °d^7
G “ G$^{\not 7}$	A “ A^7	b “ b^7	°c♯ “ °c♯^{7}
G♭ “ G♭$^{\not 7}$	A♭ “ A♭^{7}	b♭ “ b♭^{7}	°c “ °c^7
F♯ “ F♯$^{\not 7}$	G♯ “ G♯^{7}	a♯ “ a♯^{7}	°b♯ “ °b♯^{7}
IV “ IV$^{\not 7}$	V “ V^7	vi “ vi^7	°vii “ °vii^7
f “ f^7	G “ G^7	A♭ “ A♭$^{\not 7}$	°b “ —
e “ e^7	F♯ “ F♯^{7}	G “ G$^{\not 7}$	°a♯ “ —
e♭ “ e♭^{7}	F “ F^7	G♭ “ G♭$^{\not 7}$	°a “ —
d♯ “ d♯^{7}	E♯ “ E♯^{7}	F♯ “ F♯^{7}	°g× “ —
d “ d^7	E “ E^7	F “ F$^{\not 7}$	°g♯ “ —
d♭ “ d♭^{7}	E♭ “ E♭^{7}	F♭ “ F♭^{7}	°g “ —
c♯ “ c♯^{7}	D♯ “ D♯^{7}	E “ E$^{\not 7}$	°f× “ —
c “ c^7	D “ D^7	E♭ “ E♭$^{\not 7}$	°f♯ “ —
b “ b^7	C♯ “ C♯^{7}	D “ D$^{\not 7}$	°e♯ “ —
b♭ “ b♭^{7}	C “ C^7	D♭ “ D♭$^{\not 7}$	°e “ —
a “ a^7	B “ B^7	C “ C$^{\not 7}$	°d♯ “ —
a♭ “ a♭^{7}	B♭ “ B♭^{7}	C♭ “ C♭$^{\not 7}$	°d “ —
g♯ “ g♯^{7}	A♯ “ A♯^{7}	B “ B$^{\not 7}$	°c× “ —
g “ g^7	A “ A^7	B♭ “ B♭$^{\not 7}$	°c♯ “ —
f♯ “ f♯^{7}	G♯ “ G♯^{7}	A “ A$^{\not 7}$	°b♯ “ —
iv “ iv^7	V “ V^7	VI “ VI$^{\not 7}$	°vii “ —

(1.)

This equivocalness may take place (see the foregoing table, also the note figures of §§ 147 and 148)

(*a.*) *In a large key.*

The large three-fold tonic chord and the large four-fold chord may occur *on the first degree* (*on the tonic note.*) Thus e. g. 𝕮 and 𝕮^7 in *C*-large; 𝕲 and 𝕲^7 in *G*-large; 𝕰♭ and 𝕰♭^{7} in *E*♭, &c.

The small three-fold and a small four-fold chord may occur *on the second degree*, as e. g. 𝖉 and 𝖉^7 in *C*-large; 𝖌 and 𝖌^7 in *F*-large; 𝖈 and 𝖈^7 in *B*♭-large.

So also a small three-fold chord and a small four-fold chord may occur *on the third degree*, as e. g. 𝖊 and 𝖊^7 in *C*-large; 𝖋♯ and 𝖋♯^{7} in *D*.

A large three-fold chord and a large four-fold chord may occur *on the fourth degree*, as e. g. 𝕱 and 𝕱^7 in *C;* 𝕭♭ and 𝕭♭^{7} in *F;*

A large three-fold chord and the principal four-fold chord may occur *on the fifth degree*, as e. g. 𝕲 and 𝕲^7 in *C;* 𝕯 and 𝕯^7 in *G;*

A small three-fold chord and a small four-fold chord may occur *on the sixth degree*, as e. g. 𝖆 and 𝖆^7 in *C*-large; 𝖊 and 𝖊^7 in *G;*

A diminished three-fold chord and the four-fold chord with small fifth may occur *on the seventh degree*, as e. g. °𝖇 and °𝖇^7 in *C*-large; °𝖆 and °𝖆^7 in *B*♭.

This equivocalness may, again, take place

(b.) *In the small key.*

A small three-fold chord may occur *on the first degree*, as e. g. 𝖆 in *a*-small; no four-fold chord occurs on this degree, (§ 149;)

A diminished three-fold chord and the four fold chord with small fifth may occur *on the second degree*, as e. g. °𝖇 and °𝖇^7 in *a*-small;

Nothing occurs *on the third degree*, (§ 149;)

A small three-fold chord and a small four fold chord may occur *on the fourth degree*, as e. g. 𝖉 and 𝖉^7 in *a*-small; 𝖋 and 𝖋^7 in *c*-small;

A large three-fold chord and the principal four-fold chord may occur *on the fifth degree*, as e. g. 𝕰 and 𝕰^7 in *a*-small;

A large three-fold chord and a large four-fold chord may occur *on the sixth degree*, as e. g. the large three-fold chord 𝕱 and the large four-fold chord 𝕱^7 in *a*-small; 𝕲 and 𝕲^7 in *b*-large;

A diminished three-fold chord may occur *on the seventh degree*, as e. g. °𝖌♯ in *a*-small, but no four-fold chord occurs on this degree, (§ 149.)

(2.)

We have thus far seen how more than one harmony may be situated on one and the same degree of one and the same key. We will now, moreover, see how one and the same fundamental harmony may occur at one time on one and at another time on another degree of this or that key.

Large three-fold chords, as we have seen, may occur on the first, fourth, or fifth degrees of a large key, and on the fifth and sixth degrees of a small key; or, in other words, a large three-fold chord may occur as I, as IV or as V in a large key, and as V or VI in a small key; take, for example, the harmony 𝕲: it may occur as the tonic harmony of *G*-large, as the dominant harmony of *C* large or of *c*-small, or as the under dominant harmony of *D*, and also as the three-fold harmony of the sixth degree in *b*, &c. In like manner, *a small three-fold chord* may occur at one time as ii, or iii, or vi, in a large key,—and at another time as i or iv in a small key, &c.; and so it is with every harmony. Hence every harmony is equivocal, so far as that we can at one time apply one Roman numeral to it and at another time another, and consequently can regard it as belonging to more than one key.

The following tables show, in one general view, on what degrees of what key each harmony occurs, and what harmonies occur in each key.

They are to be read as follows:

(Table *a.*) The large three fold chord 𝕮 occurs in five different keys, namely: as a tonic harmony of the Ist degree in *C* large, as a three fold chord of the IVth degree in *G*-large, as the harmony of the Vth degree, or the dominant three-fold chord in *F*-large, then likewise as the dominant three-fold chord V in *f*-small, and as a three fold chord of the VIth degree in *e*-small.—The harmony 𝕯 or 𝕮 appears as IV in *A*♭ or *G*♯, as V in *G*♭ or *F*♯, as I in *D* or *C*♯, as V in *f*♯ small, as VI in *f*-small.—𝕯 is either *A*: IV, or *G*: V, or *D*: I, *g*: V or *f*♯: VI.—And again, we find three large three-fold chords in the large key of *C*, to wit: 𝕮 on the Ist degree, 𝕱 on the IVth degree, and 𝕲 on the Vth degree.—We find in *C*♭ large or *B*-large, 𝕱♭ or 𝕰 on the IVth degree, 𝕲♭ or 𝕱♯ on the Vth degree, 𝕮♭ or 𝕭 on the Ist degree.—We find in *b* small two large three-fold chords, namely 𝕱♯ on the Vth degree and 𝕲 on the VIth degree;—&c.

(Table *b.*) The small three fold chord 𝖊 or 𝖉♯ occurs as ii in *F*♭large, as iii in *A*♭-large or *G*♯-large, &c.—And again, three small three-fold chords are found in *C* large, to wit: 𝖉 on the iid degree, 𝖊 on the iiid degree, and 𝖆 on the vith degree:—in *C*♭-large or *B*-large, we find 𝖉♭ or 𝖈♯ on the iid degree, 𝖊♭ or 𝖉♯ on the iiid degree, and 𝖆♭ or 𝖌♯ on the vith degree;—&c.

For the purpose of rendering these different relations familiar, one may propose to himself, *as an exercise*, questions to be answered like the following:

On what degrees of the large or the small scales are *large three-fold chords* found? Ans. On the first, fourth and fifth degrees of large keys, and on the fifth and sixth degrees of small keys; the large three fold chord 𝕮 e. g. occurs on the first degree in *C*-large, on the fourth degree in *G*-large, on the fifth degree in *F*-large—on the . . . . . in *f*-small, &c.—The large three-fold chord 𝕮♯ is found . . . . &c.—The large three-fold chord 𝕯♭ is found . . . . &c.—&c.

On what degrees of large or small keys may *small three-fold chords* be situated? Ans. On the second, third, and sixth degrees of large keys, and on the first and fourth of small keys; the small three-fold chord 𝖈 e. g. occurs on the second degree of *B*♭-large, on the third of *A*♭, on the . . . . &c.—The small three-fold chord 𝕮♯ is found on the . . . . &c.

On what degree of large and small scales are *diminished three-fold chords* found? &c. . . . . &c. . . . . &c.

TABLE (*a*).

SITUATION OF LARGE THREE-FOLD CHORDS.

			D^b		E^b	F^b	F	G^b		A^b	B^{bb}	B^b	C^b.
		C,	C#,	D,	D#,	E,	E#,	F#,	G,	G#,	A,	A#,	B.
In the Large Keys.	*C* :	I.	.	.	.	.	IV.	.	V.	.	.	.	.
	C^b, B :	.	.	.	.	IV.	.	V.	.	.	.	.	I.
	B^b :	.	.	.	IV.	.	V.	.	.	.	.	I.	.
	A :	.	.	IV.	.	V.	.	.	.	.	I.	.	.
	A^b, G# :	.	IV.	.	V.	.	.	.	.	I.	.	.	.
	G :	IV.	.	V.	.	.	.	.	I.	.	.	.	.
	G^b, F# :	.	V.	.	.	.	.	I.	.	.	.	.	IV.
	F :	V.	.	.	.	.	I.	.	.	.	.	IV.	.
	F^b, E :	.	.	.	.	I.	.	.	.	.	IV.	.	V.
	E^b :	.	.	.	I.	.	.	.	.	IV.	.	V.	.
	D :	.	.	I.	.	.	.	.	IV.	.	V.	.	.
	D^b, C# :	.	I.	.	.	.	.	IV.	.	V.	.	.	.
In the Small Keys.	*c* :	.	.	.	.	.	.	.	V.	VI.	.	.	.
	b :	.	.	.	.	.	.	V.	VI.	.	.	.	.
	b^b, a# :	.	.	.	.	.	V.	VI.	.	.	.	.	.
	a :	.	.	.	.	V.	VI.	.	.	.	.	.	.
	a^b, g# :	.	.	.	V.	VI.	.	.	.	.	.	.	.
	g :	.	.	V.	VI.	.	.	.	.	.	.	.	.
	f# :	.	V.	VI.	.	.	.	.	.	.	.	.	.
	f :	V.	VI.	.	.	.	.	.	.	.	.	.	.
	e :	VI.	.	.	.	.	.	.	.	.	.	.	V.
	e^b, d# :	.	.	.	.	.	.	.	.	.	.	V.	VI.
	d :	.	.	.	.	.	.	.	.	.	V.	VI.	.
	c# :	.	.	.	.	.	.	.	.	V.	VI.	.	.

TABLE (*b*).

SITUATION OF SMALL THREE-FOLD CHORDS.

		𝔠	𝔡♭		𝔢♭		𝔣	𝔤♭		𝔞♭		𝔟♭	
		𝔟♯,	𝔠♯,	𝔡,	𝔡♯,	𝔢,	𝔢♯,	𝔣♯,	𝔤,	𝔤♯,	𝔞,	𝔞♯,	𝔟.
In the Large Keys.	*C* :	.	.	II	.	III	.	.	.	.	VI	.	.
	C♭, *B* :	.	II	.	III	.	.	.	.	VI	.	.	.
	B♭ :	II	.	III	.	.	.	.	VI	.	.	.	.
	A :	.	III	.	.	.	.	VI	.	.	.	.	II
	A♭, *G*♯ :	III	.	.	.	.	VI	.	.	.	.	II	.
	G :	.	.	.	.	VI	.	.	.	.	II	.	III
	G♭, *F*♯ :	.	.	.	VI	.	.	.	.	II	.	III	.
	F :	.	.	VI	.	.	.	.	II	.	III	.	.
	F♭, *E* :	.	VI	.	.	.	.	II	.	III	.	.	.
	E♭ :	VI	.	.	.	.	II	.	III	.	.	.	.
	D :	.	.	.	.	II	.	III	.	.	.	.	VI
	D♭, *C*♯ :	.	.	.	II	.	III	.	.	.	.	VI	.
In the Small Keys.	*c* :	I	.	.	.	.	IV	.	.	.	.	.	.
	b :	.	.	.	.	IV	.	.	.	.	.	.	I
	b♭, *a*♯ :	.	.	.	IV	.	.	.	.	.	.	I	.
	a :	.	.	IV	.	.	.	.	.	.	I	.	.
	a♭, *g*♯ :	.	IV	.	.	.	.	.	.	I	.	.	.
	g :	IV	.	.	.	.	.	.	I	.	.	.	.
	f♯ :	.	.	.	.	.	.	I	.	.	.	.	IV
	f :	.	.	.	.	.	I	.	.	.	.	IV	.
	e :	.	.	.	.	I	.	.	.	.	IV	.	.
	e♭, *d*♯ :	.	.	.	I	.	.	.	.	IV	.	.	.
	d :	.	.	I	.	.	.	.	IV	.	.	.	.
	c♯ :	.	I	.	.	.	.	IV	.	.	.	.	.

TABLE (*c*).

SITUATION OF DIMINISHED THREE-FOLD CHORDS.

		°c °b♯	°c♯	°d °c×	°e♭ °d♯	°e	°f °e♯	°f♯	°g °f×	°g♯	°a °g×	°b♭ °a♯	°b
In the Large Keys.	*C*	.	.	.	.	.	.	.	.	.	.	.	°VII
	C♭, *B*	.	.	.	.	.	.	.	.	.	.	°VII	.
	B♭	.	.	.	.	.	.	.	.	.	°VII	.	.
	A	.	.	.	.	.	.	.	.	°VII	.	.	.
	A♭, *G*♯	.	.	.	.	.	.	.	°VII	.	.	.	.
	G	.	.	.	.	.	.	°VII	.	.	.	.	.
	G♭, *F*♯	.	.	.	.	.	°VII	.	.	.	.	.	.
	F	.	.	.	.	°VII	.	.	.	.	.	.	.
	F♭, *E*	.	.	.	°VII	.	.	.	.	.	.	.	.
	E♭	.	.	°VII	.	.	.	.	.	.	.	.	.
	D	.	°VII	.	.	.	.	.	.	.	.	.	.
	D♭, *C*♯	°VII	.	.	.	.	.	.	.	.	.	.	.
In the Small Keys.	*c*	.	.	°II	.	.	.	.	.	.	.	.	°VII
	b	.	°II	.	.	.	.	.	.	.	.	°VII	.
	b♭, *a*♯	°II	.	.	.	.	.	.	.	.	°VII	.	.
	a	.	.	.	.	.	.	.	.	°VII	.	.	°II
	a♭, *g*♯	.	.	.	.	.	.	.	°VII	.	.	°II	.
	g	.	.	.	.	.	.	°VII	.	.	°II	.	.
	f♯	.	.	.	.	.	°VII	.	.	°II	.	.	.
	f	.	.	.	.	°VII	.	.	°II	.	.	.	.
	e	.	.	.	°VII	.	.	°II	.	.	.	.	.
	e♭, *d*♯	.	.	°VII	.	.	°II	.	.	.	.	.	.
	d	.	°VII	.	.	°II	.	.	.	.	.	.	.
	c♯	°VII	.	.	°II	.	.	.	.	.	.	.	.

TABLE *(d.)*

SITUATION OF THE PRINCIPAL FOUR-FOLD CHORDS.

		$\mathfrak{C}^{7}$	$\mathfrak{D}^{\flat 7}$ $\mathfrak{C}^{\sharp 7}$	$\mathfrak{D}^{7}$	$\mathfrak{E}^{\flat 7}$ $\mathfrak{D}^{\sharp 7}$	$\mathfrak{E}^{7}$	$\mathfrak{F}^{7}$ $\mathfrak{E}^{\sharp 7}$	$\mathfrak{G}^{\flat 7}$ $\mathfrak{F}^{\sharp 7}$	$\mathfrak{G}^{7}$	$\mathfrak{A}^{\flat 7}$ $\mathfrak{G}_{\sharp}^{7}$	$\mathfrak{A}^{7}$	$\mathfrak{B}^{\flat 7}$ $\mathfrak{A}^{\sharp 7}$	$\mathfrak{C}^{\flat 7}$ $\mathfrak{B}^{7}$
In the Large Keys.	*C* :	.	.	.	.	.	.	.	V^7	.	.	.	.
	C♭, *B* :	.	.	.	.	.	.	V^7	.	.	.	.	.
	B♭ :	.	.	.	.	.	V^7	.	.	.	.	.	.
	A :	.	.	.	.	V^7	.	.	.	.	.	.	.
	A♭, *G*♯ :	.	.	.	V^7	.	.	.	.	.	.	.	.
	G :	.	.	V^7	.	.	.	.	.	.	.	.	.
	G♭, *F*♯ :	.	V^7	.	.	.	.	.	.	.	.	.	.
	F :	V^7	.	.	.	.	.	.	.	.	.	.	.
	F♭, *E* :	.	.	.	.	.	.	.	.	.	.	.	V^7
	E♭ :	.	.	.	.	.	.	.	.	.	.	V^7	.
	D :	.	.	.	.	.	.	.	.	.	V^7	.	.
	D♭, *C*♯ :	.	.	.	.	.	.	.	.	V^7	.	.	.
In the Small Keys.	*c* :	.	.	.	.	.	.	.	V^7	.	.	.	.
	b :	.	.	.	.	.	.	V^7	.	.	.	.	.
	b♭, *a*♯ :	.	.	.	.	.	V^7	.	.	.	.	.	.
	a :	.	.	.	.	V^7	.	.	.	.	.	.	.
	a♭, *g*♯ :	.	.	.	V^7	.	.	.	.	.	.	.	.
	g :	.	.	V^7	.	.	.	.	.	.	.	.	.
	f♯ :	.	V^7	.	.	.	.	.	.	.	.	.	.
	f :	V^7	.	.	.	.	.	.	.	.	.	.	.
	e :	.	.	.	.	.	.	.	.	.	.	.	V^7
	e♭, *d*♯ :	.	.	.	.	.	.	.	.	.	.	V^7	.
	d :	.	.	.	.	.	.	.	.	.	V^7	.	.
	c♯ :	.	.	.	.	.	.	.	.	V^7	.	.	.

TABLE (*e*).

SITUATION OF THE SMALL FOUR-FOLD CHORDS.

		$\mathfrak{c}^7$	$\mathfrak{d}^{b7}$		$\mathfrak{e}^{b7}$		$\mathfrak{f}^7$	$\mathfrak{g}^{b7}$		$\mathfrak{a}^{b7}$		$\mathfrak{b}^{b7}$	
		$\mathfrak{b}^{\#7}$	$\mathfrak{c}^{\#7}$	$\mathfrak{d}^7$	$\mathfrak{d}^{\#7}$	$\mathfrak{e}^7$	$\mathfrak{e}^{\#7}$	$\mathfrak{f}^{\#7}$	$\mathfrak{g}^7$	$\mathfrak{g}^{\#7}$	$\mathfrak{a}^7$	$\mathfrak{a}^{\#7}$	$\mathfrak{b}^7$
In the Large Keys.	*C*	.	.	II^7	.	III^7	.	.	.	.	VI^7	.	.
	C^b, *B*	.	II^7	.	III^7	.	.	.	.	VI^7	.	.	.
	B^b	II^7	.	III^7	.	.	.	.	VI^7	.	.	.	.
	A	.	III^7	.	.	.	.	VI^7	.	.	.	.	II^7
	A^b, *G*♯	III^7	.	.	.	.	VI^7	.	.	.	.	II^7	.
	G	.	.	.	.	VI^7	.	.	.	.	II^7	.	III^7
	G^b, *F*♯	.	.	.	VI^7	.	.	.	.	II^7	.	III^7	.
	F	.	.	VI^7	.	.	.	.	II^7	.	III^7	.	.
	F^b, *E*	.	VI^7	.	.	.	.	II^7	.	III^7	.	.	.
	E^b,	VI^7	.	.	.	.	II^7	.	III^7	.	.	.	.
	D	.	.	.	.	II^7	.	III^7	.	.	.	.	VI^7
	D^b, *C*♯	.	.	.	II^7	.	III^7	.	.	.	.	VI^7	.
In the Small Keys.	*c*	.	.	.	.	.	IV^7	.	.	.	.	.	.
	b	.	.	.	.	IV^7	.	.	.	.	.	.	.
	b^b, *a*♯	.	.	.	IV^7	.	.	.	.	.	.	.	.
	a	.	.	IV^7	.	.	.	.	.	.	.	.	.
	a^b, *g*♯	.	IV^7	.	.	.	.	.	.	.	.	.	.
	g	IV^7	.	.	.	.	.	.	.	.	.	.	.
	f♯	.	.	.	.	.	.	.	.	.	.	.	IV^7
	f	.	.	.	.	.	.	.	.	.	.	IV^7	.
	e	.	.	.	.	.	.	.	.	.	IV^7	.	.
	e^b, *d*♯	.	.	.	.	.	.	.	.	IV^7	.	.	.
	d	.	.	.	.	.	.	.	IV^7	.	.	.	.
	c♯	.	.	.	.	.	.	IV^7	.	.	.	.	.

TABLE *(f.)*

SITUATION OF THE FOUR-FOLD CHORDS WITH SMALL FIFTH.

		°$\mathfrak{c}^{7}$ °$\mathfrak{b}^{\sharp 7}$	°$\mathfrak{c}^{\sharp 7}$	°$\mathfrak{d}^{7}$	°$\mathfrak{e}^{\flat 7}$ °$\mathfrak{d}^{\sharp 7}$	°$\mathfrak{e}^{7}$	°$\mathfrak{f}^{7}$ °$\mathfrak{e}^{\sharp 7}$	°$\mathfrak{f}^{\sharp 7}$	°$\mathfrak{g}^{7}$ °$\mathfrak{f}^{\times 7}$	°$\mathfrak{g}^{\sharp 7}$	°$\mathfrak{a}^{7}$	°$\mathfrak{b}^{\flat 7}$ °$\mathfrak{a}^{\sharp 7}$	°$\mathfrak{b}^{7}$
In the Large Keys.	*C* :	.	.	.	.	.	.	.	.	.	.	.	°VII^{7}
	C♭, *B* :	.	.	.	.	.	.	.	.	.	.	°VII^{7}	.
	B♭ :	.	.	.	.	.	.	.	.	.	°VII^{7}	.	.
	A :	.	.	.	.	.	.	.	.	°VII^{7}	.	.	.
	A♭, *G*♯ :	.	.	.	.	.	.	.	°VII^{7}	.	.	.	.
	G :	.	.	.	.	.	.	°VII^{7}	.	.	.	.	.
	G♭, *F*♯ :	.	.	.	.	.	°VII^{7}	.	.	.	.	.	.
	F :	.	.	.	.	°VII^{7}	.	.	.	.	.	.	.
	F♭, *E* :	.	.	.	°VII^{7}	.	.	.	.	.	.	.	.
	E♭ :	.	.	°VII^{7}	.	.	.	.	.	.	.	.	.
	D :	.	°VII^{7}	.	.	.	.	.	.	.	.	.	.
	D♭, *C*♯ :	°VII^{7}	.	.	.	.	.	.	.	.	.	.	.
In the Small Keys.	*c* :	.	.	°II^{7}	.	.	.	.	.	.	.	.	.
	b :	.	°II^{7}	.	.	.	.	.	.	.	.	.	.
	b♭, *a*♯ :	°II^{7}	.	.	.	.	.	.	.	.	.	.	.
	a :	.	.	.	.	.	.	.	.	.	.	.	°II^{7}
	a♭, *g*♯ :	.	.	.	.	.	.	.	.	.	.	°II^{7}	.
	g :	.	.	.	.	.	.	.	.	.	°II^{7}	.	.
	f♯ :	.	.	.	.	.	.	.	.	°II^{7}	.	.	.
	f :	.	.	.	.	.	.	.	°II^{7}	.	.	.	.
	e :	.	.	.	.	.	.	°II^{7}	.	.	.	.	.
	e♭, *d*♯ :	.	.	.	.	.	°II^{7}	.	.	.	.	.	.
	d :	.	.	.	.	°II^{7}	.	.	.	.	.	.	.
	c♯ :	.	.	.	°II^{7}	.	.	.	.	.	.	.	.

TABLE (*g*.)

SITUATION OF THE LARGE FOUR-FOLD CHORDS.

			$D^{\flat 7}$			E^7		$G^{\flat 7}$		$A^{\flat 7}$	$B^{\flat 7}$		$C^{\flat 7}$
		C^7	$C^{\sharp 7}$	D^7	$E^{\flat 7}$	$F^{\flat 7}$	F^7	$F^{\sharp 7}$	G^7	$G^{\sharp 7}$	A^7	$B^{\flat 7}$	B^7
In the Large Keys.	*C*	I^7	.	.	.	.	IV^7	.	.	.	.	.	.
	C♭, *B*	.	.	.	.	IV^7	.	.	.	.	.	.	I^7
	B♭	.	.	.	IV^7	.	.	.	.	.	.	I^7	.
	A	.	.	IV^7	.	.	.	.	.	.	I^7	.	.
	A♭, G♯	.	IV^7	.	.	.	.	.	.	I^7	.	.	.
	G	IV^7	.	.	.	.	.	.	I^7	.	.	.	.
	G♭, *F*♯	.	.	.	.	.	.	I^7	.	.	.	.	IV^7
	F	.	.	.	.	.	I^7	.	.	.	.	IV^7	.
	F♭, *E*	.	.	.	.	I^7	.	.	.	.	IV^7	.	.
	E♭	.	.	.	I^7	.	.	.	.	IV^7	.	.	.
	D	.	.	I^7	.	.	.	.	IV^7	.	.	.	.
	D♭, *C*♯	.	I^7	.	.	.	.	IV^7	.	.	.	.	.
In the Small Keys.	*c*	.	.	.	.	.	.	.	.	VI^7	.	.	.
	b	.	.	.	.	.	.	.	VI^7	.	.	.	.
	b♭, *a*♯	.	.	.	.	.	.	VI^7	.	.	.	.	.
	a	.	.	.	.	.	VI^7	.	.	.	.	.	.
	a♭, *g*♯	.	.	.	.	VI^7	.	.	.	.	.	.	.
	g	.	.	.	VI^7	.	.	.	.	.	.	.	.
	f♯	.	.	VI^7	.	.	.	.	.	.	.	.	.
	f	.	VI^7	.	.	.	.	.	.	.	.	.	.
	e	VI^7	.	.	.	.	.	.	.	.	.	.	.
	e♭, *d*♯	.	.	.	.	.	.	.	.	.	.	.	VI^7
	d	.	.	.	.	.	.	.	.	.	.	VI^7	.
	c♯	.	.	.	.	.	.	.	.	.	VI^7	.	.

(E.) LIMITS OF THE EQIVOCALNESS OF SITUATION.

§ 156.

Each harmony, as we have seen, is so far equivocal as that it may be in more than one key, and hence may be designated at one time with one Roman numeral, and at another time with another; as e. g. the harmony 𝕲 may at one time be marked as *C:* V, at another as *G:* I, at another as *D:* IV, and again as *c:* V, &c.—Having attended to the nature of this equivocalness in itself considered, we will now inquire into its limits and the more specific principles by which, in cases that may occur, it may either wholly or in part be removed.

(*a.*) *In the first place*, (as we have seen in §§ 149, 151, and 155 at 1,) more than one harmony may often occur on one and the same degree of a key; still, however, not every harmony can thus occur, but at most no more than *two*, to wit:

In the large key:

(1.) There can stand *on the first degree*, only a large three-fold chord and a large four-fold chord; (and accordingly, neither a small nor a diminished three-fold chord, neither a principal nor a small four-fold chord, nor a four-fold chord with small fifth.) Or, to express this in our language of signs: The harmony of the first degree in the large key is always either I or I$^{\bar{7}}$; (but there is, in a large key, no small i, °i, no I^7, no i^7, and no °i^7.) On the first degree of *C*-large, e. g. we have 𝕮 and 𝕮$^{\bar{7}}$, (but no 𝔠, no °𝔠, no 𝕮^7, no 𝔠^7, and no °𝔠^7.)

(2.) So also the harmony of the *second* degree in a large scale is always either a small three fold chord or a small four-fold chord, i. e. either ii, or ii^7; (but never II, °ii, II^7, °ii^7, or II$^{\bar{7}}$.) Thus e. g. we find on the second degree of *C*-large only the fundamental harmonies 𝔡 and 𝔡^7; (no 𝕯, no °𝔡, no 𝕯^7, no °𝔡^7, and no 𝕯$^{\bar{7}}$.)

(3.) The harmony of the *third* degree in a large key is always either iii, or iii^7; (never III, °iii, III^7 °iii^7, or III$^{\bar{7}}$.)

(4.) The harmony of the *fourth* degree of a large key is always either IV, or IV$^{\bar{7}}$; (thus never iv, °iv, IV^7, iv^7, or °iv^7.)

(5.) The harmony of the *fifth* degree of a large key is always either V, or V^7; (but never v, °v, v^7, °v^7, or V$^{\bar{7}}$.)

(6.) The harmony of the *sixth* degree of a large key is either vi, or vi^7; (never VI, °vi, VI^7, °vi^7, or VI$^{\bar{7}}$;) and

(7.) The harmony of the *seventh* degree of a large key is always either °vii, or °vii^7; (never VII, vii, VII^7, vii^7, or VII$^{\bar{7}}$.)

The case is the same

In the small key.

(1.) The harmony of the *first* degree is always only a small three-fold chord; thus always i; (never I, I^7, i^7, °i^7, or I$^{\bar{7}}$.)

(2.) The harmony of the *second* degree is always either a diminished three-fold chord, or a four-fold chord with small fifth, i. e. °ii, or °ii^7; (never II, ii, II^7, ii^7, or II$^{\not{7}}$.)

(3.) There is no harmony of the *third* degree in a small key, (§ 149.)

(4.) The harmony of the *fourth* degree is always iv, or iv^7; (never IV, °iv, IV^7, °iv^7, or IV$^{\not{7}}$.)

(5.) The harmony of the *fifth* degree, as well in the small key as in the large, is always V, or V^7; (never v, °v, v^7, °v^7, or V$^{\not{7}}$.)

(6.) The harmony of the *sixth* degree is VI, or VI$^{\not{7}}$; (never vi, °vi, VI^7, vi^7, or °vi^7.)

(7.) The harmony of the *seventh* degree is always °vii; (never VII, vii, VII^7, vii^7, °vii^7, or VII$^{\not{7}}$.)

§ 157.

(*b.*) *In the second place*, each species of harmony occurs only on certain degrees of the large or the small scale, (§ 155, at 2.)

(1.) *A large three-fold chord*, as appears at once on glancing at table (*a.*) occurs only on the first, fourth and fifth degrees of a large key, and on the fifth and the sixth of the small; (but there is no large three-fold chord on the second, third, or seventh degree of any key, nor any on the sixth degree of a large key or on the first or fourth degree of a small key;)—or, to express it in our language of signs: a large three-fold harmony is always either I, or IV, or V, in the large key, or V, or VI in the small key; (thus we have no large Roman numeral II, or III, or VII, and no VI in a large key, and no I and no IV in a small key.)* The harmony ℭ, e. g. can be nothing else than either I, or IV, or V in a large key, or V or VI in a small key, and consequently either *C:* I, (the three-fold harmony of the first degree of *C*-large,) or IV in *G*, or V in *F* or *f*, or finally VI in *e*. (Compare the above table *b.*)

(2.) *Small three-fold chords* occur only on the second, third and sixth degree of the large key, and on the first and fourth degree of the small key; in other words, a small three-fold chord is always either ii, iii or vi in a large key, or i or iv in a small key; (there is no v or vii, and no i or iv in a large key, and no ii or vi in a small key.) The three-fold chord 𝔡 e. g. occurs only in *C*, in $B^{\flat}$, in *F*, in *a* and in *d*, to wit: as ii in *C*, as iii in $B^{\flat}$, as vi in *F*, as iv in *a*, and as i in *d*. (See table *b*, p. 297.)

(3.) So also *a diminished three-fold chord* is always either °vii in a large key, or °ii or °vii in a small key; (there is no °i, no °iii, no °iv, no °v, no °vi, and in a large key there is no °ii.) The diminished three-fold chord °𝔡 e. g. is to be found only as °ii in *c*, and as °vii in $E^{\flat}$ or $e^{\flat}$. (Table *c.*)

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* This, expressed in the still more general language of signs suggested in the end of § 121 and § 153, would be thus: Z is always either Z: I, or Z: IV, or Z: V, or z: V, or z: VI; (there is no II, no III, no VII, and neither Z: VI, nor z: I, nor z: IV.)

(4.) *The principal four-fold chord* is always V^7 both in a large key and in a small key; (there is no I^7, no II^7, no III^7, no IV^7, no VI^7, and no VII^7.) The principal four-fold chord $\mathfrak{B}^7$, e. g. occurs only as *E:* V^7, or as *e:* V^7. (Table *d.*)

(5.) *The small four-fold chord* (with small third and large fifth) is always either ii^7, iii^7, or vi^7 in a large key, or iv^7 in a small key; (there is no i^7, no v^7, no vii^7, and in a large key there is no iv^7, nor in a small key any ii^7, vi^7 or iii^7. The harmony $\mathfrak{f}^{\sharp 7}$, e. g. is always either iv^7 of *c*♯ or ii^7 of *E*, or vi^7 of *A*, or iii^7 of *D*. (Table *e.*)

(6.) *A four-fold chord with small fifth* always occurs either as $^\circ vii^7$ in a large key, or as $^\circ ii^7$ in a small key; (there is no $^\circ i^7$, no $^\circ iii^7$, no $^\circ iv^7$, no $^\circ v^7$, no $^\circ vi^7$, and in a large key no $^\circ ii^7$, in a small key no $^\circ vii^7$. (Thus e. g. $^\circ\mathfrak{f}^7$ can be nothing else than either $G^\flat$: $^\circ vii^7$, or $e^\flat$: $^\circ ii^7$. (Table *f.*)

(7.) Finally *the large four-fold chord* appears every where either as $I^{\not 7}$ or $IV^{\not 7}$ in a large key, or as $VI^{\not 7}$ in a small key; (there is no $II^{\not 7}$, $III^{\not 7}$, $V^{\not 7}$, $VII^{\not 7}$, and in a large key no $VI^{\not 7}$, and in a small key no $IV^{\not 7}$.) Thus e. g. $\mathfrak{E}^{\flat \not 7}$ can occur only as $VI^{\not 7}$ in *g*, or as $IV^{\not 7}$ in $B^\flat$, or as $I^{\not 7}$ in $E^\flat$. (Table *g.*)

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§ 158.

It will be perceived from this review, that the large and the small three-fold chords are the most equivocal of all the chords; for, each of these can occur on five different degrees of several keys. (Tables *a* and *b*, § 157, Nos. 1 and 2.)

Next to this, the small four-fold chord is the most equivocal; for one and the same small four-fold chord occurs on four different degrees of four several scales. (Table *e*, and § 157, No. 5.)

The diminished three-fold chord and the large four-fold chord occur only on three different degrees. (Tables *c* and *g*, § 157, Nos. 3 and 7.)

The principal four-fold chord and the four-fold chord with small fifth,—each occurs only on one degree in a large key and one degree in a small key. (Tables *d* and *f*, § 157, Nos. 4 and 6.) These last harmonies are accordingly the least equivocal in respect to their seat or situation. In one respect, the principal four-fold chord is still less equivocal than the four-fold chord with small fifth, for the latter is at one time $^\circ ii^7$, and at another $^\circ vii^7$; while the former is always V^7 and only V^7, whether in a large key or a small key. Thus the principal four-fold chord is in fact equivocal only in respect to *the mode* [*modus*] or key considered as *large* or *small*, (§ 120.)

(F.) COMPARATIVE VIEW OF THE TWO PRINCIPAL SPECIES OF HARMONIC EQUIVOCALNESS THUS FAR CONSIDERED.

§ 159.

We have now become acquainted with two principal species of the equivocalness of harmonies: with harmonic equivocalness, in a former part of the work, namely in § 100, and with equivocalness of seat or situation, just above.

We will now spend a moment in reverting to the former principal species of equivocalness, in order that, by the comparison of the two principal species and their subordinate varieties, our apprehensions of the equivocalness of harmonies in general may be extended and rendered more clear.

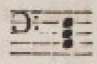
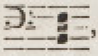
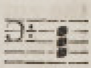
We have found, *in the first place*, that sometimes, in consequence of some transformation, a harmony assumes a form which is, both to the eye and to the ear, entirely similar to another harmony, or at least is so to the ear, so that taking the harmony in itself, we cannot decide whether it is to be regarded as the one harmony or the other; or, in other words, that harmony is equivocal in respect to the question, on what fundamental harmony it depends, and we have found that hence one and the same combination of tones may be regarded as depending at one time on this fundamental harmony, and at another time on that, or, (since we designate the fundamental harmonies by German [English black] letters placed under them,) we have seen that we may at one time put this letter, and at another time, that letter under one and the same combination of tones. This species of equivocalness was denominated *equivocalness in respect to the German [English black] letters.*

It is recollected, moreover, that this harmonic equivocalness consisted of two subordinate varieties, which were termed *enharmonic equivocalness* and *simply harmonic equivocalness*. We observed that, in the former, one and the same harmonic combination was expressed by different notes and consequently was designated by different Latin letters; while, in the latter, we saw one and the same combination of tones designated by different German [English black] letters, though expressed by one set of notes.

All this was harmonic equivocalness,—an equivocalness, namely on the question: what fundamental harmony lies at the foundation of this combination of tones? It arose from the fact that two or more totally different harmonies sometimes appear entirely similar to each other, and hence we may sometimes put different designations of fundamental harmonies under one and the same combination of tones.

But the different designations of fundamental harmonies set under harmonic combinations of tones, may themselves be equivocal in a wider sense, namely in the circumstance that, as a harmonic combination may be equivocal in respect to its fundamental harmony, so the fundamental harmonies themselves may be equivocal in respect to *their seat or situation.*

The fundamental harmony 𝕲, e. g. becomes, by the omission of the fundamental note, perfectly similar to the harmony °𝖇, and hence the combina-

tion . . . . 
may be either . . . . $^\circ\mathfrak{h}$,
or . . . . $\mathfrak{G}^7$.
This is the harmonic equivocalness of this combination.—But, besides, the fundamental harmonies $^\circ\mathfrak{h}$ and $\mathfrak{G}^7$ are themselves both equivocal in respect to their seat; for, the harmony $^\circ\mathfrak{h}$ is found on the second degree of *a* and on the seventh degree of *C* and of *c;* and the harmony $\mathfrak{G}^7$ occurs on the fifth degree of *C* and of *c*. Accordingly, each of the above designations of the chord , as to the fundamental harmony, is in itself equivocal in respect to seat or situation; for . . . . 
considered as . . . . $^\circ\mathfrak{h}$,
the chord is either . . . . *a*: °ii,
or . . . . *C*: °vii,

and

considered as . . . . $\mathfrak{G}^7$,
it is either . . . . *C*: V^7,
or . . . . *c*: V^7.

So likewise the combination [B d f a] is harmonically equivocal, because it may either depend upon $\mathfrak{G}^7$ or upon $^\circ\mathfrak{h}^7$. Regarded as $\mathfrak{G}^7$, it belongs on the fifth degree of *C*, (not of *c*, § 147, No. 12,) and this is its *harmonic* equivocalness; but regarded as $^\circ\mathfrak{h}^7$, its situation is either on the second degree of *a*, or on the seventh degree of *C;* and this is its equivocalness in respect to *seat or situation.*

So also the chord [B d f a$^\flat$] or [B d f g$^\sharp$] or [B d e$^\sharp$ g$^\sharp$] or [c$^\flat$ d f a$^\flat$] is at one time $\mathfrak{G}^7$, and at another $\mathfrak{E}^7$, $\mathfrak{E}^{\sharp 7}$ or $\mathfrak{B}^{\flat 7}$, (§ 85;) this is its harmonic equivocalness.—As [B d f a$^\flat$] it is *c*: V^7, as [B d f g$^\sharp$] it is *a*: V^7, as [B d e$^\sharp$ g$^\sharp$] it is *f*$^\sharp$: V^7, and as [c$^\flat$ d f a$^\flat$] it is *e*$^\flat$:V^7, (§ 148, No. 9;) and this is its equivocalness of situation.

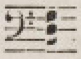
In like manner, the chord [B$^\flat$ d f a$^\flat$] sounds precisely like [B$^\flat$ d f g$^\sharp$.] As [B$^\flat$ d f a$^\flat$] it is $\mathfrak{B}^{\flat 7}$, as [B$^\flat$ d f g$^\sharp$] it depends upon the fundamental harmony $^\circ\mathfrak{e}^7$, (§ 92;) this is its harmonic equivocalness. But it has, again, in each of these two different capacities, a different situation: as $\mathfrak{B}^{\flat 7}$ it is *E*$^\flat$: V^7, or *e*$^\flat$: V^7, (Table *d*,) but as $^\circ\mathfrak{e}^7$ it is *d*: °ii^7, (§ 148, No. 7.)

This second species of equivocalness—the equivocalness of situation, is again of two different varieties, as is perceived by a more particular consideration of the example above adduced.

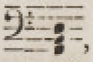
That is to say, it consists *partly* in the circumstance that one and the same fundamental harmony occurs at one time on one and at another time on another degree of some scale, and that thus,—in case the fundamental harmonies are, after our method, designated by German [English black] letters, and their seat or situation by Roman numerals,—*at one time one Roman numeral and at another time another may be placed under one and the same German* [*English black*] *letter*, as a designation of the seat of its harmony. A large three-fold chord, e. g. occurs at one time as I, at another time as IV, &c.—a diminished three-fold chord is at one time °vii and again °ii;—or, to adhere to the above example: the harmony °𝔥 appears at one time as °ii, (in *a*-small,) at another as °vii, (in *C* or *c*.) This species of equivocalness of situation might be termed *equivocalness in respect to the Roman numerals.* Almost all the fundamental harmonies are subject to it, with the exception of the principal four-fold chord; the latter always being V^{7}. (Table *d*.)

Equivocalness of situation consists again *partially* in the fact that one and the same fundamental harmony often occurs on the same degree of different keys, as e. g. a large three-fold chord on the fifth degree both of the small and the large key; or, in other words, that one and the same harmonic combination which requires to be designated by one and the same German [Eng. black] letter and also by one and the same Roman numeral, may still in one respect be equivocal, namely, in respect to *the mode* [*modus*] and thus in respect to the size of the Roman letter which is to be placed before the Roman numeral. The harmonies which are subject to this last species of equivocalness are the following three:

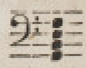
°vii, V, and V^{7}.

For, a diminished three-fold chord occurs on the seventh degree, both of the large and of the small key [or mode,] and, the harmony  e. g.

regarded as - - - - - - - - °𝔥,
and that too as - - - - - - - °vii,
can, as we have seen above, be either - - - - *C*: °vii,
or - - - - - - - - - - *c*: °vii,
and thus always indeed °vii, but yet either °vii of *C* or °vii of *c*.

In like manner, a large three-fold chord occurs on the fifth degree both of the large key and of the small key, and the harmony ,

considered as - - - - - - - - 𝔊,
and that too as - - - - - - - - V,
may be, as such, either - - - - - - *C*: V,
or - - - - - - - - - - *c*: V.

And so likewise, the principal four-fold chord, which we found entirely unequivocal, as it respects the Roman numeral (§ 158,) is still equivocal in respect to the *mode* [*modus*], i. e. in respect to its being of the large key or of the small key; for, the chord - - -  e. g.

taken as - - - - - - - - 𝔊^{7},
and consequently as - - - - - - - V^{7},
may be either - - - - - - - *C*: V^{7},
or - - - - - - - - - - *c*: V^{7}.

§ 160.

It appears, as the result of all the foregoing views of equivocalness, that the latter has indeed its limits, but that there is still no chord which would not be, in itself considered, in some way equivocal.

Every harmony becomes more definite and unequivocal in its character and meaning by means of the connection in which it occurs in a musical composition, very much in the same way that an ambiguous word in speech acquires a determinate signification by the connection of the discourse.

We shall see *how* this occurs, in the doctrine of modulation, (§§ 190—225.)

DIVISION VI.

RELATIONSHIP OF THE KEYS.

§ 161.

In the above enumeration of the different keys, (§§ 132—143,) it must have been observed by every one, that some of these have a greater similarity to one another, than to others; that *C*-large and *F*-large, e. g. are much more like each other than are *C*-large and *F*♯-large, or *F*-large and *g*♯-small.

This resemblance is called affinity or relationship. Two keys whose scales are very similar to each other, have for this reason many harmonies in common with each other, and thus they are in this respect also very much alike. Thus e. g. as every one must have observed, the scales of *C*-large and of *F*-large are very similar to each other, and accordingly most of the harmonies appropriate to the former key are found also in the latter, to wit: the harmonies $\mathfrak{C}$, $\mathfrak{d}$, $\mathfrak{d}^7$, $\mathfrak{F}$, $\mathfrak{F}^7$, $\mathfrak{a}$, $\mathfrak{a}^7$, while in *F*♯-large, which is very dissimilar to *C*-large, there is not a single harmony which would be appropriate to the scale of *C*-large.

Two keys whose scales have the highest degree of similarity to each other, are called *the most nearly related, the nearest allied*, or *the most kindred* keys.

(A.) THE MOST NEARLY RELATED LARGE KEYS.

§ 162.

The large or small keys most nearly related to any large key, are those whose scales are most like the latter; and these always are:

(1.) *The large key of its dominant*, and

(2.) *The large key of its under-dominant.*

The large key of *G* and the large key of *F*, e. g. are the most nearly allied to the large key of *C;* for, the scale of *G*-large differs from that of *C*-large in only a single tone: *C*-large has, namely *f*, while *G*-large has *f*♯.—So also *F*-large differs from *C*-large in only one tone; it having *b*♭ instead of *b*.—There is no large scale more similar to the *C*-scale than these two, because it requires only the chromatic alteration of *a single tone*, to convert the *C*-scale into the *G*-scale or the *F*-scale.

☟

G a b c d e f♯ g

C d e f g a b c d e f

F g a b♭ c d e f

☝

In like manner, we find the keys *C* and *D* to be the nearest related to *G;* *C* and *B*♭ to *F*, &c.

§ 163.

These relationships or alliances may be exhibited to the eye by the following figure, in which the letters standing next above one another indicate the most nearly related keys.

&c.
F♯
B
E
A
D
G
☞ *C*
F
B♭
E♭
A♭
D♭
G♭
&c.

That is to say: the large keys nearest related to *C*, are *G* and *F;* those nearest akin to *A*, are *E* and *D*, &c.

In pursuance of the idea of this figure, we might call the relationship of a key to its upper or its under dominant a relationship in a perpendicular line—in an *ascending* or *descending* line, and might say: *C* is nearest allied to *G* in an ascending line and the nearest allied to *F* in a descending line.

It is easily perceived, moreover, that the series of related keys here represented, corresponds to the so called circle of fifths which was brought to view in § 137.

§ 164.

(3.) Among the keys nearest related to a large key, we reckon, moreover, *the small key of its small under third.* Thus *a*-small is reckoned among the nearest related keys of *C*-large; for, the key of *a*-small, likewise, differs from the scale of *C*-large only *in a single tone*, i. e. it has *g*♯ instead of *g*, (§ 131.)

♮
C d e f g a b c
a b c d e f g♯ a b c
♭

In like manner, *A*-large is nearest related to *f*♯-small,—*C*♯-large to *a*♯-small,—*G*♭ to *e*♭, &c.

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§ 165.

(4.) Finally, a small key may be regarded as being among the most nearly allied to a large key, *when the former is built on the same tone as the latter;* and thus *c*-small, e. g. may be considered as being a nearest allied key to *C*-large. It is true indeed that the scale of *C*-large differs from that of *c*-small *in more than one tone;* for,

♮ ♮
C d e f g a b c
c d e♭ f g a♭ b c
♭ ♭

we find the tones *e*♭ and *a*♭ in the latter, while the corresponding tones in the former are simply *e* and *a;* but yet, from another quarter, they have even too much in common with each other. For, the tonic note of *C*-large is also the tonic note of *c*-small; and thus both keys revolve around one and the same center, around the principal tone *C*. The second degree of *C*-large is, moreover, the second degree of *c*-small also; the fourth degree of *C* is also the fourth of *c;* the fifth (the dominant) of *C* is also the fifth (the dominant) of *c;* the so called sub-semitone or large seventh of *C* is likewise the sub-semitone or large seventh of *c*, (as is shown in the foregoing figure by the column of letters arranged directly under one another.) We find on the fifth degree of both keys precisely *the same* harmonies, namely the harmonies 𝕲 and $𝕲^7$ both in *C*-large and in *c*-small. The similarity is, accordingly, so great, that it almost ceases to be a mere similarity and well nigh passes into an absolute identity; it is certainly far too great to admit of not regarding two keys which are as similar to each other as these are in so many points and indeed positively alike, as being *at least* most nearly related to each other. They are, as it were, children of one parent, yes twin sisters, though of different temperament, and if the key is not exactly the same, still the difference is only that of two sorts of character, (*mode* or *modus*),—they are, as it were, one and the same person, only of two different dispositions.

In the same way we are to regard the keys *A*-large and *a*-small, *E*♭-large and *e*♭-small, &c. as twin sisters, as being in a manner identical, and of course as being most nearly related.

§ 166.

It is perceived, moreover, that *the ground* of the relationship considered here under (4.) is entirely diverse from that which established the relationship mentioned under (1.), (2.) and (3.) The most intimate relationship between *C*-large and *c*-small, e. g. does not depend upon *the similarity* of the scales; for these two scales, instead of differing from each other only in a single tone, differ in two tones (the one having *e*♭ and *a*♭, while the other has *e* and *a*;) and thus the near relationship in this case does not depend on *such* a species of similarity, but rather upon a certain *identity in the gross*, i. e. upon the fact that the scale of *c*-small is only a variation, in a particular respect, of the scale of *C*-large.—The tonic note of the scale of *C*-large occurs also in the scale of *G*-large, not as the tonic note however, but as the fourth tone;—the second tone of *C*-large, the tone *d*, occurs also in *G*-large, not however as the second, but as the fifth or dominant, &c. But the tonic note of *C*-large, the tone *c*, occurs in *c*-small as the tonic note,—the second of the *C*-large scale, the tone *d*, occurs in *c*-small as the second,—and so also the tones *f*, *g*, and *b* occur in both scales as the fourth, fifth and seventh degrees; and indeed, even the third and the sixth tone of both scales are the same degrees, being merely altered chromatically, to wit: *e* and *a*,—*e*♭ and *a*♭. The two scales are thus, as it were, identical, differing only in the mere circumstance of a chromatic variation of the third and the sixth degrees. (Mus. Tr. § XIX.)

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§ 167.

The relationships of small keys to large keys, exhibited under numbers (3.) and (4.), may be represented by the following figure:

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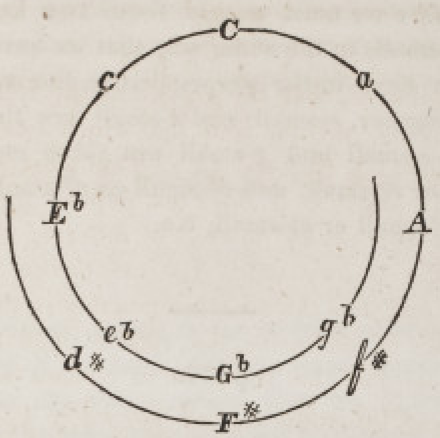
–*G*♭—*e*♭—*E*♭—*c*—*C*—*a*—*A*—*f*♯—*F*♯—

that is to say: the small keys most nearly related to *C*-large are *c*-small and *a*-small,—those most nearly related to *A*-large are *a*-small and *f*♯-small,—those most nearly related to *E*♭-large are *e*♭-small and *c*-small, &c.; And this species of relationship, here shown under the form of a horizontal line, may be called *horizontal relationship*, in contradistinction from the ascending and descending species of relationships exhibited under numbers (1.) and (2.)

The above horizontal line can, moreover, be bent into a circle of thirds, similar to the so called circle of fifths, so as to present all the relationships of the species now in question. It is also here perceived, that the keys most distant from each other approach each other again enharmonically and resolve themselves into each other.



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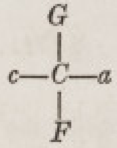
§ 168.

It appears from the foregoing exhibition of the subject, that each large key has four keys most nearly related to it; namely, two large keys in the perpendicular line, and two small keys in the horizontal line. This highest relation is sustained to *C*-large, e. g. by *G*-large and *F*-large in the perpendicular line, and by *c*-small and *a*-small in the horizontal line.

We can accordingly represent the whole of the most intimate relationships of *C* by the following figure:



(B.) THE MOST NEARLY RELATED SMALL KEYS.

§ 169.

If we go into an examination of the most nearly related small keys, as we have just done in reference to the large keys, we shall find that each of these has also four other keys most nearly allied to it; namely, two small and two large keys. This nearest relationship is sustained to *a*-small, e. g. by

(1.) *The small key of its upper dominant*, *e*-small, and

(2.) *The small key of its under dominant*, *d*-small.

There is none of all the scales of the small keys which would more closely resemble that of *a*-small, than the scale of *e*-small and the scale of *d*-small; and therefore we must regard these two keys as the keys most nearly related to *a*-small, in the same way that we have considered *G*-large and *F*-large as the keys in the perpendicular line most nearly related to *C*-large. In like manner, *e*-small and *d*-small are the keys most nearly allied to *a*-small,—*a*-small and *g*-small are those most closely allied to *d*-small;—*d*♯-small or *e*♭-small, and *c*♯-small or *d*♭-small are the keys most nearly related to *g*♯-small or *a*♭-small, &c.

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§ 170.

The accompanying table affords a representation of the relationships of the perpendicular line among the small keys. The small keys most nearly related to *a*-small, e. g. are: *e*-small in the ascending line, and *d*-small in the descending line;—the small keys most nearly related to *c*-small, are: *g*-small, ascending, and *f*-small, descending, &c.

This table also coincides with the small key circle of fifths, with which we have become acquainted in § 140.

&c.
d♯
g♯
c♯
f♯
b
e
a ☜
d
g
c
f
b♭
e♭
&c.

---

§ 171.

By a more careful consideration of the species of relationship presented in the foregoing section, it will be observed, that the scales of *e*-small and *d*-small are *not so extremely similar* to the scale of *a*-small, as are the scales of *G*-large and *F*-large to that of *C*-large, &c.

For if we compare the scale of *a*-small with its nearest related scales, as we did in the case of the scales of the large keys (§ 162,)

e f♯ g a b c d♯ e
a b c d e f g♯ a b c d e
d e f g a b♭ c♯ d

we find a far greater diversity here than we did there. We there found the scales of *C* and *G*,—of *C* and *F*, &c., to differ only in *a single* tone; whereas the difference here amounts to *three* tones: the scale of *e*-small differs from that of *a*-small by *f*♯ instead of *f*, *g* instead of *g*♯, and *d*♯ instead of *d*;—*d*-small differs from *a*-small by *g* instead of *g*♯, *b*♭ instead of *b*, and *c*♯ instead of *c* (§ 138);—and accordingly it may be said, that the relationship in the perpendicular line (whether ascending or descending) *is never so entirely intimate between two small keys as is that between two large keys.*

---

§ 172.

A small key, moreover, stands in the nearest relationship to

(3.) *The large key of its third.* Thus *a* small stands in the nearest alliance to *C*-large, for the same reason that we (§ 164), vice versa, reckoned *a*-small among the keys nearest allied to *C*-large.

So likewise this nearest relationship subsists between *c* and *E*♭, between *f*♯ and *A*, &c.

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§ 173.

Finally, a small key stands in the nearest alliance also to

(4.) *The large key situated on the same degree;* as e. g. *C* to *c*, for the same reason that, vice versa, (§ 165) *c* was regarded as one of the nearest related keys of *C*.—So it is also with *a* and *A*,—*f*♯ and *F*♯ or *G*♭, &c.

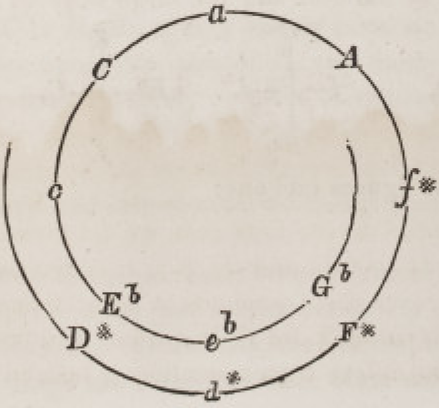
---

§ 174.

The horizontal relationship of a small key may therefore be exhibited by the following series:

$$-E\flat-c-C-\overset{\natural}{a}-A-f\sharp-F\sharp-$$

Or, the horizontal line may be crooked into a circular form:



It is just the same circle of thirds that was exhibited in §167, with the mere difference that it begins at another point.

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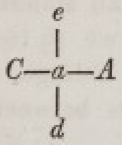
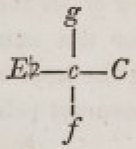
§ 175.

The following figure affords a view of all the nearest relationships of a small key, both in the perpendicular line and in the horizontal. Take, for example, *a*-small and *c*-small:





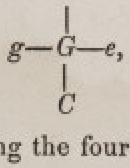
That is to say: the keys nearest related to *a*, are *e*, *d*, *C*, and *A*, namely *e* in the ascending line, and *d* in the descending line, and *C* and *A* in the horizontal line. The keys most nearly related to *c* are *g*, *f*, *E♭* and *C*.

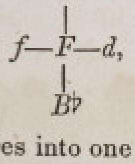
(C.) KEYS SUSTAINING THE SECOND GRADE OF RELATIONSHIP TO A LARGE KEY.

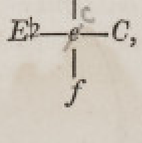
§ 176

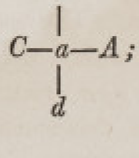
We have thus far become acquainted with the *nearest* relationships of every key. The *more remote* relationships depend upon the following principle: the nearest relatives of my nearest relatives are my relatives in the second degree; i. e. those keys stand in the second degree of relationship to a key which are most nearly related to its nearest relatives.

In order to make this obvious, we will just examine the second grade of relationships to *C*. *C* is related in the *first* degree to *G*, *F*, *a*, *c* (§ 162;) and the nearest relatives of these four keys are *D*, *e*, *A*, *d*, *B♭*, *f*, *E♭*, *g*, as is shown by the following four figures:

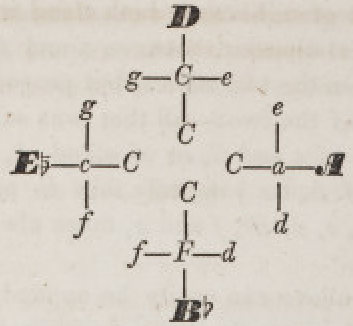




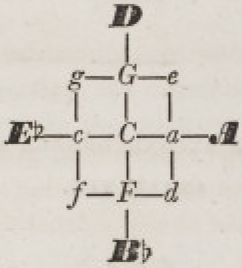




Or, putting the four figures into one:



Or, contracting the figure still more:



Accordingly, *D*-large, *e*-small, *A*-large, *d*-small, *B♭*-large, *f*-small, *E♭*-large and *g*-small are related to *C*-large in the second degree,—*D* by means of *G*, *e* by *G* and by *a* *A* by *a*, *d* by *a* and by *F*, &c.

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§ 177.

One circumstance here, however, must be carefully understood: The above named four keys are, according to the representation just given, all related to *C* in the second degree, and thus all in a like near relationship to *C;* this relationship, however, more accurately considered, is *not exactly alike close.* It must be obvious even without very close consideration, that *E♭* and *A* are really in point of fact more foreign to *C*, than are *D*, *B♭*, *e*, *d*, *f* and *g*.—If we inquire for the reason of this fact, we find it as follows:

The relationship of *C* to *D*, *B♭*, *e*, *d*, *f* and *g* rests on *the similarity* of the scales. The scales most like that of *C*, are those of *G*, *F*, *c* and *a*, and those which stand next to these, in point of similarity, are the scales of *D*, *B♭*, *e*, *d*, *f* and *g*. And hence the similarity of the last six keys to the key of *C* is a similarity of the second degree, and therefore the latter can with perfect propriety and indeed must be recognized as relatives of *C* in the second degree.

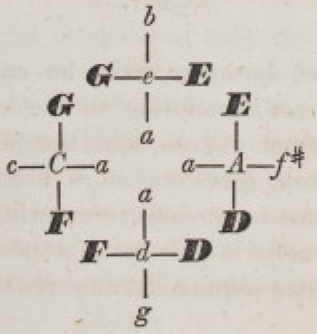
The case is not entirely the same, as it respects the relationship of *A* to *C*. This does not depend upon any mutual *similarity* of the scales; the *A*-scale is at least far less like the *C*-scale, than is that of *D*, of *e*, of *d* or of *B♭*. *A*-large and *C*-large are related to each other only by *a*-small, and that too in the second degree, because both stand related to *a*-small in the first degree. But the relationship between *a* and *A* depends, not so much upon a *similarity* between the two scales, but properly, according to § 165, upon a certain *identity* of the two:—all that was said in that section, however, upon the identity of *c* and *C*, or of *a* and *A*, (as e. g. that the tonic of *a* is also the tonic of *A*, &c.) entirely fails to apply between *A* and *C*, while between *C* and *D*, *e*, *d*, *B♭*, *f* and *g*, there always remains a tolerable similarity of the scales.

What has been said above can easily be applied to the relationship between *C* and *E♭*, as well as to *all similar horizontal relationships of the second degree.*

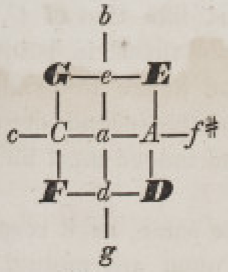
(D.) KEYS SUSTAINING THE SECOND DEGREE OF RELATIONSHIP TO THE SMALL KEY.

§ 178.

We may find, in like manner, the relatives of the second degree in the small scales by first ascertaining its nearest relatives and then the nearest relatives of the latter. The nearest relatives of *a*-small, e. g. are, as we know, *e*-small, *d*-small, *A*-large and *C*-large; and the nearest relatives of the latter are shown by the following figures:



Or, combining the four figures into one:



And thus *b*, *E*, *f♯*, *D*, *g*, *F*, *c* and *G* appear as relatives of *a* in the second degree.

These relationships, again, are not quite equally *intimate.*

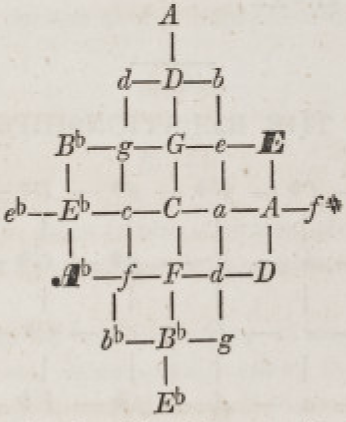
For, in the first place, we have seen above (§ 171) that the perpendicular relationships of small keys are not quite so intimate as are those of large keys.

And besides, in the second place, what was said above (§ 177) upon the horizontal relationship of the second degree between two large keys, applies here also.

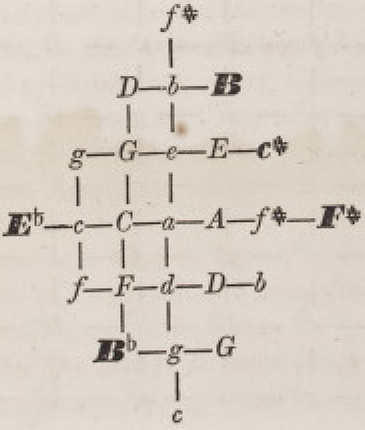
(E.) MORE REMOTE RELATIONSHIPS.

§ 179.

The still more remote relationships are ascertained on the same principles that were adopted in finding the relationships of the second degree, that is to say, by first seeking for the relatives of the second degree, and then the nearest relatives of these. Thus e. g. in the following figure,



the large key of *C* stands in the third degree of relationship to *b*, *E*, *f*♯ or *g*♭, *e*♭, *A*♭ and *b*♭. (Also to *A*, *d*, *B*♭, *D*, *g* and *E*♭; but since these last six keys stand *also in the second* degree of relationship to *C*, their relationship of the third degree does not come under consideration, and accordingly *b*, *E*, *f*♯ or *g*♭, *e*♭, *A*♭ and *b*♭ alone are regarded as relatives of the third degree.) So, likewise, as is shown by the following figure,



B, *c*♯, *F*♯ or *G*♭, *E*♭, *f* and *B*♭ stand related to *a* in the third degree; (also *f*♯, *D*, *g*, *b*, *G* and *c*; but since the last six already stand in the *second* relationship to *a*, *only the first six* are taken into the account as relatives of the *third* degree.)

(F.) TABLE OF ALL THE RELATIONSHIPS OF KEYS.

§ 180.

The following figure exhibits the relationships of the keys, at one view.

It might be useful, *as an exercise*, to go through this table carefully, and propose questions somewhat as follows: What keys are most nearly related to *C*-large?—What to *c*-small?—What to *f*-small? &c.—What keys are thus related in the second degree?—What in the third degree?—Which of these relationships are the more or the less intimate?—In which degree are *F* and *E* related to each other?—What is the relationship between *c* and *a*?—&c.

TABLE OF THE RELATIONSHIPS OF KEYS.

C	*a*	*A*	*f*♯	*F*♯	*d*♯	*D*♯	*b*♯	*B*♯	*g*×
F	*d*	*D*	*b*	*B*	*g*♯	*G*♯	*e*♯	*E*♯	*c*×
B♭	*g*	*G*	*e*	*E*	*c*♯	*C*♯	*a*♯	*A*♯	*f*×
E♭	*c*	*C*	*a*	*A*	*f*♯	*F*♯	*d*♯	*D*♯	*b*♯
A♭	*f*	*F*	*d*	*D*	*b*	*B*	*g*♯	*G*♯	*e*♯
D♭	*b*♭	*B*♭	*g*	*G*	*e*	*E*	*c*♯	*C*♯	*a*♯
G♭	*e*♭	*E*♭	*c*	*C*	*a*	*A*	*f*♯	*F*♯	*d*♯
C♭	*a*♭	*A*♭	*f*	*F*	*d*	*D*	*b*	*B*	*g*♯
F♭	*d*♭	*D*♭	*b*♭	*B*♭	*g*	*G*	*e*	*E*	*c*♯
B♭♭	*g*♭	*G*♭	*e*♭	*E*♭	*c*	*C*	*a*	*A*	*f*♯
E♭♭	*c*♭	*C*♭	*a*♭	*A*♭	*f*	*F*	*d*	*D*	*b*
A♭♭	*f*♭	*F*♭	*d*♭	*D*♭	*b*♭	*B*♭	*g*	*G*	*e*
D♭♭	*b*♭♭	*B*♭♭	*g*♭	*G*♭	*e*♭	*E*♭	*c*	*C*	*a*

DIVISION VII.

CHARACTERISTICS OF THE KEYS.

§ 181.

If we revert again to the keys now passed over, we find, in the first place, two principal species: *large* and *small.*

The fact that these two species are of an essentially different character, has already been mentioned; any attempt, however, to describe this difference by words, would be as useless as it is impracticable. (Compare § 120.)

§ 182.

But in addition to this, there is also *a certain characteristic difference between the large keys among themselves,* and so also among the different small keys.

It is true, indeed, that all keys belonging to one and the same principal species are, in themselves, fundamentally alike; that is to say, all the large keys are but mere transpositions of one and the same large key, and so also all the small keys are only repetitions and true copies of one small key, differing only in the simple circumstance of being one or more large or small degrees higher or lower, so that *C*-large, e. g. would sound, on an instrument tuned somewhat high, precisely like *D*♭-large, perhaps, or *C*♯-large, on an instrument with a lower tuning. The difference between *C*-large and *C*♯-large consists simply in the circumstance that the former, with the same tuning, is throughout lower, while the latter is higher; in essence the two are precisely alike. And it would follow from this fact, that a composer, in choosing the key in which to write a piece of music, would have nothing to do but merely to select that key in which the delivery of the piece would be most easy and convenient to the singer or player, and which should in general be best adapted to the nature and compass of the voices and instruments concerned.

In nature and essence, the case is precisely as stated; and a piece of music transposed from *C* to *C*♯ sounds in a somewhat lower tuning, precisely as it it sounded in *C* with a higher tuning.

Still, however, certain accidental circumstances come into the account, and give to each key a characteristic peculiarity.

§ 132, (*A.*)

TEMPERAMENT.

The first of these accidental circumstances arises from the fact that it is impossible to tune our musical instruments in such a manner that they shall *in all the keys, be perfectly pure*, i. e. in such a manner as is required by the philosophical Acoustic computation of vibrations.

Whence this impossibility arises, can properly be shown only in the doctrine of harmonic Acoustics or Canonics;* and accordingly the explanation of this point does not pertain to the Theory of Musical Composition. (Music Teacher, § IX.)—But if it is not the part of a treatise on the Theory of Musical Composition to point out the philosophical cause of the fact in question, it is still appropriate to such a treatise to consider the results of the fact, and by this means to acquire at the same time, a more minute and perfect acquaintance with the nature of our musical system in general.

If we would tune an instrument with entire purity and exactness,—that is to say, if we would tune every tone as it is required to be tuned by the scale which philosophical harmony establishes as the ideal, as e. g. the tone *g* as the *perfectly pure* fifth of *c*, i. e. in such a manner that the velocity of the vibrations of the tone *g* would be to those of the tone *c* precisely as 3 to 2, *g* thus accomplishing three vibrations in the same time that *c* accomplishes two,—and so also *d* as a pure fifth or under-fourth of *g*, and so on: *a*, *e*, *b*, *f*♯, *c*♯, *g*♯ in mere ideally pure fifths, as far as to *b*♯, *f*×, &c.,—and, vice versa, *f* as the ideally pure fourth or under fifth of *c*, *b*♭ as that of *f*, and so on as far as to *d*♭♭, *g*♭♭, &c.,—it would follow, that the tones resulting from such an ideally pure tuning would not entirely coincide with their enharmonically parallel tones, (Music Teacher, § XIX;) but we should have in the first mentioned succession of fifths, e. g. an *f*♯, which would not be exactly the same tone as the *g*♭ which would occur in the succession of under-fifths above mentioned, but *f*♯ and *g*♭ would appear as two tones perceptibly different from each other. And so likewise ♯*c* and *d*♭, *g*♯ and *a*♭, d♯ and *e*♭, *b* and *c*♭, *e* and *f*♭, &c. would not be the same in sound, but actually different tones; the enharmonic distinction would no longer be a mere distinction on paper, but an audible one.—The case would be the same, moreover, in respect to the distinction between two enharmonically parallel keys. A key would no longer resolve another enharmonically, a circle of fifths, fourths or thirds, would no longer return into itself, but the keys would run in a straight line in perpetually opposite directions—into an infinity of distance from each other.—A multitude of equivocalnesses,—which however may in a certain sense be regarded as imperfections,—would disappear: a small fifth, as e. g. $g\sharp$—$\overline{d}$, or a—$\overline{e\flat}$, would no longer sound like a large fourth, $a\flat$—$\overline{d}$, or a—$d\sharp$, (Music Teacher, § XLI;) the chord of the superfluous sixth would no longer sound like the principal four-fold chord, (§ 95,) &c.

A system thus corresponding to the acoustic ideal of purity might indeed have much of not merely ideal, but, if it could only once be fully carried out, of actual worth. But in undertaking to compass this object, we should find ourselves in a new difficulty: for, all our instruments must in this case be so regulated, that, instead of giving our twelve different tones in the compass of an octave, they could give an infinite number of them. We should be obliged so to adjust our piano-fortes and organs, e. g. that they would contain appropriate keys, strings and pipes respectively for all the different tones which are now considered as enharmonically parallel, as e.g. one for *b*♯, another for *c*♭, and another again for *d*♭♭, &c.—one for *f*♯ and another for *g*♭, and so on without end! (Music Teacher, § XIX.)—And the same difficulty moreover, though perhaps not quite so strikingly, would appear also in other instruments. We should groan under the burden of such an ideal perfection, with its multitudinous retinue of tones and keys.

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* The most mathematically acute, and at the same time the clearest demonstration of the absolute necessity of a tempered tuning, has been given by *Chladni*, in the periodical *Caecilia*, vol. V, pp. 253, 269; and vol. VI, p. 231.

It is therefore a very fortunate circumstance, that such an ideal purity of tuning is not necessary, in order to the perfect goodness of musical sound, and that the three-fold chord [B d♯ f♯] e. g. sounds perfectly well, even if its fifth, *f*♯, is not tuned exactly as a fifth ought to be, according to the ideal of philosophical harmonies, and if its third, *d*♯, has not exactly that pitch in the tuning which philosophically belongs to a third. The enharmonic difference between the proper ideal of *d*♯ and that of *e*♭, e. g. is so small, that a tone which should hold an intermediate position between the two might *perfectly well* be employed either for *d*♯ or for *e*♭, and thus can be used at one time as *d*♯ for the third of *B*, and at another as *e*♭ for the fifth of *a*♭. Hence if we tune the tones of an instrument, e. g. a piano forte, in such a manner that the tone of each key holds nearly a middle position between the enharmonically parallel tones, the infinitely numerous tones required by the ideal purity become so blended and united as to reduce themselves to merely twelve different tones within the compass of each octave, (Music Teacher, § XIX,) and these we have to employ in only 24 keys, (§§ 137 and 140,) which though not indeed mathematically pure, still are musically so, i. e. they are as pure as our ear requires.*

Such a designedly and artificially imperfect tuning, in which each key yields and gives up a little of its ideal purity for the common good of the rest, in order to render it possible to resolve the enharmonically parallel keys into one another, is called *temperament*, *musical temperament*, *the temperament of the system of tones*, *or the musical system*, and also *an intermediate tuning*, because it tunes the tones in such a manner that they hold an intermediate or middle position between the enharmonically different tones; and the slight deviation of a tone thus tuned, from perfect purity, is called *variation* [*of temperament*.]

Such a temperament may, again, be of different species. It may be such, namely, that all the twenty-four keys may deviate in an *equal* degree from perfect purity, and this species of temperament is called *equal* or *equalized temperament*; or, it may be such that one or more keys are brought nearer to the ideal purity, while the others are removed so much the farther from it, since it becomes necessary, in favoring the former, to carry the latter farther from their purity, and thus the former are favored and made more pure, as it were, at the expense of the latter; a temperament of this sort is termed *an unequal or unequalized temperament*. In *the equalized temperament*, each of the twelve tones found in every octave comes to stand at a like distance from the foregoing and the following one, and thus the difference of pitch between *b*♯ or *c* and *c*♯ or *d*♭, e. g. is just as great as that between *c*♯ or *d*♭ and *d* or *c*× or *e*♭♭, or as that between *d* and *d*♯ or *e*♭, &c.; and in like manner also, all the other intervals of the same species are exactly equal in size, and thus all the large fifths, e. g. are equally pure and equally impure, and so also all the large or small thirds, fourths, sixths, &c.—In *the unequal temperament*, on the contrary, the distance of each of the twelve tones from its next neighbor, is not in all cases equally great, but there is a greater or less degree of inequality of distance in the case of intervals of the same species, as e. g. the fifth *C—g* is greater than the fifth *F*♯—*c*♯, &c.

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* Compare Leipziger Musical. Zeitung, 1824, S. 577; and particularly *Caecilia* XII, 47, S. 214.

This latter inequality may moreover occur in different ways.

The favor shown to one or more keys in prefence to others, may at one time be considerable and at another time but slight; it may at one time be the accommodation of only a single key, or at most of a few keys, at the expense of all the rest; and again it may be the accommodation of the great mass at the expense of only a few. It is hence perceived that a multitude of subordinate species of unequal temperament are conceivable.

Many theorists write and contend, and that too even learnedly and violently, on the question, what temperament is the preferable one, whether the equal or the so and so unequal. One finds only the one to be good, deeming all the rest to be intolerable; while another, on the contrary, represents an entirely different one as being the only true temperament, considering the former and all others as detestable and not to be endured. We will here leave the contest undecided, and only add, that our keyed instruments are tuned in the unequalized manner and that too in such a way as to leave the less transposed, and consequently the more usual keys, nearer to the perfect state of purity, than the more transposed, and of course more chromatic.

The greater or less deviation from absolute purity, thus falling to the lot of the chromatic keys,—a deviation which after all is no real imperfection, imparts to these keys something peculiarly foreign in the character of their sound, and by this means the greater or less impurity of this or that more or less transposed key, even becomes a source of the characteristic difference of the one from the other; or, in other words, from the fact that each of our twenty-four keys deviates from the ideal purity in a greater or a less degree, and each in a different way according to the different mode of tuning, there accrues to each of them a peculiar characteristic difference, which however can be better felt than described with words, or at least better than it can be exactly and absolutely defined.

The latter is rendered the less possible by the fact that the different instruments are incapable, from their own nature and arrangement, of being tuned in one temperament, i. e. so tuned that all species of instruments shall in any one key deviate in an equal degree and in the same manner from perfect purity. Indeed, no human ear is so perfectly organized as that it would be in a condition to give exactly the same temperament in every instance to one and the same instrument, as e. g. a piano-forte. But whatever temperament any one instrument may have, it still does not follow that all other instruments will have precisely the same temperament, as e. g. the bowed instruments, such as violins, violas, &c. It is true indeed that the latter must, as the result of their structure, be strictly capable of playing according to every temperament; but since their open strings are usually tuned in perfectly pure fifths, *these* are really appropriate in *no* temperament, and since the other tones of these instruments must be very abundantly brought into connection with those of the open strings and must be equalized with them, it follows as it were necessarily, and thus in spite of all the quarrels of theorists on the subject of the best temperament, that there must be for this class of musical instruments an entirely peculiar temperament. Other temperaments, again, flow from the arrangement of wind instruments, and indeed a peculiar one from the nature of each species of these instruments. In short, the temperament of none of the above named instruments agrees exactly with that of all the others; in none is this or that key tempered in exactly the same degree and in precisely the same manner, as in each of the others; but their different temperaments have only this in common with each other, to wit, the fact that in all musical instruments the more usual and less transposed keys keep nearer the ideal purity in general, than do the more chromatic,—and even this only in the above named instruments; while others, as e. g the horn and trumpet, and in some measure also the clarinet, have only one temperament for all keys,—the first properly none at all; and so likewise the voice, which in its own nature requires no temperament, has the power still to accommodate itself to instruments.

Under such circumstances one might well suppose that a piece of music performed on instruments so variously tempered could not sound otherwise than in the utmost degree disagreeably, and that e. g. a violin and a pianoforte could not be heard together, because if perhaps the $\bar{a}$ of the former is tuned according to $\bar{a}$ of the latter, the $\bar{\bar{e}}$ of the first, which is a pure fifth to $\bar{a}$, must make an intolerable dissonance with the $\bar{\bar{e}}$ of the last, tuned, as it is, not purely, but in the intermediate manner; and so also the $\bar{d}$ and the g of the former, with the $\bar{d}$ and the g of the latter. And indeed, one will see cause still more to be surprised that the effect is *not* so disagreeable in fact, if he has chanced to read in fundamentally learned books, that the unison does not bear even the slightest deviation from the most perfect purity and that the least deviation in it would be intolerable in the utmost degree. Experience, however, has shown that our ear is not so excessively nice, but that, on the contrary, it will receive even imperfect unisons in connection with the general course of a piece of music. (For how would it otherwise be possible, e. g. to perform a symphony, without manning the whole orchestra with purely ideally perfect virtuosos and with instruments of the same character?—The fact above stated may, not improbably, hold more or less connection with the observations of Messrs. *Ellicot* and *Breguet*, according to which two pendulums whose vibrations differ but slightly from each other act upon one another in such a manner that both assume a uniform movement*;—as also with an idea, maintained by *Laplace*,† namely that even two clocks of only a very slight difference in their movement, will, placed on a common basis, at last assume a perfectly similar motion; all which coincides also with a fact stated by *Chladni*, to wit, that somewhat impure harmonic combinations become so equalized and adjusted to one another in the course of their propagation through the atmosphere, that at a considerable distance the impurity sometimes entirely vanishes.—Many readers may perhaps have observed this in common night music, which, when heard in a still night at a wide distance, sometimes sounds quite tolerably.

§ 182. (B.)

QUALITY OR CHARACTER OF SOUND.

A *second* circumstance which is likewise, even if only accidentally, attended with a characteristic difference of keys, depends upon the fact that certain tones of many instruments have a different kind of sound, as it were a peculiar color or complexion of sound, a peculiar stamp of sound (*timbre*,) and thus impart to those keys in which several tones of this or that kind of sound occur, this or that peculiar character. This is the case as well in stringed instruments, as in wind instruments.

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* See *Gilbert's Annal.* B. 57, 1817, 4tes St. S. 231. u. f.

† In his *Essai sur les probabilités*, 1819.

As it respects the former, as e. g. the violin, the viola, &c., they sound differently in those keys in which those tones frequently occur to which their strings are tuned, from what they do in those keys where the latter class of tones are foreign to the scale and hence only seldom occur, and where of course all or at least almost all that occur must be made by fingering the strings. Thus e. g. the violin, whose strings are tuned to the tones g, $\bar{d}$, $\bar{a}$ and $\bar{\bar{c}}$, will frequently use all four naked strings in the large keys of *F*, *C*, *G*, and *D*, because all the four tones of these strings are tones appropriate to the scale;—but in *A*-large the *g*-string is not appropriate to the scale,—in *E*-large, the *d*-string is not;—in *D*♭-large, neither string is so.—In *E*♭ merely the thirds of the tonic and the dominant are open strings, (g and $\bar{d}$,) while all the other tones must be fingered;—in *E*, on the contrary, only the tonic itself and its under fifth, ($\bar{c}$ and $\bar{a}$,*) are naked strings;—in *A*♭ but a single open stringed tone occurs, namely that of the low *g*-string, which is here the so called subsemitone [large seventh] of the key.—In the large keys of *F*, *C*, *G*, *D*, *A* and *E*, both the higher strings belong to the scale;—in the large keys of *D*, *G*, *C*, *F*, *B*♭ and *E*♭, both the lower strings do;—while, in *D*♭ neither does, &c.

Now since a tone made by an open string always has a kind of sound different from that produced by a fingered string, the former sounding more shrill and clear, the latter more soft and dull, it follows that a certain difference of every key from every other must result from this as well as from many other like accidental circumstances.

Nor are all tones of one character, moreover, in *wind instruments*. And besides, many wind instruments use higher sets of tones for certain keys, and lower sets of tones for certain other keys, as e. g. the horn, the trumpet, and to some extent also the clarinet. But by higher sets of tones their sound is rendered throughout more sharp and shrill, while by lower sets of tones it becomes more full, but less piercing and brilliant; and by this means one and the same piece of music, first played e. g. on *C*-horns and then on *F* horns, sounds very differently, it being far more clear, firm and shrill in the latter case than it was in the former; for, in the case of its being played on the *F*-horns, it is not only performed four degrees higher, but the high *F*-horns have also a more clear and firm species of sound, than the more dull and low *C*-horns.

It will readily be perceived, even from the nature of the accidental ground of difference, that the character which this or that key assumes, perhaps from the peculiar nature of wind instruments, may be exactly the reverse of that which the nature of stringed instruments imparts to it. Thus the latter, e. g. sound more sharp and clear in *D*-large, than they do in *E*♭-large; while, on the contrary, *E*♭-horns and *E*♭-trumpets sound more sharp and clear than *D*-horns and *D*-trumpets, &c.; and these different mixtures and variations have the effect to impart an individuality of character to the keys in a great variety of ways.

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* It is perceived that Italic letters are very abundantly used both in this and in the foregoing sections, as well as in other parts of the work, to denote mere *single tones*, and not exclusively to designate *keys*. Such a usage, however, need never mislead the reader, because the connection in which these letters occur will always at once determine whether they are to represent single tones or keys. TR.

§ 183.

What has thus far been said may be sufficient to furnish, by way of anticipation, some general hints as to the manner in which, partly from the nature of our system of musical temperament and from the unequalized variations of temperament—unequalized too in various ways in the case of different species of instruments, partly from the diversities existing in the character of sound and from the countlessly varied combinations and mixtures of the peculiarities of the first and second species meeting together in this or that key,—I say all these accidental circumstances may suffice to furnish a general outline of the source whence arises that remarkable difference which every musician knows to exist between any one key and every other.

A more particular and intimate acquaintance with this subject is afforded by a knowledge of the nature of our different musical instruments; and this will occur in *the doctrine of the material media of the art*, which is to appear in the sequel of this Theory, and of which broken fragments have been printed in *the Encyclopædia of the Arts and Sciences, by Ersch, article: wind instruments, bowed instruments, &c.*, as also at an earlier period on several pages of the Leipsic Musical Gazette, for the years 1816 and 1817, as well as here in irregular scraps and in very broken connections.

CHAPTER IV.

MODULATION.

DIVISION I.

IDEA.

§ 184.

We have thus far seen, how tones on the one hand form themselves into single series, and on the other connect themselves into harmonies, and how several harmonies belonging together form keys.

That arrangement or structure of successive combinations of musical tones by which the sensation of a particular key, and particularly of one key at one time and of another key at another time, is excited in the ear, and by which the ear, when once brought into this state of attunement, is either retained in it, or is removed from it by passing from one key to another, we call *modulation.*

DIVISION II.

MODULATION IN THE KEY,—MODULATION OUT OF THE KEY.

§ 185.

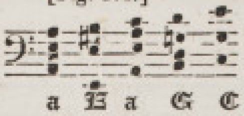
Modulation naturally falls, according to the foregoing definition, into two principal species; namely, according as the ear is kept attuned to one key, or is changed from this state of attunement from one key to another.

That modulation in which a composition continues in one and the same key, so that the ear remains uninterruptedly in the state of attunement once assumed, is denominated *modulation in the key*, and sometimes also *modulation in the scale, or modulation appropriate to the scale.*

But that species of modulation in which, after the ear had become attuned to a particular key, it [the ear] is by some means led to the perception of another key, is termed *modulation out of the key*, or *digressive modulation*, and the composition is said *to digress into a new key* or *to make a digressive modulation into a new key.*

Digressive modulation is therefore a changing of the attunement of the ear from one key to another, or the succession of one key to another, or briefly the entrance of a new key. Thus e. g. in the following set

[Fig. 174.]



which commences in *a*-small, the three-fold harmony of 𝔊 afterwards comes in; but as the latter is not appropriate to the key of *a*-small, it must of course belong to some other key; and accordingly by means of it a digressive modulation takes place, and the step from the third harmony to the fourth is *a modulatory harmonic progression out of the key.*

I will here remark, in passing, that, according to the usage of many musical writers, the word *modulation* is synonymous with what is here called *digressive modulation* or *modulation out of the key*, and that the latter species alone is called *modulation;* and thus, with these writers, *to modulate* is *to pass out of the key.*

§ 186.

(A.) WHOLE AND HALF DIGRESSIVE MODULATION.

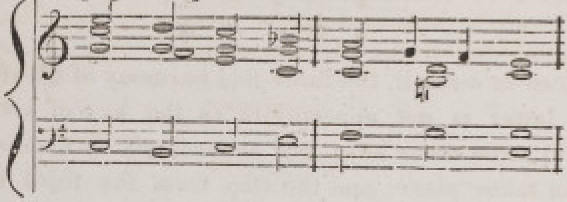
A digressive modulation either *wholly* erases the impression of the preceding key and stamps the new key *perfectly* upon the ear, or it does *not.*

If the impression of the foregoing key is thus *entirely* eradicated from the ear and the latter has become so *perfectly* transferred into a state of attunement to the new key that it wholly forgets the former and becomes properly allied to the latter; if the new key is thus introduced as a new *principal person*, who throws the former one entirely into the shade, supplants him and causes him to be forgotten, diverts the entire interest to himself and firmly seats himself on the tonic throne;—such a digressive modulation is with propriety called a *perfect* or *entire* one, and equally well also *a transition* into a new key.

But if it is of such a species that it does not entirely expunge the impression of the former key from the ear, if it does *not perfectly* stamp a new attunement upon the ear, but still leaves the feeling of the foregoing key more or less impressed upon it; if it introduces the new key, not so much as a principal person, but rather only, so to speak, as a secondary or subordinate character, just to play a short scene;—such a digressive modulation is properly called an *imperfect one* or a *half*-digressive modulation. A case of this kind appears less like an actual and a formal deviation from the key, than as a slight allusion to a foreign key, as a transient digression, a mere momentary stepping aside into a foreign realm of tones, as a slight act of perfidy towards the previous key, as an episode briefly hinted at in passing. (Many call this species of digressive modulation *accidental*, and also *transient*.

As an example of such a species of modulation, we may take the following passage—fig. 175, *i.*

[Fig. 175. *i.*]



The passage proceeds from *C*-large, or, in other words, is written in the large key of *C*. In the sequel, the harmony $\mathfrak{C}^7$ is introduced—a harmony foreign to the *C*-scale, and has the effect to produce a digressive modulation; but still the latter is so imperfect that it does not expunge the impression of the key of *C*, but on the contrary, one eventually feels himself perfectly at home again in this key.

We shall find in the sequel, that many digressive modulations are *so very* transient that they scarcely deserve the name, since they as it were only momentarily advert to a new key, while the ear at the same time does not cease for a moment still to perceive the former as *the principal key*.

A definite line of distinction, however, between the so called whole and half digressive modulations cannot be drawn, because the distinction consists in the more or the less, which is, from its own nature, capable of an endless variety of gradations, between which there is no positive limit.

§ 187.

(B.) LEADING CHORD,—LEADING TONE.

Every harmony by which the ear is transferred into a new state of attunement, by which the ear is led away from the previous key into another, may be called *a leading chord;* and thus every harmonic combination may be so called which belongs to a key different from that of its immediate predecessor.

According to our mode of designation, therefore, every chord whose Roman numeral is preceded by a new Latin* letter, is a leading chord.

If the leading chord is one that does not occur in the previous key as a proper member of it, so that one or more of the tones of which it consists occurred in the previous key as tones foreign to its scale (§ 140*,) then such tone or tones may be called *leading tones.* A leading tone is, accordingly, a tone of a leading chord which [tone] is foreign to the scale of the preceding key: e. g. in the above fig. 175, *i*, the tone *b*♭ occurs, in the first instance, as leading tone; and afterwards the tone *b* occurs in the same character.

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* A *Latin* letter is the letter commonly used in our print, and is more usually called a Roman letter, but the appellation *Latin* is here employed for distinction's sake, the term *Roman* having just preceded in another application. TR.

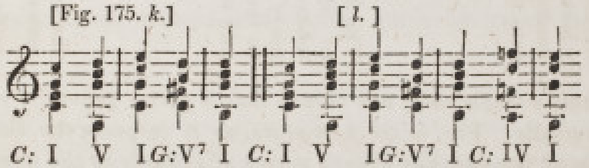
We shall however find in the sequel, that such leading tones do not occur in every leading chord, or, in other words, that very many digressive modulations take place by means of chords that are to be found in the previous key itself,—as well as also that tones foreign to the harmony sometimes deserve this appellation in a particular respect. (§§ 203, 228, 380.)

REMARK.

In no case are composers less agreed or less consistent, than they are in respect to the use of the appellations *leading chord* and *leading tone*. (Comp. § 128 and 140*.)

They frequently apply the term *leading chord* only to the dominant four-fold chord of the new key,—probably because most of the digressive modulations are usually made by means of it, on account of its being less equivocal than any other harmony (§ 158,) and because it is ordinarily followed by the tonic harmony, as e. g.

[Fig. 175. *k*.] [*l*.]



𝕮 𝕯7 𝕲
C: I - - - - G: V7 - - - - I

The previous tonic harmony of the key of *C*-large, from which a digressive modulation is made by the

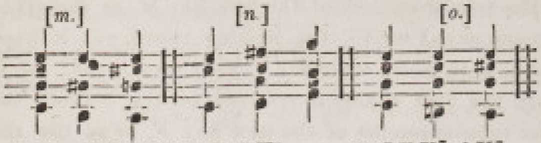
dominant chord of the new key *G*-large; —which is immediately followed by

the new tonic harmony 𝕲.

But it does not necessarily follow that because such is the case in this example, it must therefore *always* be so. For, in the first place, as we shall see in the following sections, a multitude of digressive modulations are made, *not* by the dominant chord of the new key, but by other chords of that key. Thus, e. g. in fig. 175, *l*, above, a digressive modulation is indeed made in the second measure into *G*-large by means of 𝕯7 as V7 of *G*, but back again into *C* in the third measure by means of 𝕱 as IV of 𝕮. However appropriate therefore the appellation *leading chord* may be to the principal four-fold chord of a new key, still it is by no means appropriate to this exclusively.

Secondly, in cases where a digressive modulation is made by V or V7 of the new key, this V or V7 is not always followed by the new tonic harmony, as e. g. in fig. 175, *m*:

[*m*.] [*n*.] [*o*.]



The fact that composers are in the habit of calling passages of this sort elliptic or catachrestic harmonies, anticipations, &c. does not, on the point *now* in question, alter the case at all.

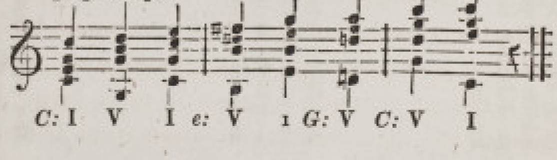
The same species of inconsistency is, moreover, frequently to be met with in the current practice of calling only the large seventh of the new key [the so called subsemitonium modi, or in other words, the fundamental third of the new V or V^7,] *the leading tone* or *leading note*,—probably because in many cases where a digressive modulation is made by the dominant harmony of the new key, this subsemitonium is the note foreign to the previous scale and the note which the new V or V^7 converts into the leading chord foreign to the scale,—and because this subsemitonium is usually followed by the new tonic note; (Comp. the above fig. 175, *k*, p. 331.)

𝕮 *C*: I - - -	𝕯^7 *G*: V7 - - -	𝕲 I
The previous tonic harmony 𝕮, from which a digressive modulation is made into the key of *G*.	The dominant chord of the new key, whose subsemitonium $f\sharp$ was foreign to the previous scale and is succeeded in	the following harmony by the new tonic note $\bar{g}$.

But this again is only a single case; one indeed that is pretty generally realized, but yet by no means universally. For, *in the first place*, as it respects the circumstance that the subsemitonium of the new key always moves afterwards to the new tonic, nothing is less *universally* true than this. Look at a single example. (Fig. 175, *o*, p. 331.)

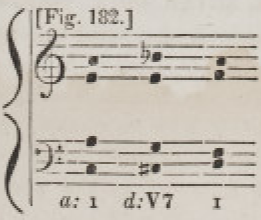
Secondly, the subsemitonium of the new key is not *the only* tone foreign to the scale and *the only* tone that constitutes the new V^7 a leading chord foreign to the scale, as e. g.

[Fig. 180.]



The fourth chord here contains *two* tones which render it a leading chord, so that both of these have an equal claim to the appellation *leading tone:* these tones are the third and the fifth. The same is the case with the two tones $\bar{b}\flat$ and $c\sharp$ in fig. 182,—&c.

[Fig. 182.]



And, *thirdly*, if the subsemitonium of the new key is, as remarked above, *often* the tone which renders the new V or V^7 the leading chord, yet it happens equally often that it is *not* so; as e. g. in many examples already mentioned; see figs. 174 and 175 *i*, pp. 329 and 330. In the last example referred to, the leading tone foreign to the scale is not *e*, as the subsemitonium of the new key *F*, or as the third of the leading principal four-fold chord 𝕮7, but it is *b*♭, the seventh of this 𝕮7-harmony;—and so also in the first example, the leading tone in question is not *b*, but *g* as the fifth. We are here therefore brought to the following result: the subsemitonium of the new key does indeed frequently merit the appellation of *leading tone;* but it not only does not deserve it exclusively, but in some cases has no claim to it at all.

Others again bestow the term *leading tone* upon all those tones "which, in case we strike upon them in a melody under certain circumstances, cannot, without offending the ear, move in any other way than into the degree lying immediately above or below them."* Thus leading tones would be, according to the definition, not only "all accidentally *elevated* or *depressed* tones of the key," but every interval in general which has not a perfectly free progression, and hence all the sevenths,—not merely those of the dominant,—and all transition tones and suspensions, &c.

The more musical writers differ from one another in the use of the expressions *leading chord* and *leading tone*, the more exactly and firmly shall I abide by that meaning of the term which was assumed in § 187. (Comp. also § 140.*)

§ 188.

(C.) DIGRESSIVE MODULATION INTO THIS OR THAT INTERVAL.

According as, in the case of a modulation into a new key, the tonic note of the latter becomes removed from the previous tonic to the distance of a second, a third, a fourth, a fifth, &c. it is called a digressive modulation into the key of the second, into the key of the third (or mediant, § 50,) into the key of the fourth (the under dominant,) into the key of the fifth (the dominant,) &c. If e. g. in a composition which proceeds from *C*-large, or, in other words, is written in *C*-large, a harmony occurs which announces itself as belonging to the key of *D*-large or *d*-small, we say, a digressive modulation has taken place into the large or small key of *the second*, because the tonic D makes the interval of a second with the previous tonic C,—a modulation too into the key of *the large* second, because it is a large second from C to D. In a like sense, the digressive modulation from *D* or *d* into *F* or *f* is said to be made into the large or the small key of the *small third;*—from *D* or *d* into *G* or *g*, into *the under dominant* or *fourth;*—from *G* or *g* into *D* or *d*, into *the dominant fifth*, or *under fourth;*—from *D* or *d* into *B* or *b*, into *the large sixth* or *small under third;*—from *C* or *c* into *B*♭ or *b*♭, into *the small seventh* or *large under second*, and the like.

§ 188*.

One can procure a sensible representation of the above mentioned different digressive modulations, by drawing a clasp or brace between the Italic letters (§ 153) which denote the key, and by writing either within or under it the figure of the interval, as follows:

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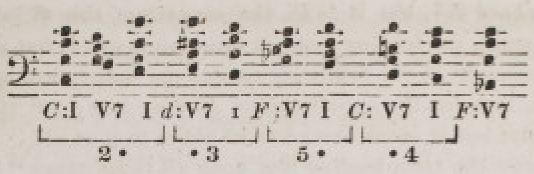
* *Sulzer*, *Koch*, and others.



The step from the third chord to the fourth is a digressive modulation from *C* to *d*, and thus into the key of the *second* degree (*large second*) of the previous scale. A digressive modulation then takes place again in the sixth chord, from this new key *d*-small into *F*-large, and thus into the key of *the third* of the previous tonic *d* (from D to F is a small third;)—then again a digressive modulation takes place from *F*-large to *C*-large, and accordingly into *the fifth* of F,—and finally from this *C*-large into *the fourth*, *F*-large. (Comp. § 232.)

If we inquire, how many different digressive modulations in this sense are conceivable, or, in other words, into how many other keys a modulation can be made from any one given key, we shall find 46 different ways of thus modulating. We can modulate, namely,

(*a.*) Either from a large key into one of the other large keys, as e. g. from *C*-large into *C*♯-large, or into *D*-large, into *E*♭-large, into *E*-, *F*-, *F*♯-, *G*-, *A*♭-, *A*-, *B*♭-, or *B*-large:—these all together amount to eleven different digressive modulations,	11
(*b.*) Or from a large into one of the twelve small keys, as e. g. from *C*-large into *c*-small, or into *c*♯-small, or into *d*-, *e*♭-, *e*-, *f*-, *f*♯-, *g*-, *a*♭-, *a*-, *b*♭-, or *b*-small; and these make twelve additional digressive modulations,	12
(*c.*) Or from a small key into one of the twelve large keys, as e. g. from *a*-small into *A*-, *B*♭-, *B*-large, &c.,—making again twelve digressive modulations,	12
(*d.*) Or finally from a small key into one of the other small keys, as e. g. from *a*-small into *b*♭-, *b*-, *c*-, *c*♯-small, &c.,—making again eleven modulations.	11
Total,	46

In other words: we can digressively modulate from each large key into 11 other large keys and into 12 small keys, and thus in general into 23 other keys; and in like manner we can modulate from each small key into 11 other small keys and into 12 large ones, and thus in general again into 23 other keys. These twice 23 make 46 different principal species, each of which differs essentially from the others. (*Vogler* has evidently overlooked two of these possible variations, since he enumerates only 44 of them in § 99 of his treatise on composition, [*Tonſetzkunst*].)

§ 189.

(D.) THE CHARACTERISTIC DIFFERENCE, AND THE COMPARATIVE MERITS OF MODULATION IN THE SCALE AND MODULATION OUT OF THE SCALE.

The characteristic difference between modulation in the scale and modulation out of it, consists in general in the fact, that the former has more unity, the latter more variety; in the former there is more tranquillity, uniformity and equanimity, in the latter more change, restlessness and agitation; the latter is therefore to be regarded as being as it were only the spice or seasoning of the former. We shall say more on this subject in connection with the doctrine of harmonic successions in the case of digressive modulation.

But as it respects particularly the characteristic difference and the comparative merits of the different digressive modulations according to the classification just given above, we can only say in general, that modulation into the nearly related keys are usually more smooth, while, on the other hand, modulations into the far remote keys are, generally speaking, more striking, harsh and pungent.

The latter, however, are not for this reason less good than the former For, on the one hand a due musical expression sometimes requires the really sharp, pungent and striking; and, on the other hand, even modulations into the widely remote keys can often, by favorable circumstances, be so very much softened and so easily introduced, that they lose all their harshness.

REMARK.

Our theoretical writers, who seem forever to delight in *prohibitions*, are not wanting in the explanation of at one time this and at another time that modulation as forbidden. Indeed it would be easy to furnish a considerable gallery of such prohibitions. Thus e. g. many lay down the law, that no digressive modulation must be made except into the most nearly related keys. *Vogler*,* among others, says: "There is only a single but yet universal law for digressive modulations, and it is, that no degree must be skipped over which is at the distance of a sharp or a flat in the signature."

One really does not know what to say of such prohibitions,—prohibitions which no composer ever thought of observing, and whose inventor himself never once conceived the idea of following them, and of which in general it is not to be conjectured for what end they were given, if one has ever heard and felt with what excellent effect, in the classic works of the best musical writers, and even e. g. in *Vogler's* themselves, modulations often take place immediately into the most remote keys. To adduce particular examples, would be indeed superfluous! If however one would like to see some such, let him just direct his view to one borrowed from *Vogler* himself.† Fig. 132, p. 213, (§ 91).

We shall have occasion hereafter, to say a word or two more on this subject, in connection with the doctrine of the modulatory plan of a piece of music in general.

Compare also the Remarks on §§ 99, 281 and 301.

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* In his *Tonwissenschaft und Tonsetzkunst*, § 64. *der Tonsetzkunst* S. 70.

† 1. Bd, § 91.

DIVISION III.

ATTUNEMENT OF THE EAR TO A KEY.

§ 190.

Having now settled the idea and the species of modulation, we will attend to the question: *How and by what means, and according to what laws, is the ear determined to perceive this or that harmony as the tonic harmony?* or, in other words: *by what cause is the ear, in each particular case, attuned to this or that key*, or *changed in its state of attunement from one key to another?* or in general: *as what and as belonging to what key does each particular combination of tones present itself to the ear?*

The principles relating to this subject are quite simple, for they depend upon *the assumption of the greatest possible simplicity*, namely upon the leading fundamental principle, that

The ear explains to itself every combination of tones in the most simple, most natural and most obvious manner.

For the purpose of developing this position in its appropriate results, we will divide the above question into two parts, namely:

(*A.*) By what means is the ear at first attuned to a particular key?

(*B.*) As what does the ear, when once attuned to a particular key, receive each particular combination of tones that presents itself to it?

(A.) THE FIRST ATTUNEMENT OF THE EAR.

§ 191.

Generally speaking, the perception of a particular key arises from the introduction of harmonies which are peculiar to that key. (§ 122.)

Thus, in particular, it is natural, that, in the beginning of a piece of music, when the ear is as yet unpreoccupied with any key, it should be inclined to assume as the tonic harmony any large or small three-fold harmony that first presents itself. If e. g. a piece of music commences with the large three-fold harmony $\mathfrak{E}^{\flat}$, the ear assumes this chord as the tonic harmony—as I, and becomes attuned to $E^{\flat}$-large. Hence every piece of music usually begins with the tonic harmony.

We will hereafter consider some cases of the commencement of a piece of music with other harmonies than the tonic, in connection with the doctrine of the modulatory structure of pieces of music.

(B.) CONTINUED ATTUNEMENT AND RE-TUNEMENT OF THE EAR.

(1.)

THE PRINCIPLE OF INERTIA.*

§ 192.

The ear once attuned to a particular key does not change its state of attunement into that of another key without a sufficient cause.

From this principle, which is as it were the musical *law of inertia* (*principium inertiae*,) or, if you please, *the principle of the sufficient cause*, when applied to the attunement of the ear, flow the following additional results:

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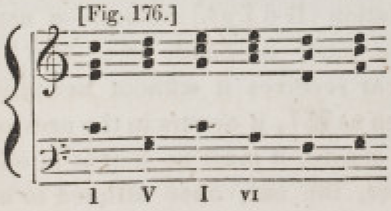
§ 193.

(*a.*) *The ear ordinarily receives every combination of tones* which, considered by itself, occurs in the previous key, as actually being a combination belonging to the scale of that key, and not as a digressive modulation.

When e. g. the three-fold harmony of 𝔈 occurs in the passage in *a*-small, fig. 174, p. 329, which [harmony] (according to table (*a.*) following § 155) may be either IV of *B*-large, or VI of *g*♯-small, or I of *E*-large, or V of *A*-large or of *a*-small, the ear, attuned as it is to *a*-small, receives it only as being the last.—And when, in like manner, the small three-fold harmony 𝔞 occurs in a passage in the key of *C*-large, fig. 176,

[Fig. 176.]



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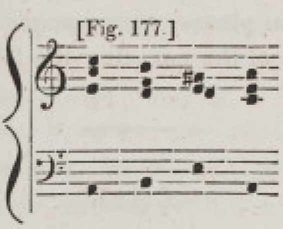
* The word "*inertia*" is used in Natural Philosophy to signify that property of a body whereby it is indisposed to change its state, whether that state be one of rest or of motion; and the term is here used in a perfectly similar sense, i. e. to signify a predisposition in the ear not to change its state, whatever that state may be,—or, in other words, an inclination to retain its present state, in any case whatever; so that if it has e. g. once conceived the impression of a particular key in music, it is inclined to retain that impression and to hear nothing that is counter to it; it is naturally unwilling to hear any such combination of tones as would compel it to change its state.—So it is that the human ear exhibits the principle of *inertia* in a manner perfectly analogous to that in which the principle is exhibited in unorganized matter generally.—The Latinized character of the word, however, would exclude it from the translation, were it not for the fact that we have no other word, *appropriated to this signification*, that expresses the idea intended with equal clearness. TR.

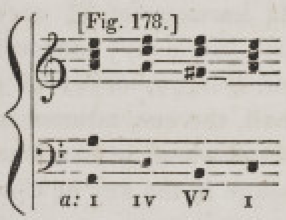
—a harmony which may be at one time that of the sixth degree in *C*-large, (*C*: vi,) at another time that of the second degree in *G*-large, (*G*: ii,) at another time still, that of the third degree in *F*-large, (*F*: iii,) and again that of the fourth degree in *e*-small, (*e*: iv,) and yet again the tonic harmony in *a*-small, (*a*: i;) the ear, in preference to understanding it as i of *a*-small, or as ii of *G*-large, or as iii of *F*-large, or as iv of *e*-small, receives it as vi of the preceding key, *C*-large.

If the harmonic combination [b d f,] which may depend either upon the harmony °$\mathfrak{b}$, belonging to *a*-small, or upon the four-fold harmony $\mathfrak{G}^7$, appropriate to *C*-large or *c*-small, occurs in a passage in the key of *a*-small,—fig. 177,


[Fig. 177.]

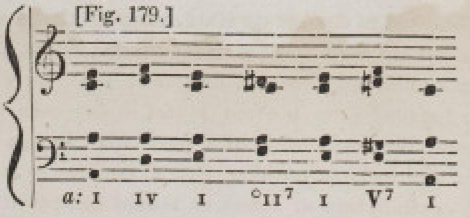
the ear, for the reason already stated, always takes such combination rather as °$\mathfrak{b}$ than as $\mathfrak{G}^7$.

So likewise, if in a passage in *a*-small, fig. 178,


[Fig. 178.]

the harmonic combination [B d f g♯] occurs,—a combination which is enharmonically equivocal, since it sounds like [B d f a♭] or [B d e♯ g♯] or [c♭ d f a♭]; still the ear receives it without hesitation in the first of these four senses, since, taken as $\mathfrak{E}^7$, it occurs in the previous key *a*-small, whereas, taken in the other senses, it must be sought in other keys.

In the same manner, the ear, once attuned to *a*-small, does not, as a general rule, understand the enharmonically equivocal chord [f a c d♯], in fig. 179,


[Fig. 179.]

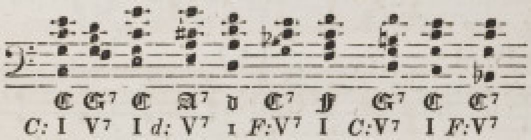
as [f a c e♭]; although the latter sounds like the former; for, the fundamental harmony of [f a c d♯] is °$\mathfrak{b}^7$, belonging to *a*-small as °ii^7, (§ 148, No. 7,) while the fundamental harmony of [f a c e♭] would be $\mathfrak{F}^7$, which is not to be found in *a*-small, but only in *B*♭-large or *b*♭-small.

§ 194.

(*b.*) *If, on the contrary, the ear, attuned to a particular key, is met by a combination of tones which did not occur in the previous key*, and which it cannot of course possibly explain as belonging to the previous key, and which it must therefore explain as a digressive modulation, then *it regards such combination of tones as belonging to that key which stands in the nearest and most intimate relationship to the one to which it was previously attuned;* or, in other words, it regards such a combination of tones as a digressive modulation, but yet as a modulation as little remote as possible.

Thus e. g. in the passage in fig. 180, p. 332, the three fold harmony 𝕭 occurs: this is found in *F*♯-large, on the fourth degree, as *F*: IV,—in *B*-large, as I,—in *E*-large, as V,—in *d*-small, as VI, and in *e*-small, as V. But, among all these keys, the one nearest related to the previous key *C*-large, is *e*-small; consequently the ear will here receive the harmony 𝕭 as *e*: V, as the dominant three-fold chord of *e*-small, and will not change its state of attunement into the still farther remote keys *F*♯-large, *E*-large, or *d*♯-small. Or, if the harmony 𝕯 occurs in a passage which previously ran in *C*, the ear will perceive this harmony, not as I of *D*-large, not as IV of *A*-large, not as VI of *f*♯-small, and not as V of *g*-small, but most naturally as V of the nearest related key, *G*-large.

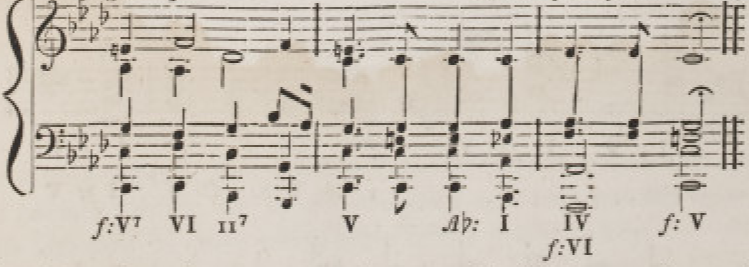
It is on the ground just stated, that, in the example adduced in § 188*,


𝕮 $\mathfrak{G}^7$ 𝕮 $\mathfrak{A}^7$ 𝔡 $\mathfrak{C}^7$ 𝕱 $\mathfrak{G}^7$ 𝕮 $\mathfrak{C}^7$
C: I V^7 I d: V^7 I F:V^7 I C:V^7 I F:V^7

the principal four-fold harmony $\mathfrak{A}^7$ appears to the ear as a digressive modulation from *C* into *d*,—the following four-fold chord $\mathfrak{C}^7$ as a farther digressive modulation into *F*,—the following $\mathfrak{G}^7$ as a digressive modulation back again into *C*, and the still following $\mathfrak{C}^7$ as a repeated digressive modulation into *F*.

We, in like manner, recognize in fig. 174, p. 329, (§ 193,) transitions from *a* into *C*, and in fig. 181, below, a digressive modulation from *f* into *A*♭,—&c.

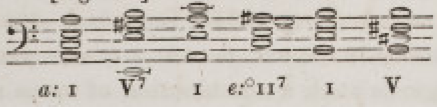
[Fig. 181.] From my Requiem.



So likewise, when in a passage in *a*-small, the harmonic combination [c♯ e g b♭] occurs, fig. 182, p. 332,—a combination which sounds exactly like [d♭ e g b♭] or [c♯ e g a♯] or [d♭ f♭ g b♭]; the ear assumes it, without hesitation, as c♯ e g b♭], i. e. as the principal four-fold chord $\mathfrak{A}^7$ on the fifth degree of the key *d*-small, [as *d*: V]—the key nearest allied to the previous key *a*-small, and not as $\mathfrak{C}^7$, or $\mathfrak{F}^{\sharp 7}$, or $\mathfrak{B}^{\flat 7}$; for, taken in these capacities, we should have to look for its seat or situation in more remote keys. (Compare § 85, and see fig. 120, p. 202.)

So also, in fig. 183,

[Fig. 183.]

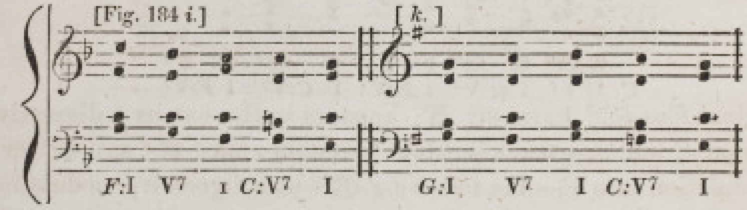


the ear, once attuned to *a*-small, always understands the chord [c e g a♯] or [c e g b♭], rather as [c e g a♯], and thus as the four-fold chord with small fifth on the second degree of the near related key *e*-small, [as *e*: $°\text{II}^7$,] than as [c e g b♭], which last combination would have to be regarded as the principal four-fold chord—as V^7—in the more remote keys *F*-large or *f*-small.

Or if the chord [g b d f] or [g b d e♯] occurs in a passage that was previously in *g*-small, (see fig. 132, p. 213, and compare § 91, at B,) the ear will obviously take it for the former—for $\mathfrak{G}^7$, and thus for *C*: V^7, rather than for $°\mathfrak{e}^{\sharp 7}$, which would be $°\text{II}^7$ of the much more remote key *b*-small. A still farther confirmation of the fact that the fundamental harmony of this example is not $°\mathfrak{e}^{\sharp 7}$, but $\mathfrak{G}^7$, will appear farther below,—(§ 208 at the end.)

In like manner, the ear recognizes the chords [f b d a] in fig. 184, *i.* and *k.* below,

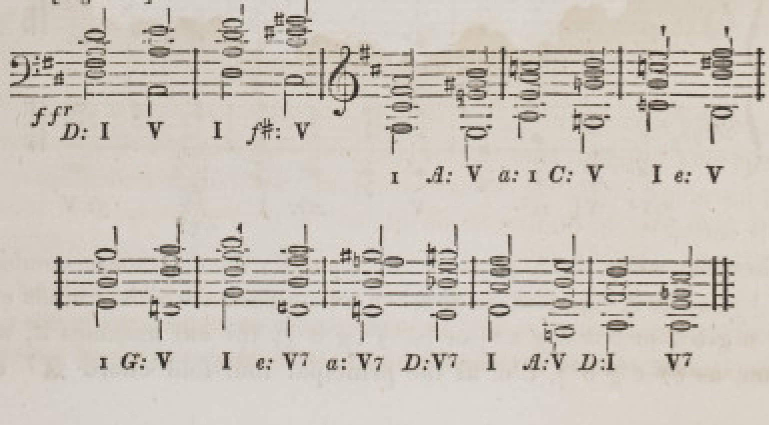
[Fig. 184 *i.*]



as V^7 of the key *C*-large—the key nearest related to the original key *F*-large or *G*-large, but not as $°\text{II}^7$ of the key *a*-small, (related to *F* or *G* in the second degree.)

According to the principles thus far developed, the digressive modulations in fig. 185 will also admit of an easy explanation.

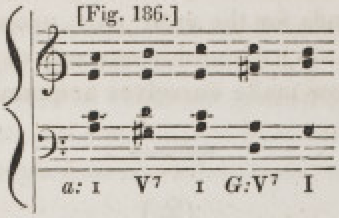
[Fig. 185.]



§ 195.

Cases may occur in which a newly introduced chord might, in itself considered, be found in *two* keys which are *both equally near* related. Thus e. g. in the following passage in *a*-small,

[Fig. 186.]

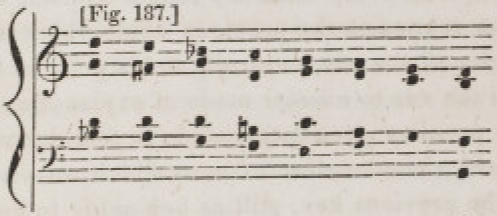


it would be doubtful in itself, whether the fourth chord is to be regarded as V^7 of *g* small or as V^7 of *G*-large, because *g*-small is as near related to *a*-small as is *G*-large; that is to say, both are related to it in the second degree. (§ 178.)

In cases of this kind, when the relationship is equally near,* the decision is made by the consideration of the greater *intimacy* of the relationship. Now since the relationship of *a*-small to *G*-large is more intimate, though indeed not more near, than it is to *g*-small (§ 171,) the ear takes this $\mathfrak{D}^7$ as *G*: V^7, rather than as *g*: V^7.

So likewise in fig. 187,

[Fig. 187.]



the ear might be somewhat in doubt, whether the fourth chord is to be regarded as $^\circ\text{II}^7$ of *a*-small, or as V^7 of *C* large, inasmuch as *a*-small is as nearly related to *g*-small as is *C*-large, namely in the second degree (§ 178.) But since the relationship of *g*-small to *C*-large is more intimate, (§ 171,) though not indeed more near, than that between *g*-small and *a*-small, so the ear perceives the chord [f b d a] as the principal four-fold chord of *C*-large —as *C*: V^7, and not as the four-fold chord of the second degree of *a*-small with small fifth,—i. e. as $^\circ\text{II}^7$.

§ 196.

But it may happen, that the two different keys in which the newly introduced harmony might be found, are both not only equally near, but also equally intimate, in their relationship to the previous key.

---

* *i. e.* Near, in the sense of being in the first degree, the second degree, &c. But it will be recollected that not all the relationships which are alike in this respect are equally *intimate*. See §§ 171 and 178 above referred to. Tr.

Such is the case, e. g. when the harmony [e g b^b c♯ or d^b] occurs in a passage in *C*-large,—a harmony which can be either a principal four-fold chord of *d*-small, or of *f*-small, both of which keys are alike nearly and alike intimately related to *C* large;—or, when the harmony [b d f g♯ or a^b] occurs in the same key,—a harmony that may be either V^7 of *a*, or of *c*.

In such cases it depends for the most part upon *circumstances*, whether the ear shall understand such a chord in one way or in another. With these circumstances we will now make ourselves acquainted.

(2.)

STRONGER REASONS, WHICH REMOVE THE NATURAL INERTIA OF THE EAR.

§ 197.

The principle which we have been unfolding from § 190 to the present place, to wit, that the ear once attuned to a key is not changed from that state of attunement *without a sufficient reason*, and therefore that it (*a.*) inclines to regard every combination of tones that occurs and that is at the same time to be found in the preceding key, as really belonging to that key, and that it (*b.*) ascribes every harmony that is in itself foreign to the scale to the key nearest related to the previous one,—this principle, as the pure result of the inertia of the ear, naturally holds good so long as no *stronger reasons* determine the ear to *another* mode of explanation.

But sometimes peculiar circumstances do in fact determine the ear

(*aa.*) To regard a combination of tones which, taken by itself, might be found indeed in the previous key, still as belonging to another, and also

(*bb.*) To regard a combination of tones, in itself foreign to the scale, but yet occurring in a nearly related key, still as a member of a far more remote key.

These particular circumstances are as follows:

(*a.*) *Particular characteristics of a combination of tones occurring in a piece of music.*

§ 198.

A combination of tones sometimes bears on itself a characteristic mark which indicates that it does not belong to that key to which it should otherwise, according to the mere law of inertia, be ascribed.

That is to say, we know that certain transformations pertain only to certain harmonies of particular degrees.

Hence if

(*aa.*) A harmony appears which, though in itself considered it may indeed be found in the previous scale, still carries with itself a transformation of a particular species which it can have only as a member of another key, —a combination of tones thus characterized as belonging to another key, cannot be regarded by the ear as belonging to the previous key and must accordingly be perceived as a modulation.

And if

(*bb.*) A harmony occurs which is not itself indeed in the previous key, but yet is found in a *nearly* related key, and which involves in itself a transformation of such a species as could not accrue to it except as a member of a *more remote* key;—then the ear must regard this harmony, even though it is to be found in a key more nearly related, still as a member of a harmony more remote.

We will illustrate all this by examples.

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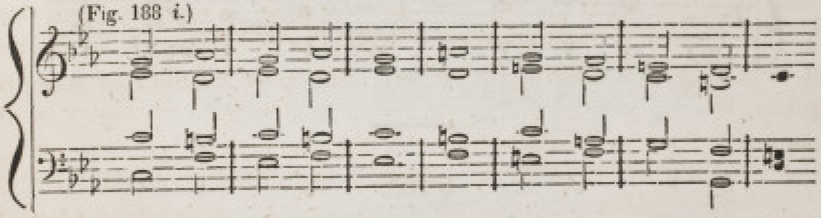
§ 199.

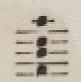
(*I.) We know that *the addition of a large ninth* takes place only in the dominant harmony of a large key, and that thus a principal four-fold chord with a large ninth can only be V^7 of *a large key.* (§ 147, No. 12; § 148, No. 9.)

(*aa.*) Hence, if e. g. in a passage which was previously in *c*-small, the harmony $\mathfrak{G}^7$ with a large ninth should be introduced, then, while it is true indeed that the harmony $\mathfrak{G}^7$ might, in itself considered, be found in the previous key of *c*-small, still the ear cannot regard this $\mathfrak{G}^7$, *when thus characterized*, as belonging to such previous key, because there is no $\mathfrak{G}^7$ with a large ninth in *c*-small. Let us analyze the example in fig. 188, *i.*


(Fig. 188 *i.*)

It commences in *c*-small, and the first three measures proceed uninterruptedly in this key. But not so the fourth:

The combination $[f\ \bar{b}\ \bar{\bar{d}}\ \bar{\bar{a}}]$ or



is namely either . . . . $\mathfrak{G}^7$,

and the $\mathfrak{G}^7$ harmony is in itself

either . . . . *c*: V^7,

or . . . . *C*: V^7;

or the above combination is . . . . $^\circ\mathfrak{b}^7$,

and in this capacity is either . . . . . . *a*: $^\circ\mathrm{II}^7$,

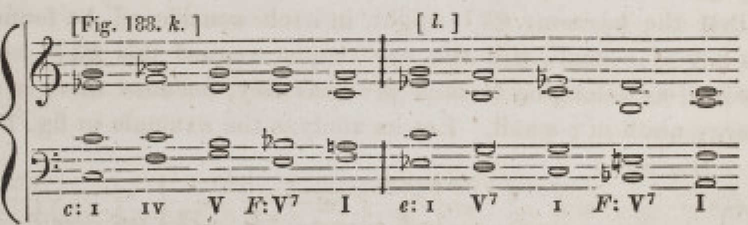
or . . . . *C*: $^\circ\mathrm{VII}^7$.

Now as what does it impress itself on the ear? In the first place, certainly not as *c*: V^7; for, a $\mathfrak{G}^7$ with a *large* ninth does not occur in *c*-small.

(§143, No. 9.) The choice therefore remains, either to take it as *C*: V^7, or as *a*: °II^7, or as *C*: °VII^7. But this option cannot be very difficult; for since the key *C*-large lies far nearer the previous key *c*-small, than does *a*-small, the combination will be taken as °VII^7 or V^7 of *C*-large, rather than as °II^7 of *a*-small, (§ 194,) and consequently the step from the third chord to the fourth is obviously a digressive modulation from *c* to *C*.—The chord in question, namely $[\bar{f}\ \bar{b}\ \bar{\bar{d}}\ \bar{\bar{a}}]$ will, in particular, impress itself on the ear rather as *C*: V^7, than as *C*: °VII^7, for the double reason that the principal four-fold chord is already in itself more familiar to the ear, as being one of *the most essential harmonies* of the key, than the more unusual secondary four-fold chord °VII^7, and particularly a principal four-fold chord in the third inversion with the omission of the fundamental tone and the addition of the large ninth is far more familiar than the harmony °VII^7, especially in the second inversion.

(*bb.*) Or, if the principal four-fold chord 𝕮^7, e. g. occurs in a passage which was previously in *c*-small,—a chord which is not to be found in *c*-small itself, but in the most nearly related key, *f*-small,—the introduction of this harmony would indeed indicate a digressive modulation, but still, according to the principle of inertia, only a modulation into the key *f*-small—a key most nearly related to *c*-small: but if the 𝕮^7 involves in it a large ninth, this harmonic succession cannot be regarded as a modulation merely into *f*-small, but must be taken as one into the more remote key *F*-large.

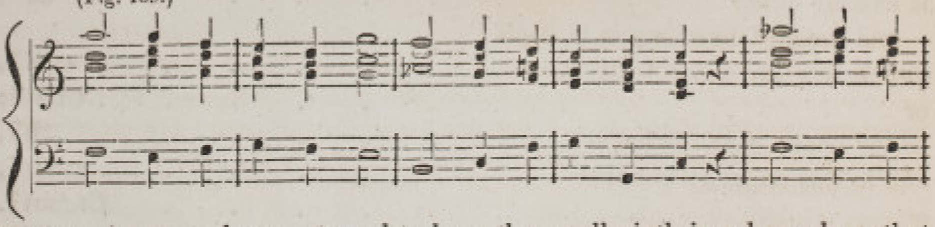
[Fig. 188. *k.*] [*l.*]



§ 200.

(* II.) *A small ninth does not announce the small key so distinctly as does the large ninth the large key ;* inasmuch as the dominant harmony of the *large* key not unfrequently occurs with the small ninth:

(Fig. 189.)



Our ear is so much accustomed to hear the small ninth in a large key, that it does not recognize it as a distinguishing characteristic of the small key, notwithstanding its immediate appropriateness to the small scale. (We shall hereafter repeatedly recur to this subject again.) Comp. also fig. 113, p. 208.

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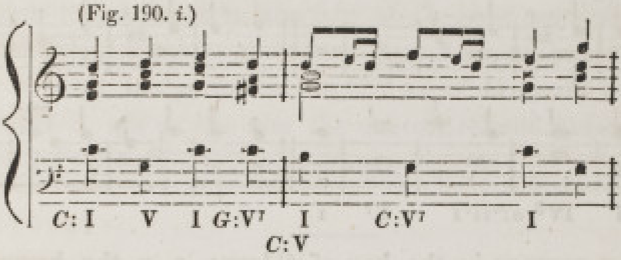
§ 201.

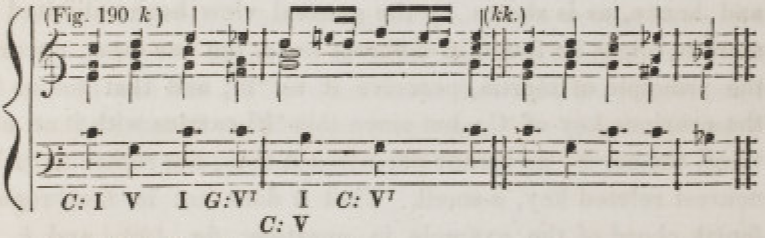
The principal four-fold chord with a small ninth very often occurs in such cases as the following:

(Fig. 190. *i.*)

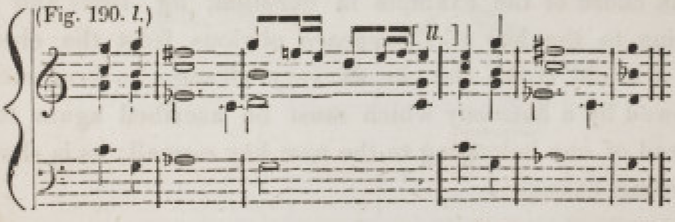


where a transient digressive modulation takes place from *C*-large into the large key of the dominant, into *G*-large, by means of the principal four-fold chord $\mathfrak{D}^7$, as the dominant harmony of *G*-large; as e. g. in fig. 190, *k* and *l*.

(Fig. 190 *k*)



(Fig. 190. *l.*)



The ear here receives the combination $[\bar{c}\ \bar{f}\sharp\ \bar{a}\ \bar{\bar{e}}\flat]$ or $[a\flat\ \bar{e}\flat\ \bar{\bar{c}}\ \bar{\bar{f}}\sharp,]$ notwithstanding the small ninth, as the dominant harmony of *G*-large, and not of *g*-small, as is very clearly seen in fig. 190, *kk* and *ll*, above. We shall consider the cause of this hereafter; (§ 209 and 211.)

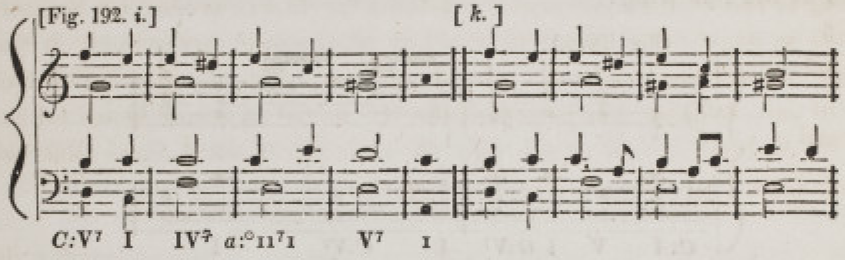
We take this occasion to remark, that if a digressive modulation is made from a large or a small key into the key of its dominant, by means of the dominant chord of the latter key, this chord is usually named, as being the dominant chord of the key of the dominant, *the transferring dominant chord, the dominant chord of transfer, the dominant chord of transition.*

In accordance with this usage, the introductory passage of this present section might be expressed thus: *The transferring dominant chord* or *the dominant chord of transition, in particular, very frequently occurs in large keys with a small ninth.*

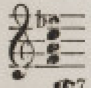
§ 202.

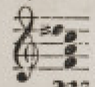
(*III.) We know that the arbitrary *elevation of the third* is appropriate only to the four-fold chord with small fifth *on the second degree of a small scale;* hence if the ear perceives a harmonic combination as a four-fold chord with a small fifth and an arbitrarily elevated third, it of course distinctly recognizes it as °ii^7, and not as °vii^7. The following examples will make this plain.

[Fig. 192. *i.*] [*k.*]



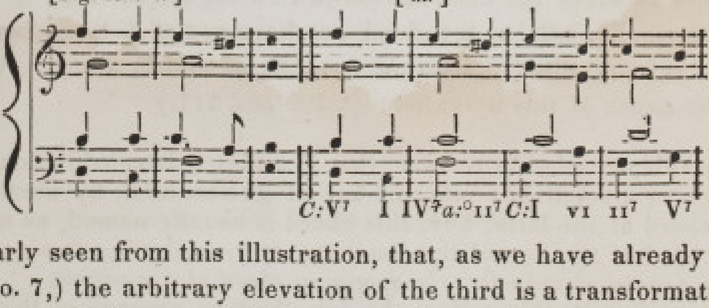
(*aa.) If in a passage in the key of *C*-large, e. g. the harmonic combination [F a c d♯] or [F a c e♭] makes its appearance,—a combination which may in itself be either the principal four-fold chord $\mathfrak{F}^7$, or (according to §89) °$\mathfrak{h}^7$ with an elevated third, or (according to § 94) $\mathfrak{B}^7$ with a lowered fifth,





and hence, as is shown by the general view here exhibited in the margin, might be found in different keys, the ear must, according to the principle of inertia, perceive it as °$\mathfrak{h}^7$, and that too as °vii^7 of the previous key of *C;* but since this °$\mathfrak{h}^7$ carries with it an elevated third, the ear by no means perceives it thus, but rather as °ii^7 of the nearest related key, *a*-small. That it does not in fact regard the fourth chord of the example in question, fig. 192 *i* and *k*, as belonging to the key of *C*, appears obvious from the circumstance that it would strike the ear as very strange, to hear such a chord followed by a harmony which must be ascribed again to *C*-large, instead of one belonging to the new key *a*-small; as is shown by the following example:

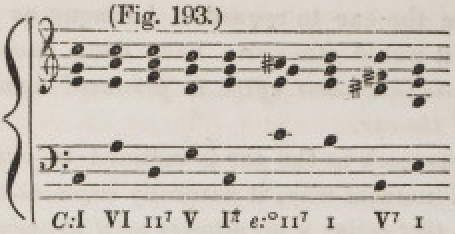
[Fig. 192. *l.*] [*m.*]

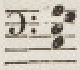


It is clearly seen from this illustration, that, as we have already remarked (§ 38, No. 7,) the arbitrary elevation of the third is a transformation appropriate only to the harmony of the second degree in a small key.

(*bb.) Or: if, in a passage in *C*-large, the harmonic combination [C e g a♯,] which is foreign to the scale, occurs as °$\mathfrak{f}^{\sharp 7}$ with an elevated third,

(Fig. 193.)



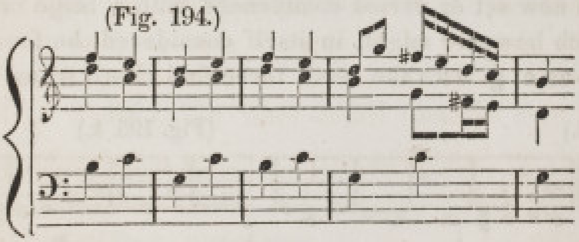


the ear cannot conceive of this combination as belonging to *G*-large, which is one of the most nearly related keys to *C*, though this harmony is in itself to be found in the key of *G*,—and accordingly it cannot regard this harmonic succession as a digressive modulation merely into *G*-large, but perceives the °𝔣$^{\sharp 7}$ as °II^7 of *e*, and hence takes this modulation, not as one into the nearest related *G*-large, but necessarily as one into the more remote *e*-small.

§ 203.

(*IV.) We have already, by way of anticipation, several times mentioned the fact, that *transition tones* may sometimes, in one way and another, point out the seat of a harmony, or show that it belongs to this or that key. (Comp. §§ 187 and 228.) As this cannot be explained, however, until we come to the doctrine of transitions, it can here be introduced only by way of anticipation. An example of this kind, may, in the mean time, be furnished by fig. 194:

(Fig. 194.)



In this passage, the transition tone $\bar{f}\sharp$ very clearly characterizes the chord ℭ as a leading chord, namely as IV of *G*-large.

(b.) *Habits of the Ear.*

§ 204.

In what has passed from § 197 to the present place, we have seen how far certain transformations, which pertain only to certain harmonies, may sometimes determine the ear to regard a harmony as something entirely different from what it would otherwise have done according to the mere principle of inertia.—*This same effect is produced again by certain habits and reminiscences of the ear.*

That is to say, inasmuch as the ear is inclined to explain every thing in the most simple and natural way, it naturally explains to itself every combination of tones *as that which is accustomed most usually to occur* and which is of course most familiar to it. Indeed, the circumstance that a harmony is heard to be introduced which exhibits a certain *mien already familiarly known* to the ear, sometimes determines the latter to regard this harmony as belonging to this or that degree of this or that key, even though this key may be, perhaps, a very remote one.

It is impossible to enumerate *all* the cases in which such a habit has the effect to make the ear put this or that accustomed construction upon the different harmonies that may occur; yet we will exhibit some of the most prominent.

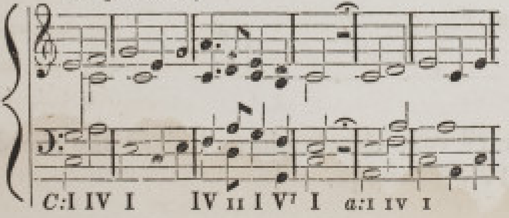
(*I.) NEW COMMENCEMENT.

§ 205.

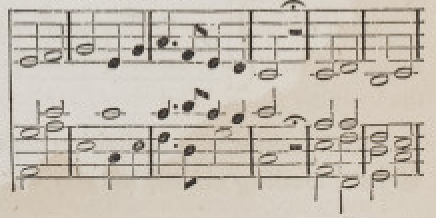
We have already (§ 191) remarked, that the ear is very much inclined to take every large or small three-fold chord with which a piece of music begins, as the tonic chord.

(*aa.*) Hence if in a piece of music which was previously in the key of *C*-large, e. g. a new set or period commences with a large or small three-fold chord, which however might, in itself considered, be found also in the previous key,—as e. g. with the small three-fold chord 𝔞, as in fig. 195, *i*,

(Fig. 195. *i.*)



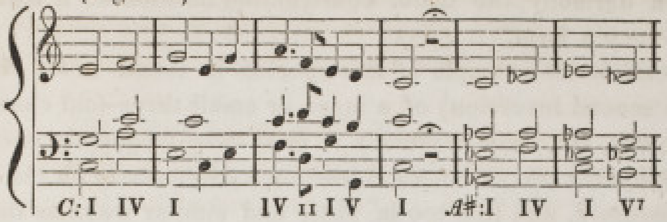
(Fig. 195. *k.*)



the ear receives this 𝔞-chord, *thus presenting itself*, not as the harmony of the sixth degree of the previous key *C*-large, but as I of *a*-small, namely as the commencement of a new phrase in *a*-small, and thus as a leading chord.

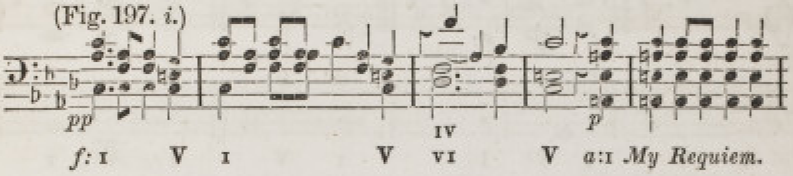
(*bb.*—Or, if in a piece of music in *C*-large, a new passage commences with a large or a small three-fold chord which is not to be found in the preceding key, but in a key near related to that, as e. g. with the harmony 𝔄♭, which may be found in *c*-small,

(Fig. 196.)



the ear takes the 𝔄♭, *thus occurring*, rather as I of the remote key *A*♭, than as VI of *c*.—So also in fig. 197, *i*,

(Fig. 197. *i*.)



we have, after a temporary rest on the harmony ℭ as V of *f*-small, the harmony 𝔞, which appears in this case as a new I—as the tonic harmony of a new key, namely *a*-small, notwithstanding the small three fold chord 𝔞 might be found also in *F*-large—one of the most nearly related keys of *f*-small, as well as in *C*-large, which likewise is more nearly related to *f*-small than is *a*-small.

(*II.) POSITION OF AN OCCURRING HARMONY.

§ 206.

Certain harmonies are accustomed to occur very frequently in certain particular forms and positions, but in others very rarely. Hence it is natural that the ear

(**A*.) should recognize a harmony which appears under a well known form and in a well known position, as actually being the harmony that it thus seems to be, and that, vice versa,

(**B*.) it should not judge the harmony to be what it really is, when it appears under a form which elsewhere does not usually pertain to it.

This will be rendered more clear by the following examples:

§ 207.

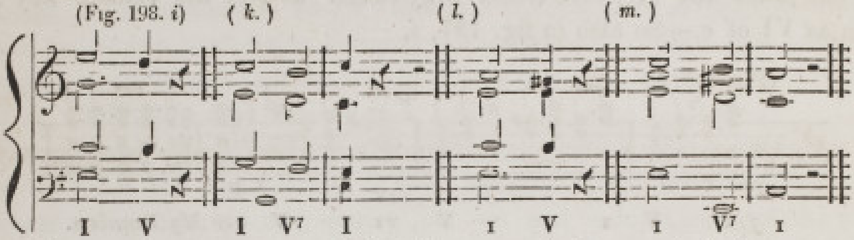
(**A*.) WELL KNOWN POSITIONS.

I have said, *in the first place*, that certain harmonies occur with special frequency under certain forms, and that our ear is, for this reason, inclined to put upon a harmony the usual construction as soon as it makes its appearance in such a form.

(*1.) A remarkable example of this species is found in *the fourth-sixth position* (the second inversion) of a large or small three-fold chord.

That is to say, the tonic harmony (I or I) very frequently occurs in the second inversion (*in the fourth-sixth position,*) *particularly on the heavy portions of the measure*, and that too in such and similar ways as those in the following example:

(Fig. 198. *i*)

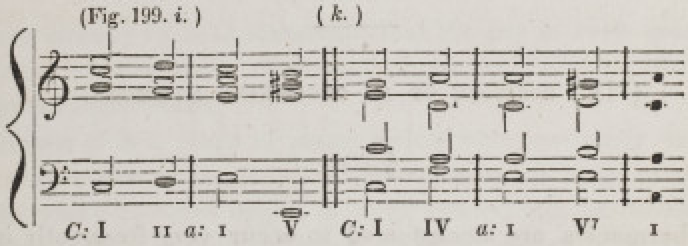


&c. Our ear is so accustomed by this means to hear a tonic harmony occur in such a way, that it has become thereby inclined to take *every* large or small fourth-sixth chord that occurs in this way, as a tonic harmony, I or I.

Hence it comes to pass, that

(*aa.) if the small three-fold chord 𝔞, e. g. occurs in the above described form, in a piece of music which was previously in *C*-large, as in fig. 199,

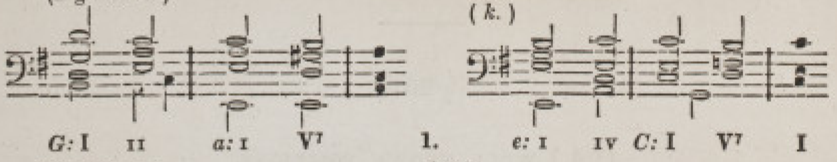
(Fig. 199. *i.*)



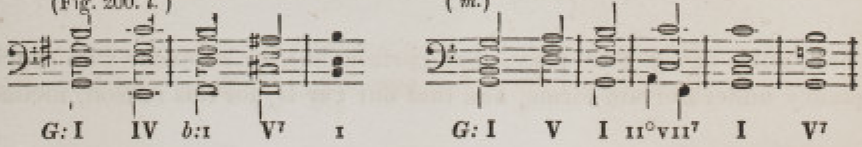
the ear is inclined to regard this harmony as a new I, notwithstanding it is, in itself considered, to be found *also in the previous key C*-large; and hence, on the appearance of the harmony 𝔞 in this harmonic succession, the ear is immediately led to perceive or at least to anticipate a digressive modulation into *a*-small.

Of the same species are the examples in fig. 200, *i*, and the following, where chords appear as leading chords in virtue of their position, though they are to be found in the previous key.

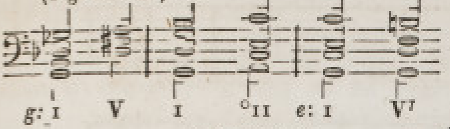
(Fig. 200. *i.*)



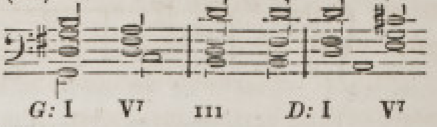
(Fig. 200. *l.*)



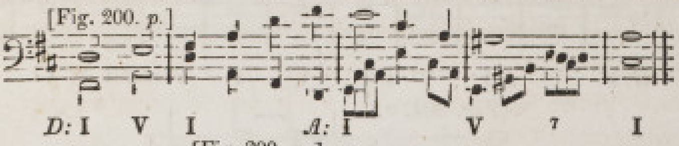
(Fig. 200. n.)


g: I V I °II e: I V^7

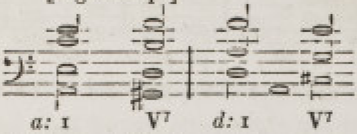
(o.)


G: I V^7 III D: I V^7

[Fig. 200. p.]

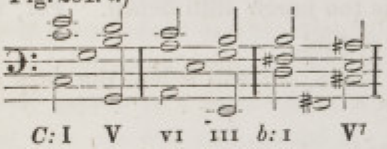


[Fig. 200. q.]

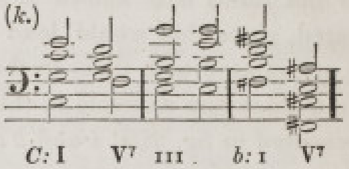


(*bb.) Or, if the small three-fold chord 𝔥 appears under such an aspect in a passage in the key of *C*-large, e. g.

Fig. 201. i.)


C: I V VI III b: I V^7

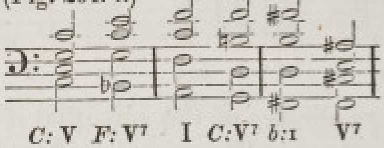
(k.)


C: I V^7 III b: I V^7

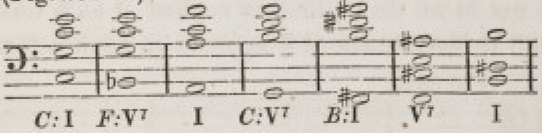
the harmony *thus presenting itself*, although in itself considered it were to be found as III in *G*, a near relative of *C*, is still regarded by the ear as a new tonic harmony, as I of the far more remote key *b*-small.

Of a similar species are the examples in fig. 201, *l*, and those that follow.

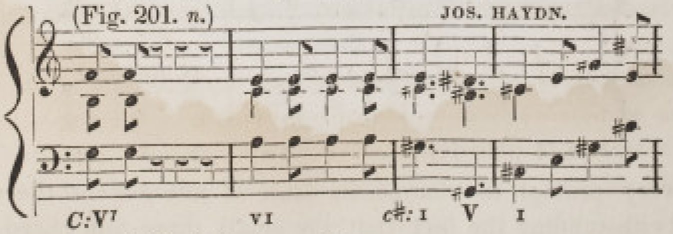
(Fig. 201. l.)


C: V F: V^7 I C: V^7 b: I V^7

(Fig. 201. m.)


C: I F: V^7 I C: V^7 B: I V^7 I

(Fig. 201. n.) JOS. HAYDN.



(Fig. 201. o.)

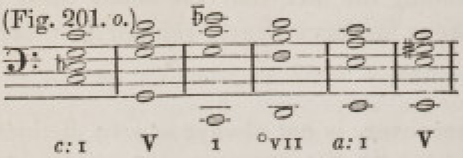
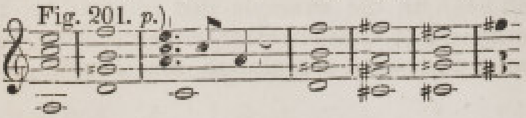
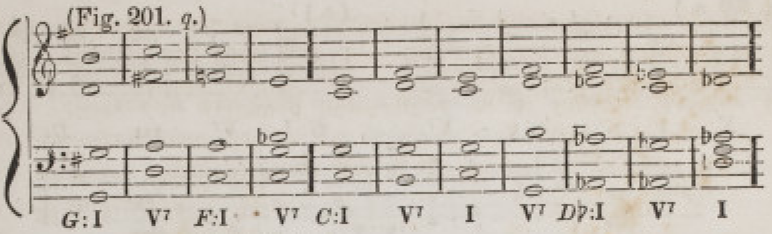

c: I V I °VII a: I V

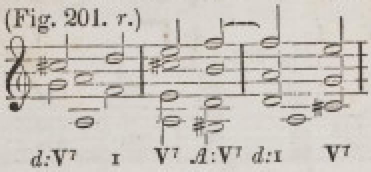
Fig. 201. p.)



(Fig. 201. *q.*)



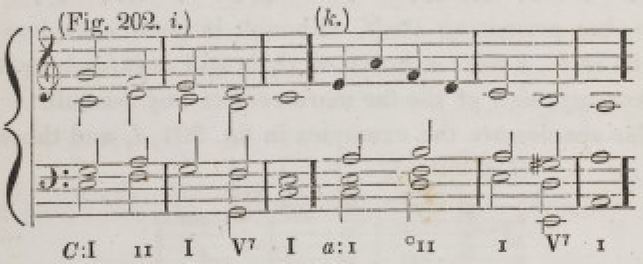
(Fig. 201. *r.*)



(*2.) In like manner as the fourth-sixth position of a three-fold chord has a meaning fixed upon it by current custom, so there are also several *other positions and forms well known to it*, not *all* of which however can here be enumerated, since that would lead us too much into detail. Yet, we shall become acquainted with them in the sequel.

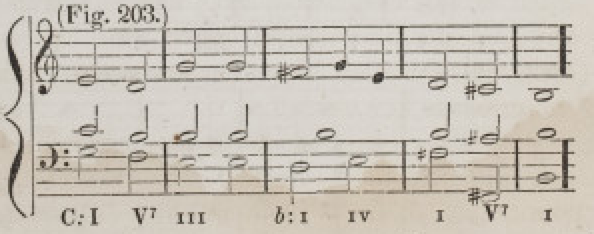
But to adduce one example in this place, we will select the very common form presented in fig. 202, *i* and *k*:

(Fig. 202. *i.*) (*k.*)



We are so accustomed to phrases of this sort, that if we hear a large or a small three-fold chord in the first inversion introduced, in this or a similar manner, we are not at all disinclined to regard it as a tonic harmony; and hence if the small three-fold chord 𝔥 appears in such a form, as in fig. 203,

(Fig. 203.)



the ear is very prompt to change its state of attunement therewith into *b*-small, notwithstanding the fact that the small three-fold chord 𝔥 were to be found in other keys far more nearly related to *C*-large, namely as *A*:ii, and as *G*:iii.

This position, moreover, is not always *so very* distinctive as is the fourth-sixth position, and even in the example just referred to, habit alone would not perhaps be sufficient to characterize the step from the second to the third measures as a digressive modulation into *b*-small, were it not for the coöperation of other favorable circumstances, with which we shall hereafter become acquainted and which depend in part upon the fact that the ear is already in some measure in doubt previously to the appearance of the harmony $\mathfrak{d}$, whether or not to be really and properly in *C* large; because, namely, the chord $\mathfrak{e}$, as III in *C*-large is not a very usual harmony. (§ 147, No. 3.) We shall hereafter advert to this subject again.

§ 208.

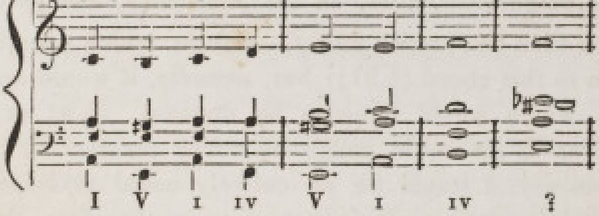
(**B.*) UNUSUAL POSITIONS.

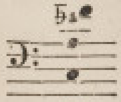
I said, secondly, (§ 206,) that certain forms and positions are *not natural* to certain harmonies, and that hence the ear is *not* inclined to look for them under such unusual and unnatural forms. For, as on the one hand it inclines to the usual and the natural, so on the other it is disinclined to the unnatural and the unusual.

Hence if a harmonic combination is presented to the ear which might in itself be understood in several different ways, but which, understood in one way, would appear in a form which is not at all accustomed to belong to it elsewhere, the ear will understand the chord in such a case, not in the latter way, but in some other.

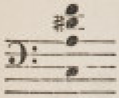
(*aa.*) Hence, if e. g. the harmonic combination [c a ē♭ f̄] or [c a d̄♯ f̄] occurs in a passage in *a*-small, a combination whose different possible meanings are to be seen in the marginal representation connected herewith, we should suppose that, on the principle of inertia, the ear would perceive such a combination in the latter meaning, namely as $^{\circ}\mathrm{II}^7$ of the previous key *a*-small.

[Fig. 204. *i.*]





$\mathfrak{F}^7$
B♭:V^7
b♭:V^7



$\mathfrak{B}^7$ (§94.)
E:V^7

But let the series of chords in question be struck, and no one will fail to see that the fourth measure here is far more natural as $\mathfrak{F}^7$ than as $^{\circ}\mathfrak{h}^7$. (This will appear still more clearly, if we compare the examples in fig. 204, *k* and *l*, below, with one another. In *k*, the modulation is continued on in *B*♭-large; but in *l*, in *a*-small.* In the former case,

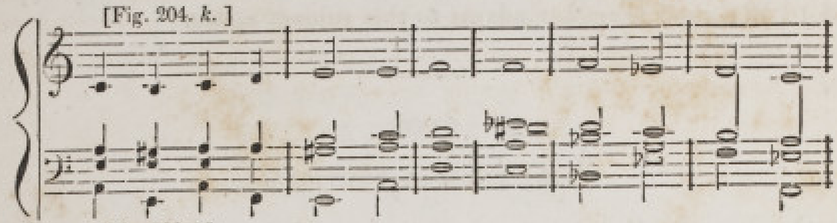
---

* In both of these examples, fig. 204 *k* and fig. 204 *l*, a digressive modulation from *a*-small into *B*♭-large is naturally produced by the chord in the fourth measure, and in the first example (*k*), it is actually *continued* on in this latter key *B*♭, but in the other example (*l*) it is not at all continued but is immediately arrested and followed by chords in the key of *a*-small again. This explains the meaning of the word "*continued*" as here applied to *digressive modulation*. TR.

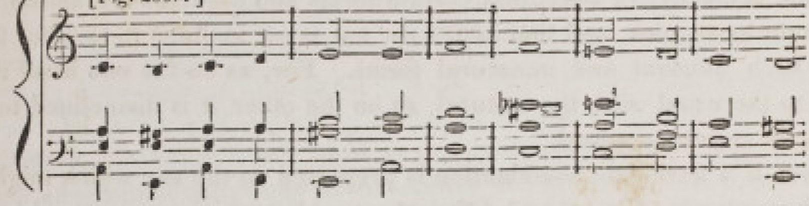
e:V^7
°𝔟^7 (§ 89.)
C:°vii^7
a:°ii^7

after 𝔉^7 has once been heard, 𝔅♭ appears in the fifth measure as an entirely natural continuation of the key *B*♭-large, which was newly introduced in the fourth measure with 𝔉^7;

[Fig. 204. *k.*]



[Fig. 200. *l*]

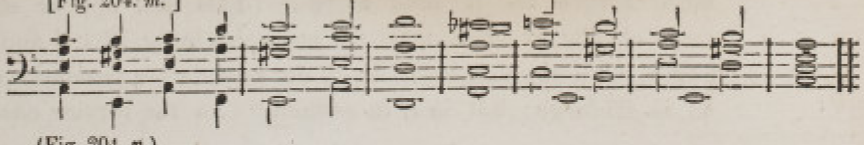


but in *l*, the appearance of the harmony 𝔞 is far more strange and foreign; on the entrance of this chord, one suddenly experiences a new and revulsive impulse of feeling which could not take place, had not the modulation* been for a moment turned out of *a*-small in the fourth measure.)

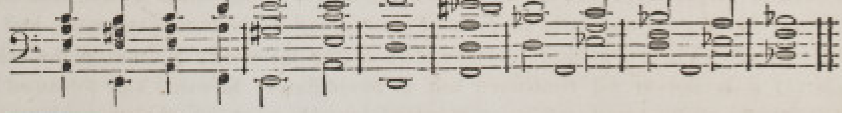
Now what is the cause of the fact that the chord in question does not here appear as °𝔟^7 but as 𝔉^7? It is as follows. Taken as °𝔟^7 it would involve the double singularity, that, *in the first place*, the elevated third $\bar{d}^\sharp$ would lie lower than the proper fifth $\bar{f}$,—a form which usually does not elsewhere pertain to this chord (§ 91;) but, *secondly*, it would appear in the fourth inversion, which would likewise be unusual. (§ 91 at the end.) Thus, considered as °𝔟^7, it would really be *a very peculiar* °𝔟^7; but taken as 𝔉^7, on the contrary, it would be an entirely usual principal four fold chord in the second inversion. It is not strange, therefore, that the ear, which interprets every thing in the most natural manner, understands the chord in question, not as an unusually circumstanced °𝔟^7, but as an entirely common 𝔉^7.

Would one still farther convince himself, that the cause of the foregoing fact lies simply in the position of the chord, let him give it another position, as in fig. 204, *m* and *n*.

[Fig. 204. *m.*]



(Fig. 204. *n.*)



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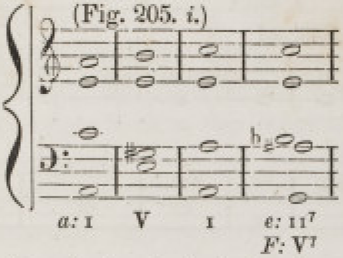
* The word "*modulation*," is here used in the first sense assigned to it by the

Here one will perceive the chord of the fourth measure far more definitely as being $^{\circ}\mathfrak{b}^{7}$, than as being $\mathfrak{F}^{7}$, and the $\mathfrak{a}$ appearing in the fifth measure of fig. 204, *m*, does not surprise the ear at all *here*, as it did in fig. 204, *k;* but one perceives a new transition for the first time on the occurrence of $\mathfrak{B}^{\flat}$ in the fifth measure of fig. 204, *n*, and finds himself now as it were surprised, that he is made to hear $\mathfrak{B}^{\flat}$ instead of the $\mathfrak{a}$ which he had expected.

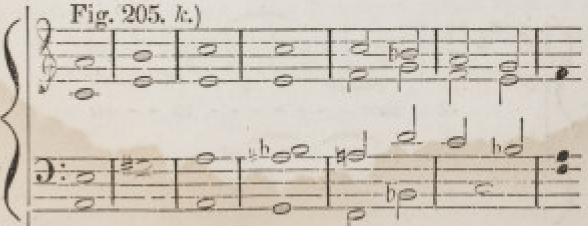
(*bb.*) So likewise in the following passage,

(Fig. 205. *i.*)

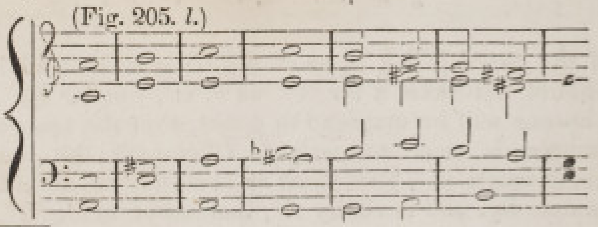


which, as far as to the fourth chord, is in the key *a*-small, the combination in the fourth measure, may, in itself considered, be understood in two different ways,—namely, either as $[G\ b^{\flat}\ \bar{e}\ \bar{\bar{c}}]$ or as $[G\ a^{\sharp}\ \bar{e}\ \bar{\bar{c}}.]$ Taken in the first sense, namely, $[G\ b^{\flat}\ \bar{e}\ \bar{\bar{c}}]$, it would be $\mathfrak{C}^{7}$, and, in this capacity, would be found in *F*-large, as a principal four-fold chord (F:V^{7},)—a key related to *a*-small only in *the second degree:*—but taken as $[G\ a^{\sharp}\ \bar{e}\ \bar{\bar{c}}]$ it would appropriately belong to *e*-small, as $^{\circ}\mathfrak{f}^{\sharp 7}$ with an arbitrarily elevated third—a key that stands in *the first grade* of relationship to *a*-small; thus it would be *e*:°II^{7}.—According to this, one would suppose that the ear would take the chord in question for $[G\ a^{\sharp}\ \bar{e}\ \bar{\bar{c}}]$ and thus for *e*:°II^{7}, rather than for $[G\ b^{\flat}\ \bar{e}\ \bar{\bar{c}}]$. But here also the ear is not at all inclined to take the chord in question as $[G\ a^{\sharp}\ \bar{e}\ \bar{\bar{c}}]$ and thus as °II^{7} of the nearly related key *e*-small, but rather as the chord $[G\ b^{\flat}\ \bar{e}\ \bar{\bar{c}}]$ belonging to the more remote key *F*-large as V^{7},—as clearly appears by a comparison of the examples in fig. 205, *k* and *l*

Fig. 205. *k.*)



(Fig. 205. *l.*)



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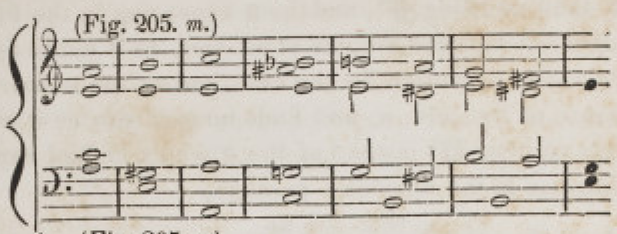
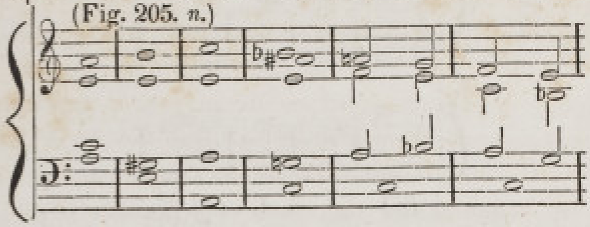
author, namely as meaning merely *a harmonic progression in one and the same key;* and hence he speaks of its being "*turned out*,"—a thing which could not be predicated of it, in case it were a digressive modulation; for, the very idea of a digressive modulation is to be "turned out" of one key into another. TR.

In fig. 205, *m* and *n*, on the contrary,

(Fig. 205. *m*.)



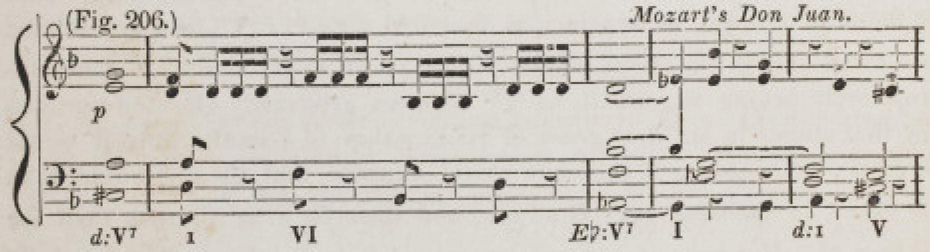
(Fig. 205. *n*.)



where the chord in question appears in the altered position [c g ē ā♯] or [c g ē b̄♭], the ear far sooner takes it for °𝔣$^{\sharp 7}$, than for the more remote ℭ^{7}.

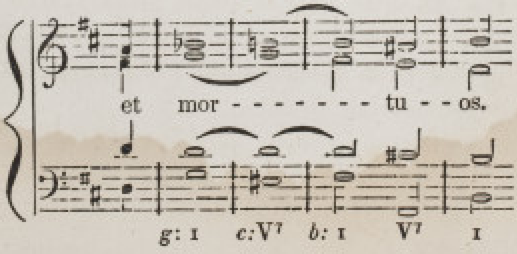
In like manner, in fig. 206, from Mozart's *Don Juan*,

(Fig. 206.)



the chord [A♭ f b♭, d̄] or [G♯ f b♭ d̄] appears, not as d:°ɪɪ^7 with an elevated third, but as *E*♭:V^7.

So likewise in the often mentioned passage in fig. 132,



the position of the chord [f d̄ ḡ b̄] or c♯ d̄ ḡ b̄] is still an additional reason* why the ear should not take it for °𝔠$^{\sharp 7}$ as b:°ɪɪ^7, but for 𝔊^7 as c:V^7: (and after all this, no one will be disposed to doubt, that the tone written as *c*♯ in the above example, is more properly *f*; (Compare the remarks already made upon this example in § 194;) just as certainly as *A*♭ in the third measure of the example fig. 206 is really *A*♭, instead of being *G*♯.)

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* *One* reason why this chord should be thus regarded has been already assigned in § 194; hence the reason in the present case is spoken of as an additional one.—Tr.

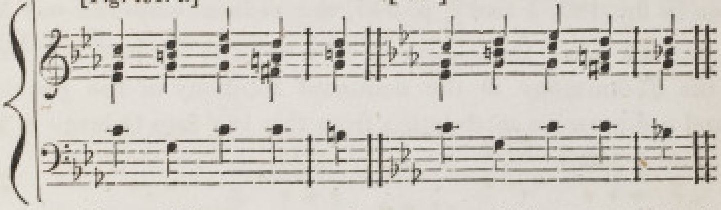
(*III.) CUSTOMARY MODULATION.

§ 209.

Regarded in the same point of view, it is natural also, that the ear should become accustomed to many modes of modulation in the most common use and should become thereby very much inclined to understand a harmonic succession in the customary sense.

The digressive modulation found in fig. 191, below,—a modulation made by means of the transferring dominant harmony (§ 201,) may serve as an example. That is to say, as the *large* dominant three-fold chord occurs with extreme frequency in passages both in the large key and in the small key, so digressive modulations from a small key into the *large* key of the dominant, as e. g. from *a*-small into *E*-large, or from *c*-small into *G*-large, are every where very common and therefore very familiar to the ear. Hence, if, in a passage in *c*-small, e. g.

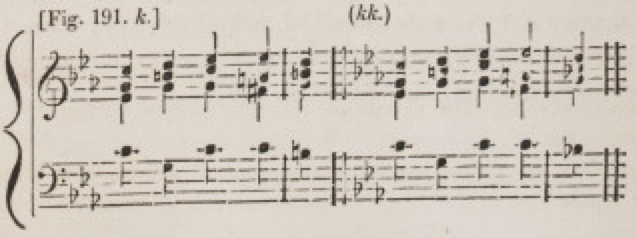
[Fig. 191. *i.*] [*ii.*]



the harmony 𝔇 or 𝔇^7 occurs,—a harmony which, according to the principle of inertia, must appear as the dominant harmony of the nearest related key *g*-small, but not of *G*-large, still the ear for the most part takes it rather as the dominant harmony of *G*-large, i. e. as the common and therefore the accustomed digressive modulation into the large key of the dominant by means of the transferring dominant harmony, and hence expects, after the chord 𝔇 or 𝔇^7, not so much the small three-fold chord 𝔤, as rather a large three-fold chord 𝔊, which latter, as is seen by comparing *i* with *ii*, appears far more natural to it than does the small three-fold 𝔤: such a determination of the ear affords ample proof that it expected, after 𝔇^7, not 𝔤 but 𝔊, or, in other words, that it had perceived 𝔇^7 not as V^7 of *g*, but of *G*. Our ear is so accustomed, even in passages in the *small* key, to construe the transferring dominant chord into a type of the *large* key of the dominant, as here e. g. in a passage in *c*-small, to construe the 𝔇^7-harmony into a type of *G*-large, and not into an indication of *g*-small, that it is accustomed, on the appearance of the said transferring dominant harmony, always to expect the large key of the dominant, rather than the small key of the dominant.

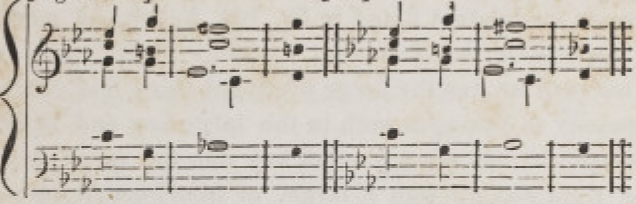
Even if the dominant of transfer carries with it *a small ninth*,

[Fig. 191. *k.*] (*kk.*)



still the ear is not lead astray thereby and does not hear the $\mathfrak{D}^7$-harmony which occurs with a small ninth in fig. 191, *k*, e. g. as V^7 of *g*, but as V^7 of *G;* and it may be seen from the example in fig. 191, *kk*, that here also, after such $\mathfrak{D}^7$, the small 𝔤-harmony appears far more unexpectedly to the ear than would the large 𝔊-chord. (Comp. § 200.)

The same thing appears, moreover, in fig. 191, *l* and *ll*,


[Fig. 191. *l.*] [*ll.*]

so far as one is disposed to regard the chord $[a\flat\ \bar{e}\flat\ \bar{\bar{c}}\ \bar{f}\sharp]$ as a transferring dominant chord $\mathfrak{D}^7$ with lowered fifth (§ 94) and small added ninth.

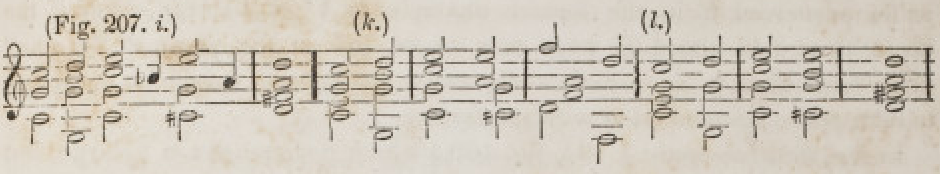
And even in fig. 190, *k* and *l*, p. 345, the reason why the ear does not expect 𝔤 but 𝔊 after the chords $[\bar{c}\ f\sharp\ \bar{a}\ \bar{\bar{e}}\flat]$ and $[a\flat\ \bar{e}\flat\ \bar{\bar{c}}\ \bar{f}\sharp]$, lies in the fact that the 𝔊-harmony is the dominant harmony of the previous key *C*-large, and a digressive modulation from this key into *G*-large is far more usual than into *g*-small.

(*IV.) PARTIAL RE-ATTUNEMENT.

§ 210.

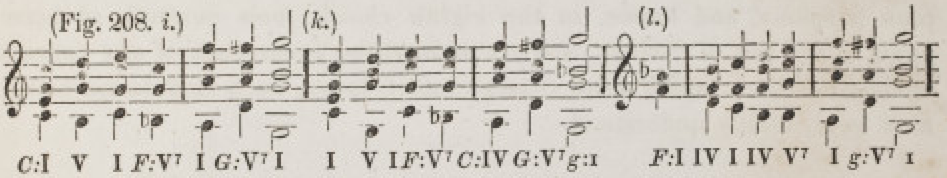
The following is to be considered also as a result of the habits of the ear. In case the ear, by means of an imperfect digressive modulation, is only so imperfectly transferred, in its state of attunement, from a key which it had previously been accustomed to recognize as the principal key, that it still perceives the former to be continued and even to be the preponderating and therefore properly the principal key, it will still understand and judge of every combination of tones subsequently occurring, as it would have done, if it were still perfectly attuned to the previous key and not at all changed in its state of attunement. Or, in other words, the ear, when but imperfectly re-attuned and still predominantly occupied by the previous key, is, as if from an old predilection for a key not yet lost from its memory, very much inclined, even in spite of the imperfect re attunement, to apprehend and judge of the combination of tones presented to it, more in the light of the former not yet exterminated principal key, than in that of the transiently introduced key, and hence sometimes to perceive and judge just as if no digressive modulation had taken place.

If e. g. in fig. 207, *i*,



the ear, transiently changed in its state of attunement, from the principal key *C*-large into *d*-small, by means of the harmony *d*:V^{7}, afterwards hears the harmony 𝔇, the latter must, contemplated in the light of the immediately preceding key *d*-small and in accordance with the principle of inertia, appear to it as the tonic harmony of *D*-large. But let one hear the succession of chords in question, and ask himself whether he recognizes the key *D* large in the 𝔇-chord?—Certainly not! He finds, rather, that he has perceived the 𝔇-chord as the dominant harmony of *G*-large, and accordingly just as he would have perceived it if the transient digressive modulation into *d*-small had not taken place. (Comp. § 194.)

In the following figure,

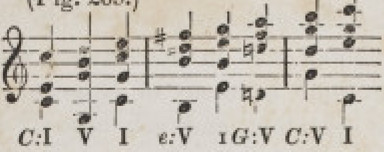

(Fig. 208. *i.*)
(*k.*)
(*l.*)
C:I V I *F*:V⁷ I *G*:V⁷ I
I V I *F*:V⁷ *C*:IV *G*:V⁷ *g*:I
F:I IV I IV V⁷ I *g*:V⁷ I

a digressive modulation takes place in the fourth chord, from the principal key *C*-large into *F*-large, and the perception of this last key is excited. Now when the harmony 𝔇^{7} follows in the sixth chord, it might with as much propriety be taken for the principal four-fold chord of *g*-small, as of *G* large, because both are related to *F*-large with equal nearness and equal intimacy. But since the ear still carries along with the newly introduced key *F*-large a predominant impression of the former key *C*-large, it judges of the 𝔇^{7}-harmony, on its introduction, less in the light of *F*-large than in that of *C*-large, and the 𝔇^{7}-harmony, considered in this point of view, does not here appear to it as *g*:V^{7}, but as *G*:V^{7}, just as it would have done if the ear had remained in its first attunement to *C*-large without the slightest interruption. That the 𝔇^{7}-harmony really does thus impress the ear, one may easily ascertain from the fact that if the small 𝔤-three-fold chord be made to follow the chord 𝔇^{7}, as in fig. 208, *k*, above, it strikes the ear much more unexpectedly than would the large three-fold chord 𝔊. The large three-fold chord 𝔊, as in fig. 208, *i*, above, would seem to the ear far more natural.—Moreover, that *the only reason* why the ear expected 𝔊, and not 𝔤, is the fact that it still retained in connection with the new key, *F* large, a preponderating impression of the previous key *C*-large, can easily be demonstrated by bringing the same series of harmonies, ℭ^{7}, 𝔉, 𝔇^{7}, into a passage where the ear is distinctly attuned to *F*-large, as in fig. 208, *l*, above, in which case one very sensibly expects 𝔤 in preference to 𝔊;

that is to say, one *here* perceives the 𝔇^7-harmony as V^7 of *g*-small, whereas he perceived it in the former example as V^7 of *G*-large,—and if the large three-fold chord 𝔊 were now to be put in the place of the small three-fold chord 𝔤, an additional digressive modulation would be perceived to take place in connection with the former.

In fig. 209, (compare § 194, fig. 180,) which commences in *C*-large, but afterwards passes by means of 𝔅 into *e*-small, and then by means of 𝔇 into *G*-large,

(Fig. 209.)



the modulation into *G*-large takes place at the end of the second measure. We must accordingly take the following 𝔊-chord as I of *G*-large and the last as *G*: IV. But since the ear is still constantly expecting the yet unforgotten original key, *C*-large, back again, it perceives the 𝔊 far more as V of *C*-large, and the following ℭ decidedly and fully as the former tonic harmony, and hence, in the eighth chord, feels perfectly at home again in the key of *C*-large, and yet without the occurrence of any express modulation back again from *G*-large into *C*-large, such modulation being, as it were, tacitly understood.

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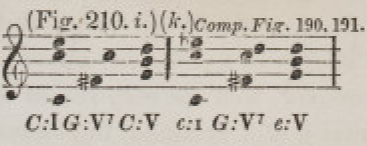
§ 211.

It is seen from the foregoing example, that the ear, after imperfect digressive modulations, is inclined *of its own accord to resume again its state of attunement to the yet scarcely quitted principal key.* When, namely, after such an imperfect digressive modulation, a combination of tones introduces itself, which might occur in the same way in the previous key, the ear is at once very much inclined to receive such combination as really belonging to the previous key, and thus to assume a return of modulation from the new key back again into the former one, as being tacitly understood, without the necessity of being expressly and definitely determined thereto by a decisive leading chord. (§ 187.)

Thus if in fig. 190 or 191, pp. 345, 357 and 358, or in fig. 210, *i. k.* (§ 209,)

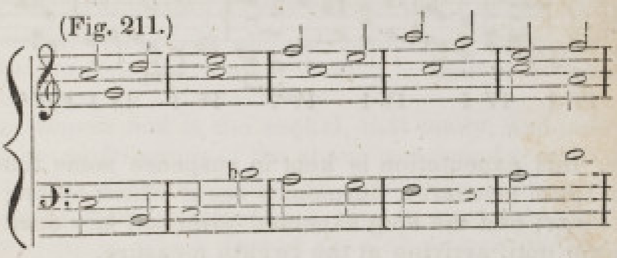
(Fig. 210. *i.*)(*k.*) *Comp. Fig.* 190, 191.



which is in *C* or *c*, as the principal key, after a transient digressive modulation has taken place into *G* large, by means of the transferring dominant harmony 𝔇^7, this 𝔇^7-harmony is followed by the harmony 𝔊, which would now, according to the modulation, be a new tonic harmony,—the ear is still inclined, from its yet retained predilection for the preceding key, to take this 𝔊 as being *in fact* *C*: V or *c*: V again, inasmuch as it *might* be found in either of these keys. For, since such transient digressions from the principal key into the dominant are of very common occurrence in almost every piece of music, we are naturally so much accustomed to hear these digressive modulations merely transiently introduce themselves and then immediately disappear again, leaving the former principal key to resume its old place, that we as it were already know beforehand, in the case of such digressive modulations, that they will not amount to much, and we have a kind of present anticipation that they will be of the same transient and ephemeral character as before; our feelings may be said to be so blunted in relation to the occurrence of such digressive modulations, that we in their case scarcely perceive a digressive modulation at all—scarcely take the trouble, on account of such a momentarily appearing chord foreign to the scale, to re-attune ourselves to the new key in which such chord is found; or, otherwise, as soon as the chord in question has ceased to sound, we immediately transfer ourselves back again from this key to the former one without requiring therefor a formal return of the modulation. (§ 209.)

Substantially the same thing occurs also in similar digressive modulations into the key of *the under dominant ;* thus in fig. 211, e. g.

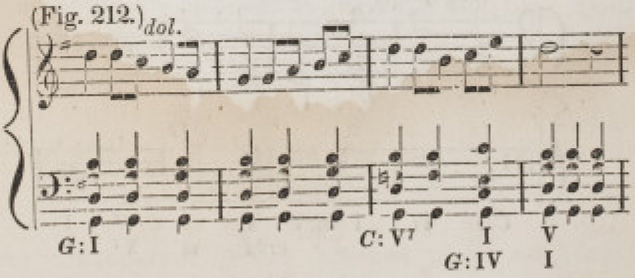
(Fig. 211.)



the ear, in the next measure after *F*: V^7, slides back again, of its own accord, into the large key of *C*.

And one in like manner perceives a momentary digressive modulation from *G*-large into *C*-large, in the third measure of fig. 212,

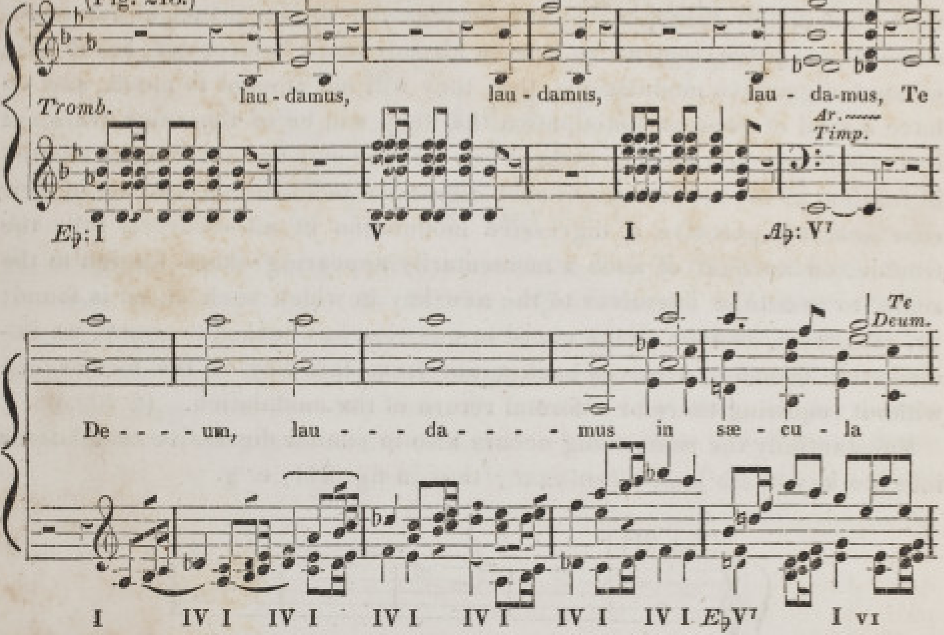
(Fig. 212.)



and, accordingly, the following harmonies ℭ and 𝔊 must appear as *C*: I and *C*: V; but the ear, which had not in consequence of the transient principal four-fold chord 𝔊^7 entirely forgotten the original principal key *G*-large, easily conceives itself back again into this key, of its own accord, and readily recognizes at least the three-fold chord 𝔊, which appears in the fourth measure, as being again the tonic, even if it does not indeed recognize the chord 𝕮 in the end of the third measure as IV of *G*.

The ear in like manner tends to return again into the original key *E*♭-large, soon after the seventh measure of the example in fig. 213;

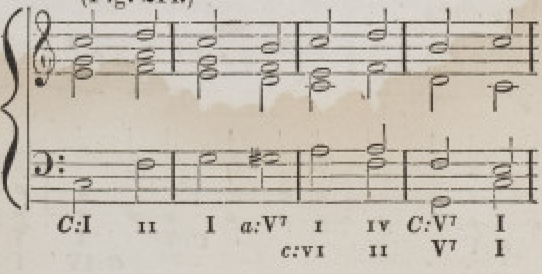
(Fig. 213.)


lau - damus,
lau - damus,
lau - da-mus, Te
Tromb.
Ar.
Timp.
E♭: I
V
I
A♭: V⁷
Te Deum.
De - - - - um,
lau - - - da - - - - mus
in
sæ - cu - la
I
IV I
IV I
IV I
IV I
IV I
IV I E♭V⁷
I vi

here, however, this expectation is kept in suspense some time; since, for the distance of three measures, harmonies occur which belong decidedly to the key of *A*♭-large, and the long expected principal key does not make its appearance again until arriving at the twelfth measure.

So likewise, after a transient digressive modulation from a large key into the small key of its under third, as e. g. in fig. 214,

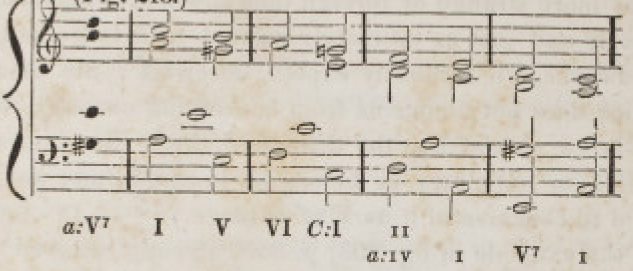
(Fig. 214.)


C:I
II
I
a:V⁷
I
IV
C:V⁷
I
c:VI
II
V⁷
I

the ear is very much inclined to take the next harmony again which admits of being thus taken, as belonging to the as yet scarcely quitted key *C*-large, and accordingly the chord 𝔞, in the present case, not as I of *a*-small, but rather as VI of *C*-large, or at least the following harmony 𝔡 as *C*: II.

So also if, in a passage in a small key, a harmony occurs which belongs to the large key of its third, as e. g. the three-fold chord 𝕮 in *a*-small, as in fig 215,

(Fig. 215.)



it excites, transiently, the perception of *C*-large; still, when immediately afterwards the small three-fold chord 𝔡 occurs, the ear does not understand it as a chord of the second degree of *C*-large, but rather as a chord of the fourth degree of the previous key *a*-small.

This very facility with which the ear again forgets the transiently introduced *C*, and as it were insensibly re-attunes itself to *a*-small, as if no digressive modulation had taken place, and thus scarcely perceives the so easily erased digression into *C*-large, so that one can easily deceive himself in supposing that he really perceives no digression at all,—seems to be one of the principal causes of the fact that many musicians are led into the error of regarding the introduction of the harmony 𝕮, in this case, as not being a digressive modulation at all, and, proceeding on the ground of this error, are led to take the tone *g* as one belonging to the scale of *a*-small. (Compare the remarks on §§ 131 and 237.)

We shall moreover find in the sequel, that many, and indeed most of the partial digressive modulations of the above mentioned species, admit of being explained entirely otherwise than as digressive modulations; since the chords apparently foreign to the scale may in most cases be considered as mere apparent chords, which depend upon no proper fundamental harmony, —and by this means the explanation of many harmonic successions is often very much simplified and facilitated.

The ear in like manner inclines to refer the harmony 𝔡, in fig. 207, *k*. p. 359, (compare § 210,) to *C*-large again,—where it is indeed to be found as II,—and is accordingly disposed to regard it as *C*: II. (Compare § 210, and also fig. 209, p. 360.)

§ 212.

It is another concomitant of the fact now under consideration, that the ear, after such a partial digressive modulation, prefers to hear that harmonic combination follow in which it can re-attune itself into the former key. The 𝕯-chord in fig. 207, *i*. p. 359, would therefore appear to us much more strange and unexpected, than the 𝔡-chord in fig. 207, *k*. p. 359; because the ear can in this last re-attune itself again into the original key *C*, whereas in the case of the 𝕯-harmony it feels itself transferred at least into the key *D*-large. (If the ear perceived the two examples as real and entire digressive modulations into *d*-small and into *D*-large, then the one could not sound any more strange or foreign than the other, inasmuch as *C*-large is just as nearly and just as intimately related to *D*-large as to *d*-small; in this case, however, we naturally expect, after $\mathfrak{A}^7$, the small three-fold chord $\mathfrak{d}$, which does not hinder us from conceiving ourselves back again in the key of *C*-large, rather than the three-fold chord $\mathfrak{D}$, which we can by no means conceive to ourselves as belonging to the former key *C*-large, but are compelled to conceive of it as V of *G*-large.)

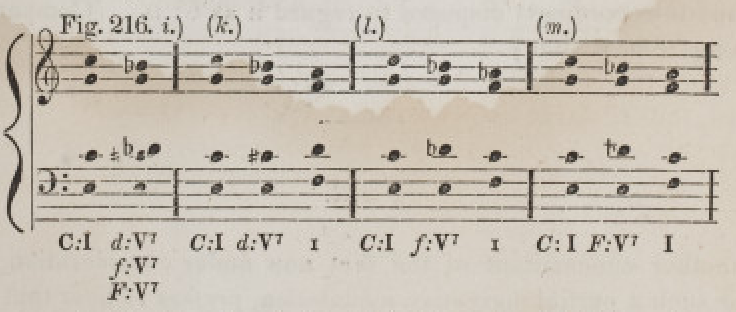
So also in the example in fig. 208, p. 359, already referred to, (§ 210,) the harmony $\mathfrak{G}$ is less unexpected than would be the harmony $\mathfrak{g}$, on the very ground that we can conceive of the $\mathfrak{G}$-harmony again as being the harmony of the Vth degree of the not yet forgotten key *C*-large, whereas the $\mathfrak{g}$-harmony compels us to re-attune ourselves to *g*-small.

§ 213.

And still more,—the ear prefers to interpret to itself a chord, otherwise equivocal, in that sense in which it points beforehand to a following chord in which it can again re-attune itself into the principal key. Accordingly, in the frequently mentioned (§§ 211 and 212) passage in fig. 207, p. 359, one hears the chord $\mathfrak{A}^7$ rather as *d*: V^7, than as *D*: V^7. That is to say, the harmony *d*: V^7 points beforehand to a following small $\mathfrak{d}$ three-fold chord, in which the ear can readily conceive itself back again in *C*-large, while *D*: V^7 points to the harmony $\mathfrak{D}$, which does not admit of such a recurrence; it is for this reason that we perceive the chord $\mathfrak{A}^7$ rather as V^7 of *d*, than of *D*. The truth of this may be demonstrated by adding to the chord $\mathfrak{A}^7$ a property which prevents the ear's receiving it as *d*: V^7, as e. g. the addition of the *large* ninth, as in fig. 207, *l*, p. 359, in which case the $\mathfrak{A}$ harmony sounds far more foreign.

So likewise in fig. 216,

Fig. 216.



the ear apprehends the chord [e g $b^{\flat}$ $c^{\sharp}$] or [e g $b^{\flat}$ $d^{\flat}$] rather as *d*: V^7, than as *f*: V^7, because it can conceive to itself the chord $\mathfrak{d}$, which is to be found also in the previous key *C*-large, as being II of the returning *C*-large, while the small chord $\mathfrak{f}$ can, at best be conceived of only as IV of *c*-small.

(*V.) *Recurrence of passages already heard.*

§ 214.

In like manner as we have thus far contemplated the operations of custom or habit *in general*, we shall find it to operate in *particular individual cases.* In other words, what the ear has once heard in a certain passage, it will not only expect again, on the recurrence of the same passage, but will sometimes even perceive beforehand.

If, e. g. one has once heard that the modulation in example 195, *i.* p 348, (§ 205,) actually changes itself, with the harmony 𝔞, into *a*-small, and he hears the same passage one, two, three, or more times afterwards, either in the same piece of music or in some other, the ear, which has by this means become accustomed to hear the new period continued in *a*-small, will now with still *greater* definiteness at once apprehend this 𝔞-chord as *a*: i. Let the passage once be played as in fig. 195, *k.* p. 348, and the ear, following the opposite custom, will understand the chord 𝔞, not as *a*: i, but as *C*: vi.

So also, after one, on first hearing the passage in fig. 196, p. 349, (compare § 205,) has at the chord $\mathfrak{A}^{\flat}$, expected a following period in $A^{\flat}$-large, and has had this expectation gratified, he will, on hearing this passage again, be perfectly confident in his expectation, and will still more decidedly at once apprehend the chord $\mathfrak{A}^{\flat}$ as $A^{\flat}$: I.

Substantially the same thing will be realized in figs. 199—201, pp. 350—352, &c.

Indeed, after one has several times heard the passage in fig. 205, *n.* p. 356, (compare § 208,) he will at last forthwith take the chord of the fourth measure to be $\mathfrak{C}^{7}$, and not $^{\circ}\mathfrak{f}\sharp^{7}$; and will not in that case find the following 𝔉 to appear at all strange. (Compare § 208, *bb.*)

And so likewise if one has played over the passage in fig. 204, *m.* p. 354, (§ 208,) a couple of times, and then afterwards plays the passage in fig. 204, *n.* p. 354, the ear, which has now, by several times listening to the passage in *m.* become perfectly accustomed to understand the chord of the fourth measure as *a*: ii^{7}, and to hear the small three-fold harmony 𝔞 follow it,—will after this feel *doubly* surprised, in *n*, at no more hearing *a*-small introduced, but $B^{\flat}$-large in its stead. And, vice versa, let *n.* be several times first played, and thus the ear will become accustomed to it, so that afterwards, when *m.* is played, the *a*-key itself will appear foreign and strange. (§ 308.)

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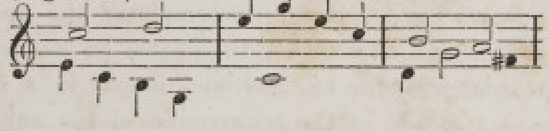
§ 215.

Indeed, the efficacy of the habits of the ear not unfrequently extends so far as to take a harmony appropriately belonging to the previous key to be one belonging to another key, without any other reason therefor, than the fact that it has learned from previous hearing now to expect the modulation o turn into this latter key. Thus e. g. if the following passage,

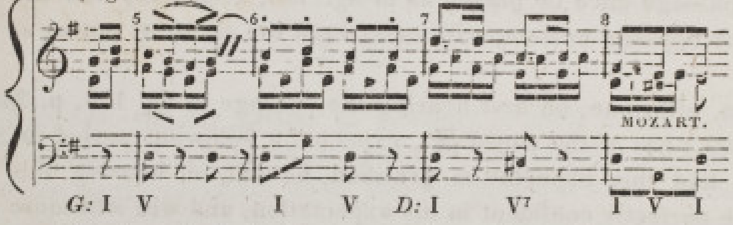
(Fig. 216*l*.)



has been played over several times in one's hearing, his ear will at length begin even in the second measure to re-attune itself into the key of *G*, and to regard the chord 𝕮 as IV of *G*-large.

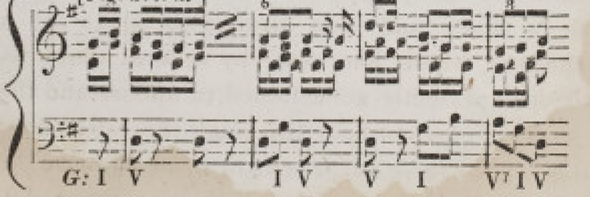
Or, to adduce another very well known example: *Mozart's* bird-catcher's song, [Vogelstellerlied,] which in the seventh measure makes a digressive modulation by means of the harmony $\mathfrak{A}^7$, from *G*-large into *D*-large, fig. 217, *i*.

(Fig. 217. *i*.)



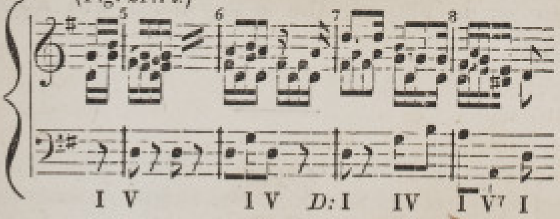
has been so often heard, that, if we now hear it again, we already know beforehand, and as it were even perceive beforehand, on the approach of the passage here referred to, what is to come next. Hence our internal sense of hearing re-attunes itself in the very commencement of this small period, into *D*-large and thus readily apprehends the 𝕯-harmony, which precedes $\mathfrak{A}^7$, as *D*: I; which certainly would not be the case, if we were accustomed to hear the passage as it is presented, say in fig. 217, *k*.

[Fig. 217. *k*.]



But if we had very often heard the passage as exhibited in fig. 217, *l*.

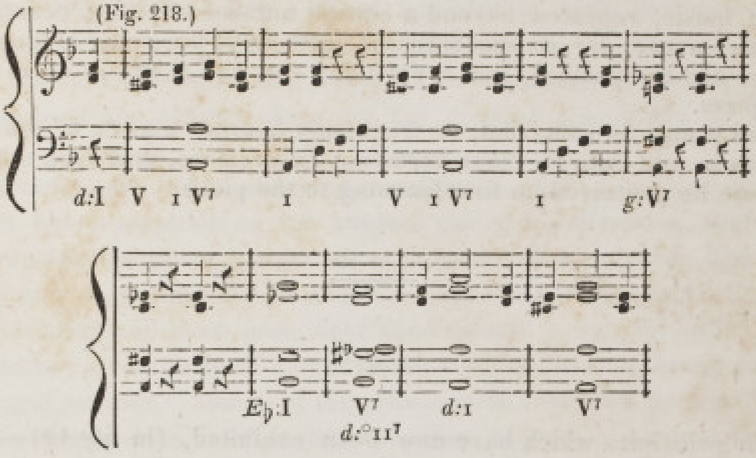
(Fig. 217. *l*.)



our ear would at last have become accustomed to perceive the 𝕯 in the first half of the seventh measure beforehand as *D*: I, and the following 𝕲 as *D*: IV, without having any other sufficient reason for it, than the presentiment that it is now passing into *D* large.

For a like reason, the harmony of the ninth* measure of the passage in fig. 218,

(Fig. 218.)



appears to the ear on being heard for the first time, from the natural influence of the principle of inertia, by no means as [$B^{\flat}$ g♯ $\bar{d}$ f], but as [$B^{\flat}$ $a^{\flat}$ $\bar{d}$ $\bar{f}$], and consequently as V^7 of the key $E^{\flat}$-large, newly introduced in the foregoing measure; but, since the modulation immediately afterwards returns again into the original principal key *d*-small, all those of us who have so very frequently heard this duet, always at once apprehend the chord in question as *d*: °II^7 with an elevated third; and this is indeed the very reason why Mozart wrote it [$B^{\flat}$ g♯ $\bar{d}$ f.]

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§ 216.

In the circumstance that so many combinations of tones acquire, by being repeatedly heard, a meaning entirely diverse from that which one would ascribe to them on hearing them for the first time,—in such an accustoming and familiarizing of the ear to the turns of harmonies very frequently presented to it,—in this more intimate and more perfect understanding which arises from repeated hearing,—by this foreseeing of the direction which the modulation will take, and where it will come out,—in this, I say, is to be found the principal reason why a piece of music—especially a piece in which unusual modulations or those that are otherwise somewhat complicated, occur, becomes so much more clear and intelligible on being several times heard, whereas on hearing it the first time we perhaps followed the sense of its modulations but obscurely and were unable to satisfy ourselves in relation to what we heard. That is to say, the ear comes to know the sooner, by a repeated hearing, as what it is to regard so many harmonic successions, otherwise strange and obscure, and is no longer obliged so often to wander hither and thither in uncertainty between several keys, but many combinations of tones which struck it with a kind of surprise or strangeness on hearing the piece for the first time, appear to it, after a repeated hearing, in an entirely new light, and then no longer seem strange, but as perfectly familiar and agreeable.

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* *i. e.* Ninth, if we count the incomplete first measure as one. Tr.

And, vice versa, it is perhaps due in part to this circumstance, that a piece of music, repeated beyond a certain number of times, ceases at last to charm our ear; for, its succession of harmonies, becoming at length even too clear and too familiar, lose every thing that can excite in us an agreeable surprise.

Indeed it may be said, that, on frequently hearing a piece of music, one perceives in part entirely other harmonic successions, and even other keys than those he perceived on first listening to the piece.

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§ 217.

As the principles which have now been exhibited, (in §§ 191—216,) in relation to the nature and properties of our ear, though really simple, may still perhaps appear more or less complicated to many, we here, in order to facilitate a general survey of the subject, sketch the following aphoristic

General view of what has passed in §§ 191—217.

- **(A.) First attunement of the ear. § 191.**
- **(B.) Continued attunement,—re-attunement. § 192—216.**
  - **(1.) Principle of inertia. § 192—196.**
    - **(*a.*) The ear is predisposed to take that which is appropriate to the scale, *as* appropriate to the scale, § 193, and**
    - **(*b.*) That which is foreign to the scale, as that which stands in the nearest possible relationship to the scale. §§ 194—196.**
  - **(2.) Stronger reasons which overcome the natural inertia of the ear. §§ 197—218.**
    - **(*a.*) Particular characteristics of harmonies that occur. § 198—201.**
      - **(*I.) V^7 with large ninth. § 199.**
      - **(*II.) V^7 with small ninth. § 200, 201.**
      - **(*III.) $^{\circ}\mathrm{ii}^{7}$ with elevated third. § 202.**
      - **(*IV.) Transition tones. § 203.**
    - **(*b.*) Habits of the ear. §§ 204—218.**
      - **(*I.) New commencement. § 205.**
      - **(*II.) Position of an occurring harmony. §§ 206—208.**
        - **(**A.*) Positions particularly well known. § 207.**
          - **(*1.) Fourth-sixth position. § 207, (*1.)**
          - **(*2.) Other well known forms. § 207, (*2.)**
        - **(**B.*) Unusual positions. § 208.**
      - **(*III.) Accustomed modulation. § 209.**
      - **(*IV.) Partial re-attunement. §§ 210—213.**
      - **(*V.) Recurrence of passages previously heard. §§ 214—216.**

(C.) EQUIVOCALNESS OF MODULATION.

§ 218.

We have hitherto seen how a chord, *equivocal* in itself, becomes definite and clear in its meaning by means of *the connection* in which it occurs; much in the same way that every word in the language of speech acquires a more distinct and definite sense, by the general connection of the discourse.

Now it must have been observed through the whole course of developement that has transpired on the subject under consideration, that in part the characteristics given are not all very nicely distinguishing, and in part also they may sometimes fail us and leave the thing undistinguished. For, even the leading and most prominent fundamental principle, that "the ear is inclined to explain to itself every combination of tones in the simplest and most natural manner," admits of the presumption that even here mathematical precision is not to be expected; because, indeed, of several modes of explanation, one may easily be just as simple and natural as the other; and this the more, inasmuch as the matter in so many cases *depends entirely upon mere circumstances*, which latter themselves may sometimes be doubtful, especially if *several circumstances of different* or even *of opposite* signification happen *to concur*, so that one circumstance which might occasion the ear to put *one* construction upon this or that combination of tones that occurs, is outweighed or neutralized in its influence by another and an opposite circumstance, in which case therefore, the tongue of the balance remains as it were stationary half-way between. It cannot, therefore, be otherwise than that cases must occur, in which the ear will find itself in doubt as to a combination of tones that even stands in the connection of a passage, and will be able to interpret such combination to itself as naturally in one way as in another, and consequently the meaning of such a harmony must in fact *remain undecided*.

Now this equivocalness, which not only attends every harmony in itself considered, but which still remains even in the general connection of a passage or composition, we will denominate *the proper* or *real equivocalness* of a harmony, and we will term a harmony, when it thus remains equivocal *even in the connection* of a piece of music, a *really* or *properly equivocal* harmony, in order to distinguish such a case of equivocalness from that equivocalness which pertains to every harmony *individually* considered,—a species that may be called *individual equivocalness.*

We will now examine a series of examples belonging to this species.

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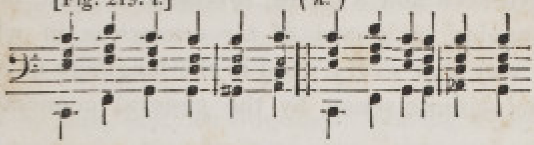
§ 219.

When a piece of music begins originally with a harmonic combination of only two single tones, as e. g. with the tones [e g], the ear can explain this to itself as a commencement in *C*-large or as a commencement in *e*-small.

If the chord [G♯ d f b] or [A^b d f b] occurs in a passage in *C*-large, as e. g.

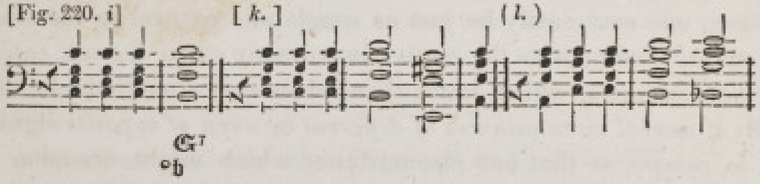
[Fig. 219. *i*.]



it can in most cases be construed by the ear as well for $\mathfrak{E}^7$ as for $\mathfrak{G}^7$. In the former capacity it would effect a digressive modulation into the very nearly related key *a*-small, but as $\mathfrak{G}^7$,on the other hand, it would indicate the likewise nearly allied key *c*-small, or it might indeed properly be regarded as belonging to the key *C*-large. (§ 200.) All three modes of interpretation are just about equally obvious to the ear, and consequently harmonic successions of this species are in most cases really equivocal.

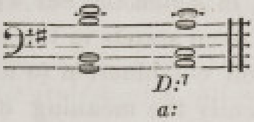
In the following example,

[Fig. 220. *i*]



the chord [B f b d̄] occurring in the second measure of *i*, can be regarded either as $\mathfrak{C}$:°vii, or as $\mathfrak{C}$:V^7 with omitted fundamental tone;—and the harmonic combination [A c a ē] in fig. 221,

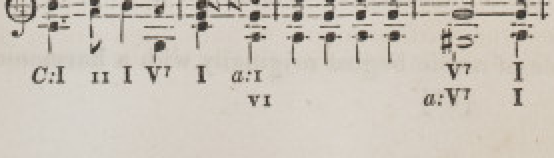
[Fig. 221.]



can be considered either as $\mathfrak{G}$:ii with the omission of the fifth or as $\mathfrak{G}$:V^7 without the fundamental tone and the third. There is no circumstance involved in the case which should give the preference to the one meaning or the other. Thus these combinations are and continue to be *equivocal* and that too even in the connection of a piece of music. (At least it is so on the first hearing; for, it is true indeed, that if one has heard the passage in fig. 220 twice or more as it is exhibited in *k*, his ear will not, after this, take the first half of the second measure for the diminished three-fold chord of the seventh, nor for the four-fold chord of the fifth degree of *C*-large, but will even beforehand assume it to be the diminished three-fold chord of the second degree of *a*-small. § 215.)

So also in fig. 222,

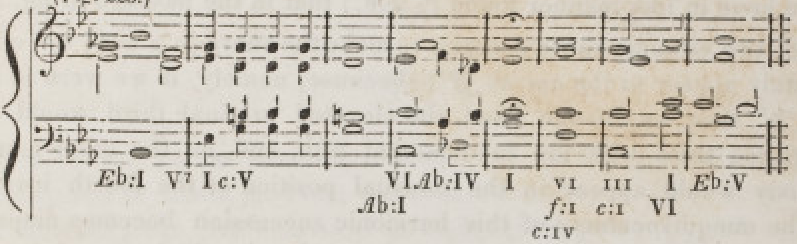
[Fig. 222.]



the ear can take the harmony that occurs after the pauses or rests really (according to § 205) just as well for a new tonic harmony, as (according to § 193) for *C*:vi, as the small three-fold chord of the sixth degree of the previous key *C*-large; or, in other words, it can so construe this passage as to make a new period in *a*-small commence with the chord 𝔞, or so as to make the harmony 𝔞 belong still to *C*-large, assuming a digressive modulation to take place into *a*-small first at 𝔈^7 in the last measure. (It is true indeed that the ear will become accustomed, by the frequent hearing of the passage, to perceive the small 𝔞-three-fold chord as the new tonic harmony of *a*-small.)

In the following passage,

(Fig. 223.)



which, taken as a whole, is in the key *E*♭-large, a digressive modulation takes place in the third measure into *c*-small, and hence the immediately following 𝔄♭ would, according to the principle of inertia, be construed as VI of *c;* but the position in which the 𝔄♭ appears (§ 207, at the end,) raises the question whether it may not perhaps occur in the present instance as *A*♭:I? But since this sixth position is not so decisive as is the fourth-sixth position and consequently has not the power so perfectly to overcome the principle of inertia, the ear remains as it were undecided whether to take this 𝔄♭ as *c*:VI or as *A*♭:I.

The following chord, in pursuance of the principle of inertia itself, carries the ear definitely into the key *A*♭-large. (The tone *b*♭, in the last quarter of the measure, is merely a transition tone.)

In the sixth measure,—behold!—there are new equivocalnesses! The small three-fold chord 𝔣, which there appears, might be

(1.) construed, according to the principle of inertia, as a small three-fold chord on the vith degree of *A*♭-large;

(2.) it might, as the commencement of a new period, be regarded as a new *f*:i;

(3.) it might be taken as iv of the as yet scarcely quitted key of *c*-small (§ 210,) in which case it would form with the following 𝔠-harmony the very usual harmonic progression *c*:iv—i.

In this case the ear does not in fact know, at least on the first hearing of the passage, to which of these modes of construction, so nearly counterbalancing each other, to give the preference.

The two harmonies of the following seventh measure are also equivocal. If, according to No. 1. above,

(1.) we assume the sixth measure to have been still in *A*♭-large, we can now regard (*a.*) this seventh measure as III and I of *A*♭-large, or, since the harmony III is always rather unusual (§ 147, No. 3,) we can conceive ourselves to have become

(*b.*) here transferred into *c*-small.

But if in accordance with No. 2. above,

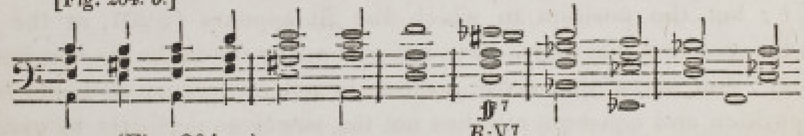
(2.) we conceive to ourselves the sixth measure to be in *f*-small, we shall, according to the law of inertia, perceive the seventh as a digressive modulation into *c*-small.

But if, according to No. 3. above, we had

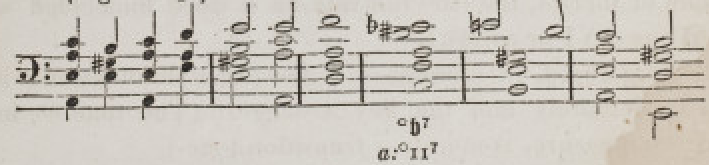
(3.) perceived the foregoing sixth measure as *c*-small, the seventh then appears only as a continuation of this key.

We have in like manner found (§ 208,) that in the passage in fig. 204, *i*, p. 353, two circumstances conspire to make the chord [c a ē♭ f̄] or [c a d̄♯ f̄] definitely appear to the ear as $\mathfrak{F}^7$: (because, namely, if we were to regard it as $^\circ\mathfrak{b}^7$, then, on the one hand, the elevated original third would form a diminished third with the fundamental fifth, and, on the other hand, this harmony would appear in the unusual position of the fourth inversion.) But the unequivocalness of this harmonic succession becomes diminished, if we cause this chord to be heard in a position in which one of the former circumstances passes away, as e. g. in fig. 204, *o* and *p*.

[Fig. 204. *o.*]



(Fig. 204. *p.*)



In this case the ear has as much reason to take the harmony of the fourth measure for $^\circ\mathfrak{b}^7$, as for $\mathfrak{F}^7$; or, in other words, the position in which the harmony $^\circ\mathfrak{b}^7$ *here* appears, would indeed be unusual, but yet not so very much so that it would *decidedly preponderate* against the principle of inertia, and therefore the succession of chords here remains really equivocal,—at least on the first hearing.

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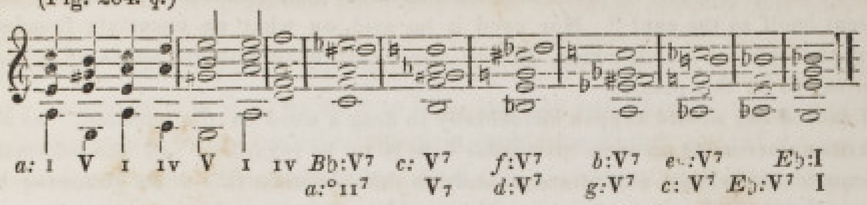
§ 220.

If moreover a really equivocal chord be followed by still others which are themselves also equivocal, as in the following passage:

(Fig. 204. *q.*)


a: I V I IV V I IV Bb:V7 c: V7 f:V7 b:V7 e♭:V7 Eb:I
a:°II7 V7 d:V7 g:V7 c: V7 Eb:V7 I

the ear must at last entirely lose the thread of modulations so very complicated and can really no longer know where it should be, but is obliged as it were to fluctuate hither and thither between several keys to which the different harmonies occurring might belong.

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§ 221.

If, moreover, as we have seen, from § 218 to the present place, many combinations of tones, and that too even when they occur in the connection of a musical piece, are equivocal on their first appearance, yet such combination of tones, though actually equivocal at the moment of its first appearance, still acquires in many cases from the subsequent portion of the musical phrase and of course *afterwards, a more definite meaning*,—very much in the same way that very often in the language of speech a word equivocal in itself is subsequently rendered definite in its signification by means of the following connection of the discourse, whereas at the moment of first hearing the word pronounced one was doubtful as to the meaning in which it might be here intended. Thus it may be said, e. g. that in the passage in fig. 219, p. 370, the fifth chord [G♯ d f b], or [A♭ d f b], though at the moment in which one first hears it struck it is really equivocal, still is explained,—as the passage stands in *i*,—by the next following chord, $\mathfrak{a}$, as being $\mathfrak{E}^7$, while,—as the passage stands in *k*,—it is shown, by the following harmony, to be $\mathfrak{G}^7$. In the case *i*, the ear first learns from the sixth chord, that the preceding harmonic combination was to be understood as $\mathfrak{E}^7$,—in like manner as in the case *k*, on the contrary, the ear perceives from the sixth chord, that the preceding fifth chord was to be understood as $\mathfrak{G}^7$.

In like manner the still more equivocal chord [B f b d̄], in fig. 220, *i*, p. 370, is subsequently explained by the sequel in *k*, as being *a*:II.

REMARK.

It is really surprising that the whole subject that has been discussed from § 190 to the present place, has never even been suggested and much less examined by any of the theorists whose works have ever come to my knowledge! And a word need not be said, to show how important and even *indispensable* in the theory of musical composition must be the question: "As what does each harmony that occurs in a passage of music present itself to the ear?" Nor need it be said, on what an uncertain foundation every theory must stand, which, like all those that have hitherto appeared, gives no information on this point!

If indeed one should happen incidentally to drop a word on the question, "as what a harmony occurring in some particular case is to be regarded," all the information communicated in reply amounts ultimately to this: we must *look at the following harmony.* (§ 221.) Thus we sometimes find the following rule laid down: in order to distinguish the diminished three-fold chord and the four-fold chord with small fifth, (as e. g. $^{\circ}\mathfrak{b}$ and $^{\circ}\mathfrak{b}^7$,) from the principal four-fold chord, (as e. g. $\mathfrak{G}^7$ with the ninth and the omission of the fundamental tone,) one has only *to look at the following harmony:* that is to say, if the harmony $\mathfrak{C}$ or $\mathfrak{C}^7$ follows, then the preceding chord was $^{\circ}\mathfrak{b}$ or $^{\circ}\mathfrak{b}^7$ —($^{\circ}\mathrm{ii}$, $^{\circ}\mathrm{ii}^7$? or $^{\circ}\mathrm{vii}$, $^{\circ}\mathrm{vii}^7$?), &c.—According to this, the harmonic combination [B f b d] in fig. 220, *k*, p. 370, would be unequivocally $^{\circ}\mathfrak{b}^7$, and in fig. 220, *l*, p. 370, it would be in like manner $\mathfrak{G}^7$. But we have seen in § 219, that the former is at best but very conditional, and, from § 193, that the latter is not true.—To say the least, a theory which can give us, instead of the whole doctrine that has now been treated from § 190 to § 221, nothing better than a half true fragment of this last single 221st section of our treatment, is not inappropriately hit by that humerous exclamation of old *Doni:* "*Or questa è una delle più strane cose del mondo, e proprio come dire, che, per discernere un Lione da un Cavallo, bisogni guardargli la coda; che se al povero animale sarà stata tagliata, non si potrà connoscere di qual specie sia. E se in una modulazione mancherà l'ultima nota, non si potrà discernere, in qual modo è composta.*"* "*Pray, this is one of the strange things of the world; it really amounts to saying that in order to distinguish a lion from a horse, it is necessary to look at his tail; and if by any means the poor animal should happen to have that cut off, it would no longer be possible to recognize him or to tell of what species he might be. So if in a modulation the last note happens to be wanting, it will be impossible to determine in what key it was written!*" The question, as we have seen, is answered chiefly by a reference of the newly introduced harmony to *the preceding*, though it is true indeed that *sometimes other circumstances also* are brought into the account in connection with this, and that in a certain particular, the following harmonies constitute *one* of these circumstances. (Comp. Remark on § 99.)

And yet this half true precept is almost the only one, or at least the most important one, that we find on this whole subject in our books of instruction!

I say this, not for the purpose of arrogating to myself the greater merit for having been the first to treat this subject; but rather as an apology for any defects that may exist in my exhibitions of a subject which has been in no measure prepared to my hands by any writer before me.

Postscript to the Third Edition.

I have since been followed, in part in my own words, by Mr. Jelensperger, *Professor of Composition in the Conservatory of Paris,* [*Professeur de Composition au Conservatoir de Paris,*] in his very estimable work: *L'harmonie au commencement du 19me siècle*, pp. 55 to 58, 77, 78.

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* See J. B. Doni, *dell' inutile osservanza dei Tuoni hodierni*, p. 237.

§ 222.

The fact, indeed, that if the passage in fig. 219 *i* and *k*, p. 370, several times recurs as it is in *i*, or as it is in *k*, the ear will become accustomed to perceive the equivocal chord in the first case *immediately* as [G♯ d f b,] and in the second case immediately as [A♭ d f b,] is shown by § 214; and substantially the same thing is true also of the example in fig. 220, p. 370.

§ 223.

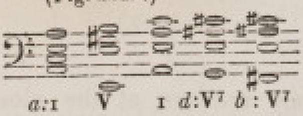
The reader certainly need not be here reminded, that the equivocalnesses of modulation are least of all to be regarded as *defects.* We shall find, on the contrary, that they are often sources of very peculiar charms and of rich harmonic variety, particularly on account of the different harmonic successions to which they give birth, and also that they are a very effective means of closely and happily blending harmonic successions that would otherwise be harsh and repulsive. (§ 241, No. 8.)

§ 224.

I have often in the examples hitherto adduced written the enharmonically ambiguous notes in two different ways, according to their two different senses, as e. g. in fig. 204, *i*, p. 353, where the two notes *d̄♯* and *ē♭* are placed close by one another; and so also in the same way, *a♯* and *b♭* in fig. 205, p. 355, &c. In actual practice, however, such ambiguous notes, and that too even where they remain actually ambiguous to the ear, they are always written only in one way, usually in that way, namely, which best suits the following harmonies, as e. g. in fig. 216, *k*, *l*, *m*, p. 364.

Indeed, we sometimes write a harmony which is not properly equivocal, otherwise than it actually sounds to the ear, merely because such a mode of writing it is more simple and convenient, than the mode of writing which is more correct in itself. In

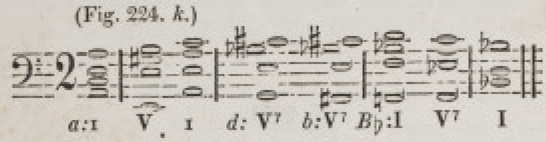
(Fig. 224. *i*)



the fourth chord obviously does not occur as [G e a♯ c♯], but as [G e b♭ c̄♯,] (§ 194,) and strictly, therefore, it should be thus written. But it is here more convenient and simple to write *a♯* instead of *b♭*, because *a♯* must necessarily appear in the following chord, and consequently if *b♭* had been written in the third chord, the very same tone must be written in the next chord as *a*♯,—a mode of writing which, even if strictly correct, would still be rather complicated and less clear to the eye. And besides, such enharmonic changes or abrupt enharmonic turns easily occasion misconceptions and errors in delivery, and it is therefore frequently altogether advisable to prefer the more convenient and more simple mode of writing to that which has the appearance of being more nicely accurate and more learned.

On the other hand, in fig. 224, *k*,

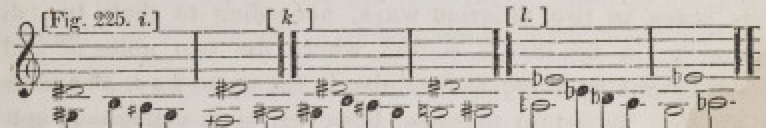
(Fig. 224. *k.*)



it is desirable not only to write the *b*♭ in the fourth chord actually as *b*♭, but also to write the *a*♯ of the following measure under the form of *b*♭, because *b*♭ must necessarily occur again in the sixth chord, and thus, in order to write strictly according to rule, we must write one and the same tone first as *b*♭, then as *a*♯, and then again as *b*♭,—a drudgery which had much better be spared both to ourselves and to the reader.

Under this head belongs, moreover, what was said (§ 215,) in relation to the manner of writing the chord [B♭ a♭ d̄ f̄] or [B♭ g♯ d̄ f̄,] in fig. 218, p. 367.

Still other considerations showing why it is sometimes desirable to write many notes otherwise than they ought strictly according to rule to be written, are met with in the doctrine and practice of instrumentation. The lowest tone of the violin, e. g. is *g*, which sounds precisely like *f*×. Now if I had to write the tones "*g*♯ *f*× *g*♯" for the violin, fig. 225, *i*,



I should probably prefer to write "*g*♯ *g* *g*♯" therefore, as in *k*,—certainly not "*a*♭ *g* *a*♭," as in *l*,—because *f*× is unusual to the violinist.

(D.) EXAMPLES FOR A PRACTICAL APPLICATION OF THE FOREGOING PRINCIPLES.

§ 225.

I wish here to furnish my readers, at the close of what I have had to say on the subject of the attunement of the ear to a key, some materials for the application and practice of the principles which have hitherto been communicated. Several pieces of music are introduced on pages 390—406, in order that the reader, by carefully analyzing them, may obtain a view of their internal formation and may be able to prove by experiment, how far they admit of being explained and understood according to the foregoing principles.

It is true indeed that the explanation of all these examples and of every piece of music in general might be furnished with additional and more perfect light by the doctrine of the carriage of voices, since the latter does indeed afford inestimable facilities for the explanation and analysis of the different harmonic combinations and the reference of them to their appropriate simple fundamental harmonies. Meanwhile, however, I have here selected those pieces with whose explanation one may become pretty familiarly acquainted by means of the instructions already communicated. I have, moreover, every where distinguished the transition tones that occur therein by the diagonal ascending and descending strokes, (╱ and ╲,—§ 97,) so that one has only to conceive the notes thus marked to be absent and to have no further concern with them than if they were not present at all. And in this way I am satisfied that every one who has read with any degree of attention what has thus far been communicated, must understand the examples here given and their proper solution; and whoever does not satisfactorily succeed in doing this, should take the fact as an admonition to repeat his reading of what precedes.

On figure 226, p. 390.

The first measure commences with the harmonic combination [c̄ ē ḡ c̿], thus with the large three-fold chord 𝕮, and by that means impresses upon the ear the perception of the key *C*-large. (§ 191.) Hence the chord is designated by *C*:I.—The three-fold chord 𝕮 is found in an uninverted position (§ 56) and in a close position (§ 66,) and the fundamental tone in it is doubled. The base tone *c̄* is this fundamental tone itself, and on this account an *R* is placed over it, (§ 58.) The *ē*, the large third of the base tone, is also the third of the fundamental harmony, i. e. the fundamental third and is for this reason marked with a *T*. The tone *ḡ* is the large fifth and hence an *F* is placed over it,—and the tone *c̿*, the octave of the base tone, is the fundamental tone doubled, on which account it is, like the base tone, designated with an *R*.

In the second measure another harmony appears, to wit, [g b ḡ d̿], thus the large three-fold chord 𝕲.—This chord exists in the previous key *C*-large as one appropriate to the scale, belonging namely on the dominant or fifth degree of that scale. According to the law of inertia, this harmony is the dominant three-fold chord, V of *C*-large, and accordingly its tones [g b ḡ d̿] are to be marked *R*, *T*, *R*, *F*. This chord is likewise in an uninverted position and also in a pretty close position.

In the third measure the tonic harmony, namely the three-fold chord 𝕮, returns; and here again this chord appears in an uninverted position and also in a position somewhat dispersed. The base tone *c* is the fundamental, *R*.—the tone *c̄* is its duplicate, thus likewise *R*,—the tone *ḡ* is the large fundamental fifth, *F*,—and *c̄* is the large fundamental third—*T*.

In the fourth measure we have the chord [b♭ c̄ ḡ e̿,] which admits of the simplest explanation as the principal four-fold chord 𝕮^7 in the third inversion. The base tone *b♭* is thus the small fundamental seventh and is on this account marked with an *s*. The tone *c̄*, 2• (the large second) of the base tone, is the fundamental tone *R*. The tone $\bar{g}$, the 6• of the base tone, is the large fundamental fifth *F*;—and the tone $\bar{\bar{e}}$, the 4• of the base tone, is the large fundamental third, *T*. But the principal four-fold chord 𝕮^7 is not to be found in the previous key *C*-large as a combination appropriately belonging to the scale; and thus the step from the third to the fourth measure is a digressive one, and, according to the principle of inertia, is a digressive modulation into *F*-large by means of the four-fold chord of the fifth degree, or the principal four-fold chord of this new key.

I stop here and leave it to the reader himself to complete the analysis thus begun. But I insist upon it that this be done in the same full and detailed manner as that in which I have here done it; because this is the only means of accustoming one's self to clear apprehensions in relation to every note, and of acquiring an habitual ability to render to himself a satisfactory account of it However easy it may appear to any particular individual, yet many passages may occur in the sequel whose explanation will cost him an effort, and in such cases it will be of service to him to have practiced himself previously in the more simple parts.

Moreover, I have not suddenly abandoned him even in the continuation of this first exercise, simple and easy as it may be; but, on the contrary, I accompany him still a portion of the way farther, partly by designating the fundamental harmonies, and partly by designating also individual tones, so that the little which I leave for him to fill out in this example can give him no trouble at all, and will only serve to exercise him in our method of explanation and to give him the habit of rendering to himself a full and definite account of every thing.

On figure 227, pp. 390—391.

In this example more digressive modulations occur, indeed, than in the former; but still I think the decyphering of these modulations will not be at all difficult to any tolerably attentive reader of what has thus far been communicated. I leave, therefore, this example entirely to his own independent agency. I have only to request, that here again the course of procedure may be as exact and full as was enjoined in the foregoing example.

On figure 228, pp. 391—392.

This example again can furnish but little difficulty; hence a mere hint will be sufficient.

The harmony of the third quarter in the first measure, which consists merely of the tones [d f], can be designated with equal propriety either as vi or as IV.

At the fourth quarter of the second measure appears the harmony 𝕮. Taken according to the principle of inertia, it is to be marked as V of the previous key *F* large. Since, however, a kind of section terminates with the third quarter, and a new phrase begins with the 𝕮-harmony at the fourth, this 𝕮 may properly be regarded also as a new tonic harmony and may accordingly be designated with *C*: I. (§§ 205 and 221.) On a repeated hearing, especially, the ear will certainly apprehend it at once as I, because the transition into *C*, on the occurrence of the following harmony 𝕲^7, definitely exhibits itself. (§ 214.)

The harmony $\mathfrak{F}$, in the fourth measure, is, for similar reasons, not to be designated as IV of the key *C*, introduced immediately before, but as the previous *F*: I, returning with the commencement of a new section; especially since *F*, taking the piece as a whole, is the principal key, and is not yet entirely forgotten. (§ 211.)

The first half of the third quarter, in the fifth measure, can be regarded as *F*: ii, and the second half as V^7;—but either the tone $\bar{e}$ or the tone $\bar{d}$, can be regarded as a mere transition tone, and then the harmony of the whole third quarter appears as ii, in the first case, (i. e. when $\bar{e}$ is regarded as a transition tone,)—and as V^7 in the second case, (i. e. when $\bar{d}$ is taken as a transition tone.)

The ear may perhaps be in doubt at the commencement of the seventh measure, whether it ought not to take the $\mathfrak{C}$ as a new I again; but the following chord soon informs it that the $\mathfrak{F}$-harmony and the *F*-key are yet the order of the day; and on the commencement of the following eighth measure, which is precisely like the seventh, $\mathfrak{C}$ no longer appears at all equivocal, but is definitely shown to be V of the previous key *F*. (§ 214.)

Every thing else is so easy and simple, as certainly to render all farther explanation unnecessary.

On figure 229, pp. 392 (and 389.)

The example in fig. 229 is perhaps somewhat more difficult to be explained, than are those of the preceding figures. I make it an express design to exhibit in this example some passages that are of a more complicated character and that render it necessary for me here to say something to facilitate their explanation.

The harmony of the first quarter in the second measure explains itself most naturally as V^7 of *F*, thus as $\mathfrak{C}^7$ with the omission of the fundamental tone, and the tone $\bar{d}$ occurring at the second eighth explains itself in like manner to be the large ninth, as in fig. 229, *k*, p. 392.

This mode of explanation is in itself perfectly satisfactory; still, however, I will suggest, that this combination of tones is capable of being explained in yet other ways.

In the first place, namely, this following $\bar{d}$ perfectly well admits of being regarded as a mere transition tone, as in *l*, p. 392, in which case the funamental harmony would still remain $\mathfrak{C}^7$.

But, besides, this $\bar{d}$ might likewise be taken as a genuine harmonic tone, and the foregoing $\bar{e}$, on the contrary, be regarded as a tone foreign to the harmony, as in *m*, p. 392, and in this case the harmony would be, not $\mathfrak{C}^7$ but $\mathfrak{g}$.

We might, moreover, even regard both tones as genuine harmonic tones, and accordingly suppose to each of the first two eighths of the second measure a peculiar and distinct fundamental harmony, taking the first eighth to be $[\underline{g}\ \bar{e}\ \bar{g}\ \bar{b}^b]$ as $\mathfrak{C}^7$, and the second eighth to be $[\underline{g}\ \bar{d}\ \bar{g}\ \bar{b}^b]$ as $\mathfrak{g}$, as in *n*, p. 392.

All these modes of explaining the harmony in question are in themselves pretty nearly alike simple; but the two former deserve the preference, because, according to the latter, the harmonies I, ii, I, or I, V^7, ii, I, would follow one another, which harmonic successions are not in this way very usual, as we shall see when we come to a more particular treatment of the subject hereafter.

Which of the two first modes of explanation we are to choose, i. e. whether we are to regard the $\bar{d}$ as a ninth, or as a transition tone, is perfectly immaterial; since both ways are alike perfectly justifiable.

All this, indeed, is not to be perfectly explained until coming to the doctrine of the carriage of voices; yet it may here be introduced, by way of anticipation, just to furnish a hint as to the fruitfulness of the results which the doctrine of transitions will afford us in respect to the explanation of harmonies and harmonic successions. (Compare § 223.)

The harmony of the second quarter in the second measure is also most naturally explained, merely as $\mathfrak{F}$, and the tones $b^{\flat}$ and $\bar{d}$, occurring at the fourth eighth of this measure, as mere transition tones, instead of ascribing a peculiar and distinct fundamental harmony (namely $\mathfrak{B}^{\flat 7}$) to this fourth eighth, regarded as a distinct harmony [$b^{\flat}$ d f $\bar{a}$]; and especially so, considering that if we regard the matter in this latter point of view, very unusual harmonic successions would again occur, namely IV^7—V.

Different interpretations may again be put upon the third quarter of the third measure.

That is to say, if we regard the tones $\bar{a}$ and $\bar{b}$, which successively follow each other, as being both genuine harmonic tones, then two different harmonies appear at this third quarter, to wit, [d $\bar{a}$ $\bar{f}$] and [d $\bar{b}$ $\bar{f}$], in immediate succession, i. e $\mathfrak{d}$ and $\mathfrak{G}^7$, the last of which two harmonies effects a digressive modulation into *C*-large; and in this way it is marked in the figure. But besides this, still other modes of explanation are also possible. We might, namely, regard the afternote $\bar{b}$ as a mere note of transition, as in *o*, p. 392, in which case the digressive modulation would introduce itself with the fourth quarter.—But we might also take $\bar{a}$ instead of $\bar{b}$ for the transition tone, as in *p*, p. 392, in which case the digressive modulation in *C*-large would take place at the third quarter by means of the principal four-fold chord $\mathfrak{G}^7$.—We might, moreover, regard the chord [d $\bar{a}$ $\bar{f}$] as the three-fold chord of the second degree of *C*-large, especially on the repeated hearing of the passage; and, considered in this point of view, the passage admits of being explained in the manner exhibited in *q*, p. 392, and indeed as in *r* also, p. 392, if we do not in this case take the afternote $\bar{b}$ as a genuine harmonic tone.

In the fifth measure, at the second quarter, a digressive modulation takes place into the under dominant—into $B^{\flat}$-large, which however becomes virtually expunged at the following quarter. Likewise the harmony of the third quarter admits moreover of being explained in as many different ways, as did the third quarter of the third measure.

At the fourth quarter of this fifth measure there occurs a repeated return into the key $B^{\flat}$-large, and that by means of the small three-fold chord $\mathfrak{c}$ as ii of $B^{\flat}$-large,—see at *s*, p. 389,—or perhaps rather by means of the principal four-fold chord $\mathfrak{F}^7$, in case we regard the tone $\bar{g}$ as a transition tone or as a ninth.—We may, moreover, not only regard the tone $\bar{g}$ as a mere transition tone, but even $e^{\flat}$ also, and in this case the second digression into *B* -large would not occur, as is shown in *t*, p. 389.

In the following sixth measure, we have the actual appearance of the chord 𝕭^b, which may be regarded either as I, or as IV, just according as the preceding chord has been explained, as in *s* or as in *t*, p. 389.

At the second eighth of this sixth measure, d^b appears in the place of *d*. This might be regarded as a farther transient digression into b^b-small; but the tone d^b admits of being considered as a mere transition tone, which mode of explanation is really still more simple.

The chord 𝕱 appears again with the second quarter, which chord the ear is the more willing to regard as the tonic harmony again, in part because it had not yet really ceased altogether still to recognize it as such, and in part also because the chord appears in the fourth-sixth position (§ 207, *1.)

At the second half of this same quarter we have the tones *b* and $\bar{d}$, which, if reckoned as genuine harmonic tones, form in connection with the two upper tones the harmonic combination [b $\bar{d}$ f $\bar{a}$], and regarded as the principal four-fold chord 𝕲^7, contain a transient digression into *C*-large, and bring after them the large three-fold chord 𝕮, which same chord however immediately impresses the ear again as being the dominant harmony of the principal key *F*-large; see fig. 229, *s*, p. 389.—Both the after tones *b* and $\bar{d}$, however, may be explained as mere transition tones, and in this case the harmony ***F***: I continues through the whole second quarter. See fig. 229, *t*, p. 389.

Although all these resolutions of the harmonic combinations in question into transition tones cannot possibly be fully understood in the present place, yet I propose them here as a second mode of explanation merely to furnish an incidental hint showing how very much the understanding and explanation of many successions of chords is facilitated and simplified by the doctrine of transitions. Merely see, e. g. how much more simple the harmonic succession is according to the figures affixed in *t*, p. 389, than according to those attached in *s*, p. 389.

On figure 230, pp. 393—394.

This piece again is so easily deciphered, that I may with propriety leave it altogether to the individual agency of the reader alone. I have merely subjoined a few intimations in the 21st and some following measures.

On figure 231, pp. 395—396.

It is unnecessary to say much more on this piece of music also. It is not indeed quite so simple as the foregoing; but still its perfect explanation cannot be at all difficult to any attentive reader of what precedes.

A returning modulation is made, at the last quarter of the 22d measure, from the transiently introduced key *e*-small back into the principal key *D*-large, by means of the large three-fold chord 𝕲 as the harmony of the fourth degree of *D*-large. (§ 285.)

On figure 232, pp. 397—398.

I have here, for variety's sake, expressly subjoined the entire explanation, and now add, over and above this, the following particular remarks.

In the commencement of the fifth measure, a slight equivocalness is presented. That is to say, a small period, the first four measure rhythm, terminates with the fourth measure; now when the large three-fold chord $\mathfrak{C}$ appears in the following measure, the ear, even on the first hearing, is inclined to regard this $\mathfrak{C}$ as *C*: I; in other words, it already anticipates that the new period in *C*-large will follow. Inasmuch as this anticipation becomes actually fulfilled, the chord $\mathfrak{C}$ appears, on the second hearing, *definitely* and *decidedly* as *C*: I.

The second part of the march, and with it a new period again, commences with the ninth measure. The large three-fold chord $\mathfrak{C}$, with which this part begins, must appear to the ear still more as the tonic harmony, inasmuch as the first part had, in the immediately preceding measure, closed in this same key. Such indeed is the fact on the first time hearing the piece; but since the modulation after this returns again into the original principal key *F*-large, all those of us who have already heard this march many times and hence have for a long time known that it here passes again into *F*-large, no longer perceive the $\mathfrak{C}$ in question as *C*: I, but as V of *F*-large.—This is still more the case, if this second part is repeated after the close of the second part in *F*-large.

A slight digressive modulation into *g*-small is made in the middle of the eleventh measure, by means of the harmony $\mathfrak{g}$ in the fourth-sixth position; but afterwards, at the fourth quarter of the twelfth measure, the modulation returns again into *F*-large.

So also at the end of the thirteenth measure, a slight digression is made into the key of *d*-small. We should naturally suppose, as the result of this, that the chord of the second quarter of the following measure, namely, $[g\ \bar{d}^{\flat}\ \bar{e}\ \bar{b}^{\flat}]$, i. e. $\mathfrak{C}^7$, must be regarded by the ear rather as $[g\ \bar{c}^{\sharp}\ \bar{e}\ b^{\flat}]$, i. e. as $\mathfrak{A}^7$. But by no means! For, after the transient digression into *d*-small, made in the preceding measure by means of the chord $\mathfrak{A}^7$, the ear just at the point where the following small three-fold chord $\mathfrak{d}$ occurs, spontaneously conceives itself back again into the principal key *F*-large, and is therefore prepared to take the chord $[g\ \bar{d}^{\flat}\ \bar{e}\ \bar{b}^{\flat}]$ for $\mathfrak{C}^7$ as V^7 of *F*-large, notwithstanding the *small* ninth, which, as we know, transiently occurs also in a large key. (§§ 211 and 200.)

A transient digressive modulation occurs again, in the fifteenth measure, from the principal key *F*-large into the large key of its dominant—into *C*-large, by means of the transferring dominant harmony $\mathfrak{G}^7$, after which however the ear refers the $\mathfrak{C}$-harmony in the sixteenth measure immediately again to the but just quitted principal key *F*-large, as *F*: V.

In the eighteenth measure a chord appears which is borrowed from the key of *g*-small. But, (to say nothing of the fact that $\bar{f}^{\sharp}$ perfectly well admits of being regarded as being foreign to the harmony and as being a mere transition tone,) the ear has so little anticipation on the ground of this slight digression, that it, being in a manner already accustomed, from the third measure onward, to understand the small three-fold chord $\mathfrak{g}$ of the first quarter as *F*: ii, immediately refers this chord to *F*-large again, and thus in the commencement of the 19th measure spontaneously re-attunes itself to the key *F*-large.

On figure 233, pp. 398—399.

This piece of music also, considering the signs which are added here and there, is not difficult of explanation. It can be necessary only perhaps to add a few words in respect to the modulations from the 32d measure onward.

The harmony of the 32d and 33d measures is occasioned, by the action of the principle of inertia, to impress the ear as actually being $[A^b\ f\sharp\ \bar{c}\ \bar{e}^b]$, and not as $[A^b\ g^b\ \bar{c}\ \bar{e}^b]$.

In the following 34th measure, a transition is made into E^b-large.

At the second quarter of the 35th measure, we have the same harmonic combination as in the 32d measure, and nothing prevents our taking it, as it was there taken, for *c*: $^{\circ}ii^7$.—I cannot however here forbear to remark, by way of anticipation, that this combination might also with propriety be explained as $\mathfrak{A}^b$, consequently as IV of E^b-large, and that the note $f\sharp$, occurring therein, might be taken as a tone foreign to the harmony and merely a transition tone. Considered in this last point of view, the whole 35th measure would remain in E^b-large; whereas, according to the first view, a momentary digression into *c*-small would take place and the key E^b-large would not return again until in the 36th measure.—The latter mode of explanation, it is perceived, is really more simple than the first, and for this reason I have marked the place according to this view; though, at the same time, I have not the least objection to its being taken in the other point of view and marked accordingly. (§§ 51 and 223.)

The harmonic combination of the 57th measure is, when taken in connection with the preceding, not so much $[E^b\ a\ \bar{c}\ f\sharp]$, as $[E^b\ a\ \bar{c}\ \bar{g}^b]$ and consequently $\mathfrak{F}^7$, which, as a dominant harmony of transfer, points to B^b-large and then again to E^b-large itself. (§ 211.) The fact that $f\sharp$ is here written instead of g^b, occurs out of regard to the following harmony. (§ 224.)

Finally, in the 39th measure, the modulation returns into the original principal key *a*-small, by the decisive appearance of the small three-fold chord $\mathfrak{a}$ in the fourth-sixth position on a heavy part of the measure.

The following modulation,* as far as to the end of the piece, requires no farther explanation.

On figure 234, pp. 400—403.

In this number I place under the dissecter's knife a second piece of music from my own pen.

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* It will be perceived that the author uses the word "*modulation*" here, in the first sense assigned to it in his definition, namely harmonic progression in general in one key. He has also used it many times before in the same sense, in the preceding sections; but the connection in which it occurs in each instance, always determines which meaning is intended; and, besides, the term "*digressive*" is almost uniformly prefixed to the word "modulation," when the latter is applied to a transition from one key into another. The very few instances where the term "digressive" is omitted, in such a case, are only those in which its use would occasion a monotonous and clumsy repetition, and in which too the circumstances of the connection render the meaning so clear that it cannot be misunderstood. TR.

It commences with only the tone $\bar{f}$♯, which is accordingly equivocal; still the ear forms a pretty close conjecture that the passage will run either in *F*♯-large or in *f*♯-small; and, on a repeated hearing, or in case a prelude may have been played in *f*♯-small,—the commencement appears definitely as *f*♯-small, and accordingly the tone *f*♯ appears as the tonic—as the fundamental tone of the harmony 𝔣♯—as I of *f*♯-small, with the omission of the third and fifth.

The harmonic combination [f♯ $\bar{g}$♯] in the second measure explains itself most simply as °𝔤♯^{7} with the third and fifth omitted and in the third inversion; and that of the third measure then most naturally explains itself as 𝕮♯.

Were the intervals which are omitted in these first three chords to be again restored, the latter would appear somewhat as they do in fig. 234, *k*, p. 401.

The following digressive modulation into the under dominant, in the fourth measure, as also all of measures 5 and 6, and the return of the piece into the principal key by means of the small three fold harmony 𝔣♯ in the fourth-sixth position, in the seventh measure, require no particular elucidation. The notes foreign to the harmony are, as usual, marked by oblique strokes.

In the ninth measure a pause is made on the large three-fold chord 𝕮♯ of the Vth degree of the principal key *f*♯-small.

In the tenth measure, the individual tone $\bar{g}$♯ explains itself most simply as the fifth of the yet continued harmony 𝕮♯.

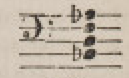
In the following 11th measure, we have the combination [$\bar{g}$♯ $\bar{a}$]. These two tones are found together in no other fundamental harmony as harmonic intervals but the large four-fold chord 𝕬^7. If, now, the combination in question were to be regarded as 𝕬^7 with the omission of the third and the fifth, then the harmonic succession from the tenth measure to the eleventh would be: *f*♯: V, *A*: I^7. But if, on the contrary, the tone *g*♯ is not taken as a genuine harmonic tone, but is regarded as a tone foreign to the harmony, (and we shall see in the sequel that this may be the case,) then $\bar{a}$ can be regarded as the fundamental third of the tonic harmony 𝔣♯, and the progression from the tenth to the eleventh measure would then be one of the most usual. Since this mode of explanation leads to far more simple results than the first, we prefer it and accordingly mark the $\bar{g}$♯ with an oblique stroke (⟍.)

The 𝕯-chord of the following 12th measure is naturally regarded by the ear as the three-fold chord of the sixth degree of the previous key.

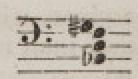
Were the intervals which are omitted in the chords of the 10th, 11th and 12th measures, to be replaced, they would appear somewhat as they do in *l*, p. 401.

The following 13th and 14th measures readily explain themselves as IV and V^7.

The harmonic combination [B♭ $\bar{d}$ $\bar{e}$♯ or $\bar{f}$, $\bar{g}$♯ or $\bar{a}$♭,] in the 15th measure, is equivocal; that is to say, it may be either 𝕭♭^{7} or °𝔢^7 or 𝕰^7. Taken in the first sense, it might occur, as is shown by the annexed representation, as V^7 in *E*♭-large or *e*♭-small,—but regarded as °𝔢^7 it might be found in *d*-small, and, taken as 𝕰^7, in *a*-small or *A*-large. But the ear cannot long be in doubt here, as what to regard this harmony. For, taken as 𝕰^7, it points to a key that stands in the nearest relationship to



𝕭♭
E♭:V^7
e♭:V^7



the previous key *f*♯-small, namely to *A*-large, or to *D*-large as the transferring dominant harmony with lowered fifth, which key likewise is more intimately related to *f*♯-small than is *a*-small or *e*-small:—reason enough surely, why the ear should at any rate receive this combination as $\mathfrak{E}^7$. (The fact that here also the tone ē♯ or f̄ is not written f̄ but ē♯, arises in part from the circumstance that $\mathfrak{e}^\sharp$ had already occurred in the foregoing chord (§ 224,) and in part from the consideration that the chord itself admits of being explained in another way, namely as actually being [B♭ d ē♯ ḡ♯,] as we have already suggested in § 94.

In the 16th measure we have a confirmation of the afore-mentioned expectation of the ear, for the key *D* there makes its appearance, namely $\mathfrak{D}$ in the fourth-sixth position.

In the 17th measure we have again a harmony borrowed from *A*-large, namely [G♯ d ē♯ or f̄ and b̄] according as a transferring dominant chord, which (unless we are disposed to explain it as a mere apparent chord,) is at least only a very unimportant digression from *D*-large. (§ 211.)

The following measures, 18, 19, and 20, readily explain themselves of their own accord. The tone *b* in the 19th measure may at pleasure be regarded either as a large ninth or as a transition tone.

With the 20th measure ends a principal period in *D*-large. A new period begins with the 21st measure and that too with the harmony $\mathfrak{f}^\sharp$, which the ear accordingly is the more ready to recognize as the returning original tonic harmony.

In the following 22d measure again a digressive modulation is made into *b*-small, by means of the principal four-fold chord $\mathfrak{F}^{\sharp 7}$ in the third inversion.

The harmony of the 23d measure [d♯, a, b♯ or c̄, and f̄♯], considered as $\mathfrak{B}^7$, would point to *e*-small, but, considered as $\mathfrak{C}^{\sharp 7}$ it would, as the dominant of transfer, indicate *f*♯-small (in like manner as the harmony [c̄ f♯ ā ē♭] in fig. 191, *k*, p. 357, indicated *c*-small.) On hearing this modulation for the first time, the ear finds it difficult to decide definitely and conclusively for the one or the other of these meanings, and thus the chord in question appears to it as probably being *a really equivocal* one.

In the 24th measure we find another harmony that is equally equivocal. That is to say, if we choose to regard that of the foregoing 23d measure as e:V^7, then that of the 24th measure appears first of all as [d a c̄ f̄♯] and accordingly as the principal four-fold chord of the key *G*-large, lying next to this *e*-small. But if we take the 23d measure as V^7 of *c*♯-small, and refer it again, in this capacity, as a transferring dominant chord, to *f*♯-small, the 24th measure appears rather as a four-fold chord with small fifth on the second degree of *f*♯-small (with an accidentally elevated third and furnished with a small ninth instead of the fundamental tone) and hence as [d a b♯ f̄♯]. Here also it might be difficult definitely to determine, whether the ear will perceive this chord in the one way or in the other, and especially on the first hearing; and thus may this harmony also, like its predecessor, be regarded as actually equivocal.

The principal key *f*♯-small definitely and decidedly returns again in the following 25th measure, with the small three-fold chord $\mathfrak{f}^\sharp$ in the fourth-sixth position, and thereby as it were confirms the fact, that the harmonies of the two preceding measures were actually $c^\sharp$:V^7, and $f^\sharp$:${}^\circ\mathrm{II}^7$, and that they were not e:V^7 and G:V^7; and for this reason the ear, on repeatedly hearing the piece, will understand the 23d and 24th measures in the former way rather than in the latter. (And, by the way, this latter fact moreover explains the reason why I write $b^\sharp$ in preference to $\bar{c}$ in the 23d and 24th measures;—if indeed so trivial a circumstance is worth the assignment of a reason. (§ 224.)

In the 26th measure, the harmony [$B^\sharp$ a $\bar{d}^\sharp$ $\bar{f}^\sharp$] announces a digressive modulation into the realm of the key $c^\sharp$-small—a key that stands in the first degree of relationship to the previous key $f^\sharp$-small, from which point the progression then goes, in the 27th measure, by means of the principal four-fold chord $\mathfrak{B}^7$, into the key *E*-large—a key which again stands in the nearest degree of relationship to the immediately preceding one. But this key also is immediately supplanted again; for, in the next following 28th measure the small three-fold chord $\mathfrak{d}^\sharp$ in the fourth-sixth position introduces a key very remote from *E*-large, namely the key $d^\sharp$-small.

The chord of the following 29th measure, considered as [A $b^\sharp$ $\bar{d}^\sharp$ $\bar{f}^\sharp$] would indicate the key $e^\sharp$-small—a key sustaining the horizontal relationship in the second degree to the just introduced key $d^\sharp$-small; but regarded as [G× $b^\sharp$ $d^\sharp$ $\bar{f}^\sharp$] it would refer to $a^\sharp$, which is related to $d^\sharp$ in the first degree: and indeed, according to § 211, it would even refer to $d^\sharp$ itself. Thus it is readily seen that this chord really is not $\mathfrak{G}^{\sharp 7}$, but $\mathfrak{E}^{\sharp 7}$, and that the tone *G*× is written under the form of *A* merely for the purpose of making it appear the more common and the less strange and singular. (§ 224, at the end.)

In the 30th measure, however, the principal four-fold chord $\mathfrak{G}^{\sharp 7}$ definitely introduces the key $c^\sharp$, and in this the chord $\mathfrak{A}$, occurring in the following 31st measure, is found as VI.

In the 32d measure the harmony $\mathfrak{C}^{\sharp 7}$ carries us again into $f^\sharp$-small; but in the following 33d measure this key is again exterminated by the harmony [$B^\sharp$ $d^\sharp$ $f^\sharp$ $\bar{a}$] which is a harmony foreign to its scale, and which, on the other hand, in itself considered, points to $c^\sharp$ or $C^\sharp$, and again also, considered as the dominant harmony of transition, refers to the principal key $f^\sharp$ small, and according to which the $\mathfrak{C}^\sharp$ harmony of the 34th measure definitely appears again as the dominant three-fold chord of the principal key $f^\sharp$-small. The tone *d*, in the 35th measure, may either be regarded as a ninth of the harmony $\mathfrak{C}^{\sharp 7}$, or as a mere transition tone.

I have, from the 21st measure to the present point, followed the thread of modulation with the utmost definiteness; it is not to be denied, however, that, in consequence of the frequently occurring equivocal chords, the accumulated partial digressive modulations, &c., this thread is sometimes rather complicated, uncertain and difficult to be followed, so that the ear for a moment easily loses it (§ 220,) and does not find itself perfectly righted again until arriving at perhaps the 33d, 34th, or 35th measure. (§ 223.)

In the 37th measure the tones $\bar{a}^\sharp$ and $\bar{\bar{c}}^\sharp$ announce the commencement of a new set or passage in $F^\sharp$-large, and the following tones $\bar{f}^\sharp$ and $\bar{a}^\sharp$ confirm it. From this point onward to the end, the piece remains as a whole in the key $F^\sharp$-large.

All the following measures, as far as to the 55th, explain themselves so easily, that a word need not be said in relation to them. None but the 55th could afford the least difficulty. The most direct and immediate explanation is that which is affixed to the notes; but, if we regard several tones as mere transition tones, we can explain the passage according to the more simple succession of harmonies exhibited in *m* and *n*, p. 403.

The 56th measure, it is perceived, makes a momentary digression into *d*♯-small; but immediately in the following 57th measure the small three-fold chord 𝔤♯ appears again as the harmony of the second degree of *F*♯-large. (§ 211.)

The harmonic combination [d, $\bar{f}^\sharp$, $\bar{g}^\times$ or $\bar{a}$, and b♯,] in the 58th measure, (unless it be regarded as [d $\bar{f}^\sharp$ $\bar{g}^\times$ $\bar{b}^\sharp$] and explained as a mere apparent chord,) contains, regarded as [d $\bar{f}^\sharp$ $\bar{a}$ $\bar{b}^\sharp$] and taken as the transferring dominant chord 𝔊♯ with lowered fifth, a momentary digression into *C*♯-large, which however is immediately recalled by the harmony of the following measure.

The 59th measure, again, is also capable of different interpretations; namely, as in *o*, or as in *p*, p. 403. The latter mode of explanation is to be preferred, as being the most simple.

On figure 235, pp. 404—406.

This piece of music is commenced on the tone *C* merely with a *tremolo* on the kettle drum; the tones $\bar{c}$, $\bar{e}\flat$ and *g* in the vocal parts appear for the first time in the second and third measures, and determine the key to be c-small.

The harmony 𝔄♭ appears in like manner, in the fifth measure, as the large three fold chord of the sixth degree of the small scale,—and, in the eighth measure, the four-fold chord of the second degree, with elevated third and in the second inversion (as the chord of the superfluous sixth,) and indeed not only without the original seventh *c*, but also without the fundamental tone or the ninth—*d* and *e*♭. This harmonic combination, which is in itself unusual, obtains a still more marked and extraordinary character from the circumstance that the base tone *A*♭ is nothing but a drum tone. (Comp. § 91 at the end and fig. 133, p. 214.) (I here, as well as every where else in technics, abstain from all exhibitions of aesthetic views which might determine me to choose this or that harmony or harmonic succession, and the like, since we here have to do merely with technical, and indeed with dry grammatical, analysis.)

In the commencement of the 9th measure, one may conceive the combination to himself either as *c*:I, or as *c*:V; the latter however is the more natural.

And in like manner one will conceive to himself the combination in the commencement of the 10th measure rather as 𝔊, than as 𝔠; and so also in the 11th and 12th measures.

The harmony [g a♭] of the 13th measure explains itself very naturally as the large four-fold chord of the sixth degree of the previous key *c*:small; and in the following measure appears the harmony 𝔇♭, which is a harmony foreign to the previous scale, and which, according to the principle of inertia, will impress the ear as VI of the key *f*-small—the nearest relative of the preceding key *c*-small.

With the restoration of the intervals omitted in measures 12, 13 and 14, the latter would appear somewhat as exhibited in fig. 235, *k*, p. 406.

The series of chords in the 12th, 13th and 14th measures, which has just been considered, has a great external resemblance to the one we saw in the 10th, 11th and 12th measures of the example in fig. 234, p. 400: and yet the two are in substance essentially diverse. It may not be uninteresting to compare the two somewhat more particularly.

(1.) *In the former case*, the individual tone $\bar{g}\sharp$, with which the phrase commences, is the large fundamental fifth, *F*, of the harmony V, (i. e. of the dominant three-fold chord:)—whereas, *in the latter case*, the individual tone *g* itself is the fundamental tone, *R*, of the dominant harmony.

(2.) *There*, the tonic harmony followed the dominant harmony: but *here*, the large four-fold chord of the sixth degree follows the dominant harmony; and consequently, *there*, the tone $\bar{a}$ is the small fundamental third of the tonic harmony; but *here* the tone $a\flat$ is the fundamental tone of the harmony VI^{7};—*there* the tone $\bar{g}\sharp$ is foreign to the harmony, but *here* the tone *g* is the large fundamental seventh.

(3.) And besides, *there* the harmonic progression from the 11th to the 12th measure is entirely different from that which *here* takes place from the 13th to the 14th measure; *the former* is a succession of harmonies appropriate to the scale, namely I—VI, whereas *the latter* is a digressive modulation, namely c:VI^{7}—f:VI.

Indeed, the above mentioned three measures of fig. 235, p. 404, are moreover not unlike the first three measures of the example in fig. 234, p. 400; but there is really in this case a still more essential difference. For *there* the first individual tone $\bar{f}\sharp$ is the fundamental tone of the tonic harmony, the two tones $\bar{f}\sharp$ and $\bar{g}\sharp$ of the second measure are the original seventh and the fundamental tone of the four-fold chord of the second degree of a small scale; and the tones $\bar{c}\sharp$, $\bar{e}\sharp$ and $\bar{g}\sharp$ of the third measure are the fundamental tone, the third and the fifth of the dominant three-fold chord.

For the purpose of facilitating the not uninteresting comparison of these three places so similar externally and yet so essentially different, I place them in fig. 235, *m*, *n*, *o*, p. 406, all three along side of one another, transposing those which are borrowed from fig. 234. The signs affixed render the essential difference sensible.

The harmony of the 15th measure of the example in fig. 235, p. 404 namely [c g♭ a $\bar{e}$♭] or [c f♯ a $\bar{e}$♭] seems to the ear, according to the principle of inertia, if we direct our view simply to the preceding measure, to be the dominant four-fold chord $\mathfrak{F}^{7}$ of the key *b*♭-small—a key which stands in the first degree of relationship to *f*-small of the foregoing measure, and thus to be [c g♭ a $\bar{e}$♭: but since, taking it as [c f♯ a $\bar{e}$♭] and therefore as $\mathfrak{D}^{7}$, it would stand again in a close connection with the still unforgotten principal key of the piece, namely *c*-small, (§ 213,) so the ear is quite undecided, for which of the two harmonies to take the combination in question; and hence this combination is justly to be regarded as being *actually equivocal*.

The following chord also, [c♭ g♭ a $\bar{e}$♭] or [c♭ g♭ b♭♭ $\bar{e}$♭,] in the 16th measure, might, not improperly, be called equivocal. In the former sense it would, as $\mathfrak{F}^{7}$ with lowered fifth, refer to *B*♭-large,—or, as $°\mathfrak{f}^{7}$ with elevated third, to *e*♭-small;—but taking it to be [c♭ g♭ b♭♭ $\bar{e}$♭,] as $\mathfrak{C}\flat^{7}$, it would refer to *F*♭-large,—(or, as [B f♯ a $\bar{d}$♯, to *E*-large.] Such a digressive modulation into *F*♭ or *E* would, it is true, be a somewhat remote one; but still, as may be seen in *p*, p. 406, it would not, after the foregoing equivocalness, appear at all surprising and unexpected to the ear, and thus would not, perhaps, at the harmony of the 16th measure, be less anticipated and expected by the ear, than the key *e*♭-small.

But in the 17th measure, this fluctuation of the ear between *e*♭-small and *E*-large is terminated by the appearance of the small three-fold chord $\mathfrak{e}\flat$ in the decisive fourth-sixth position.

The harmony [F a♭ d̄ f̄,] in the 25th measure, is equivocal in like manner as the harmonic combination [B f b d̄] in fig. 220, p. 370; but in the following 36th measure, the small three-fold chord $\mathfrak{c}$ appears as the tonic harmony in the decisive fourth-sixth position.

A large three-fold chord appears, in the 37th measure, instead of the expected small tonic three-fold chord, but it is immediately followed in the 38th measure, by the harmony $\mathfrak{C}^7$, in the form of [C g b♭ d♭ ē,] i. e. with the small added ninth and the omission of the fundamental tone, which latter harmony points to *f*-small, though in the 39th measure *F*:I appears in its stead.

In the second half of the 39th measure appears the harmonic combination [C a♭ b d̄ f̄,] which indeed my readers would find it impossible to explain *from the instruction hitherto given*, did I not tell them, that they must at once conceive the base tone *C* to be absent, as being a tone foreign to the harmony and that, thus they must proceed just as if it did not occur in the combination. In this way, the remaining tones [a♭ b d̄ f̄] as $\mathfrak{G}^7$ refer to *c*-small.

In the 40th and 41st measures we have a repetition of all that had passed, both as to matter and manner, in the 38th and 39th measures, after which finally, from the 42d measure onward, the large three-fold chord $\mathfrak{C}$ dies away; and, in the last measures, a thunder of the kettle drums, which is heard however at a distance, once indeed rising to a *fortissimo* but then again vanishing away, closes the whole.

In like manner as we have analized the foregoing piece of music, we will also furnish an analysis of *Mozart's* celebrated *introduction* to his very splendid *Violin Quartett in C-large*,—a passage whose explanation has for several years past engaged so many pens in Italy, Germany and France. Since however, in addition to other difficulties, many tones foreign to the harmony are essentially and necessarily involved in the explanation, it will be better to reserve the analysis of this most interesting passage till we arrive at a more advanced period of the work.*

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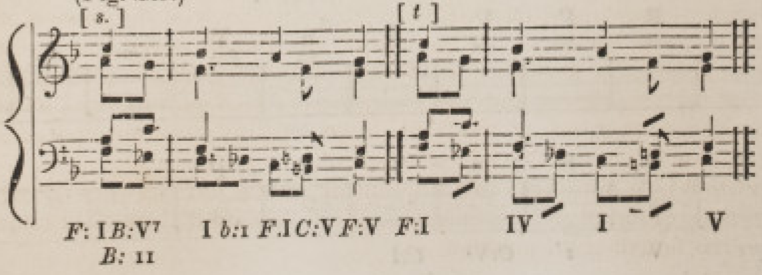
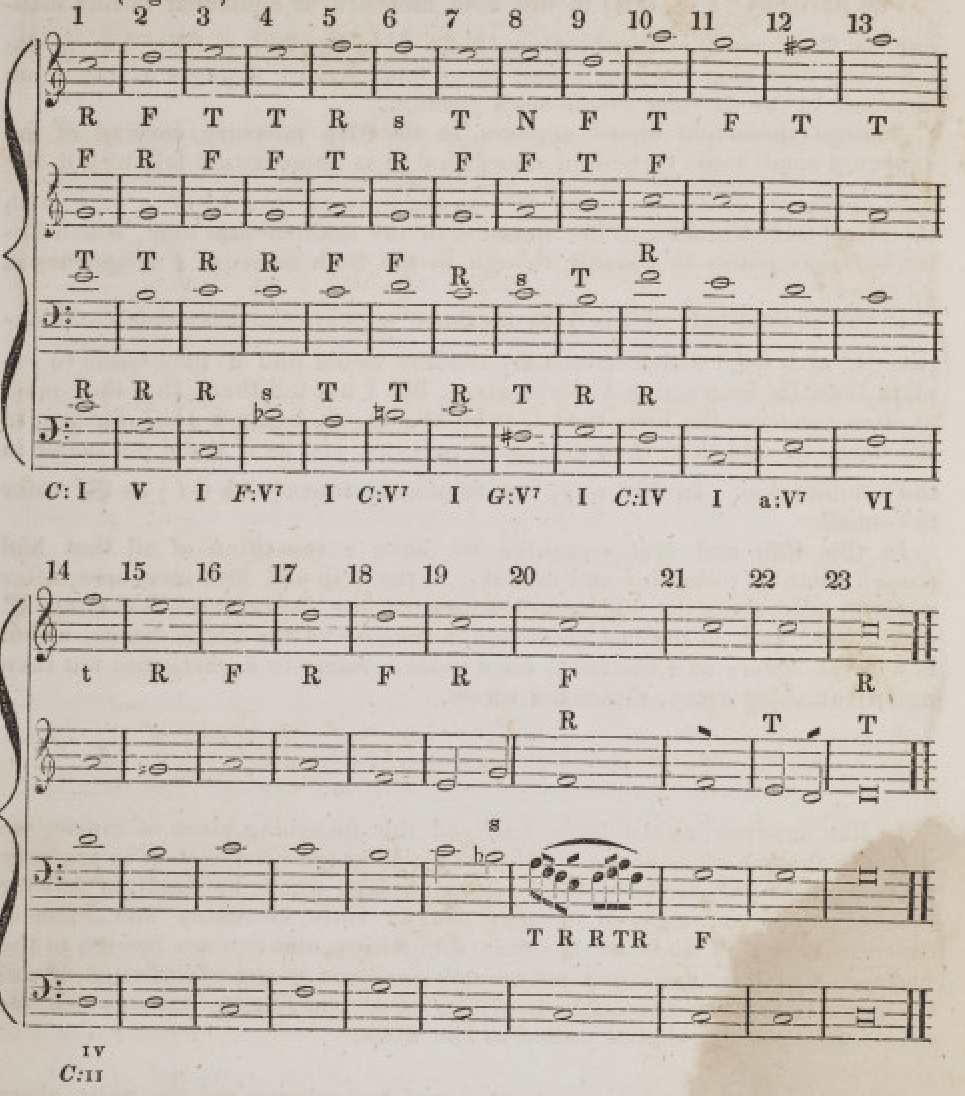
* The German edition of this work consists of four volumes, and the matter above translated is in the second:—the author in stating the reasons why he does not here introduce the analysis of Mozart's Violin Quartett, says also that its introduction here would unduly swell the size of the second volume, and that for this reason also it had better be postponed to the third volume. The assignment of this reason in the translation would not be appropriate, because the entire work is now to be published in one, or, at most, in two volumes. Tr.

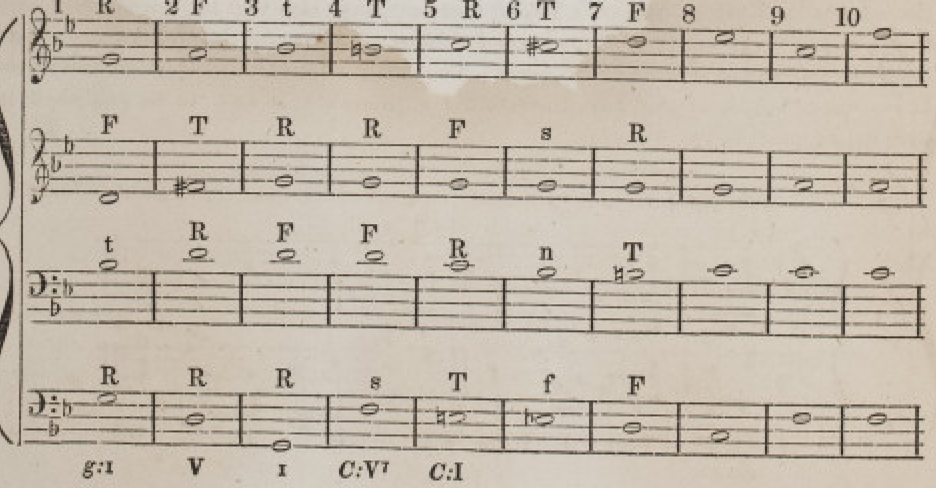
(Fig. 229.)

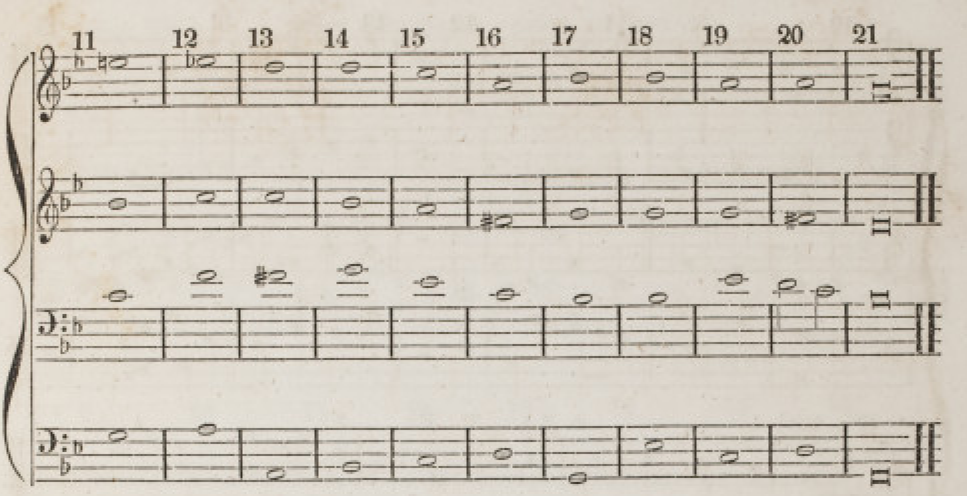


(Fig. 226.)

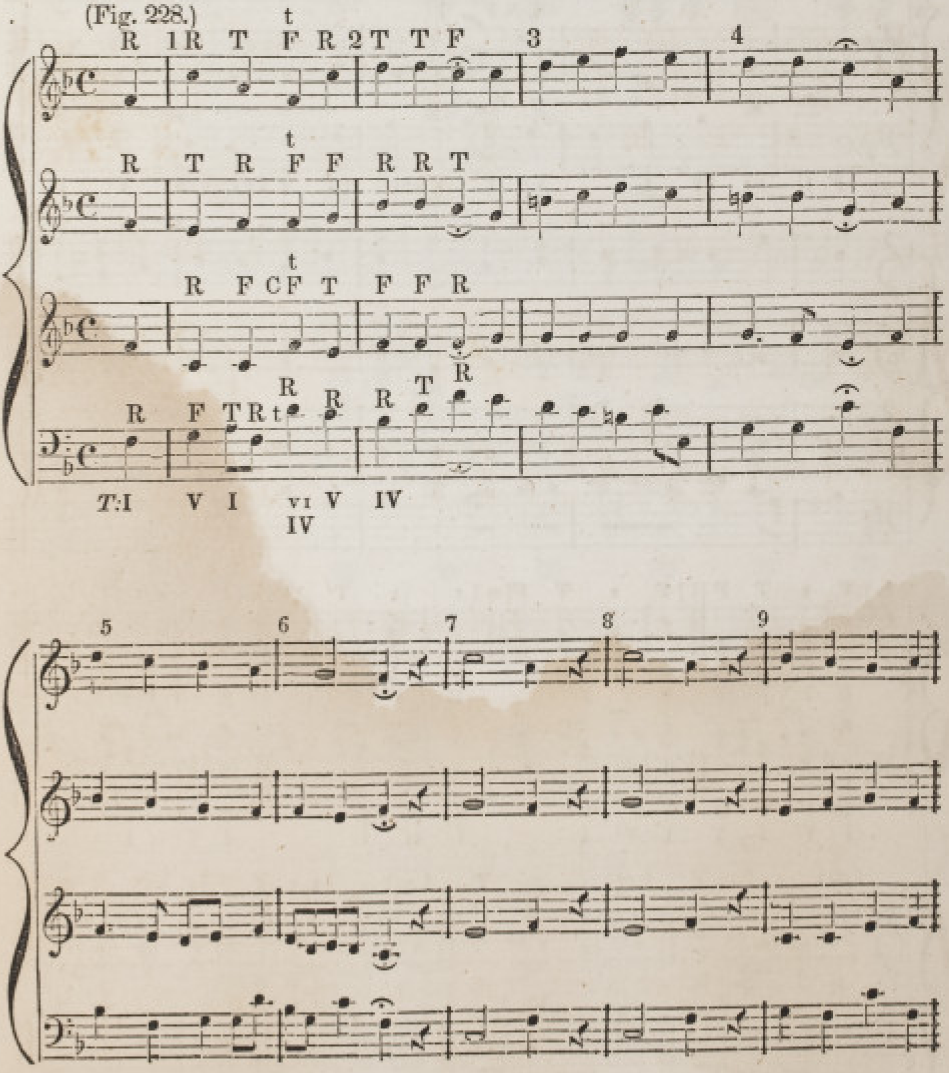

1 2 3 4 5 6 7 8 9 10 11 12 13
R F T T R s T N F T F T T
F R F F T R F F T F
T T R R F F R s T R
R R R s T T R T R R
C: I V I F:V7 I C:V7 I G:V7 I C:IV I a:V7 VI
14 15 16 17 18 19 20 21 22 23
t R F R F R F R
R T T
s
T R R TR F
IV
C:II

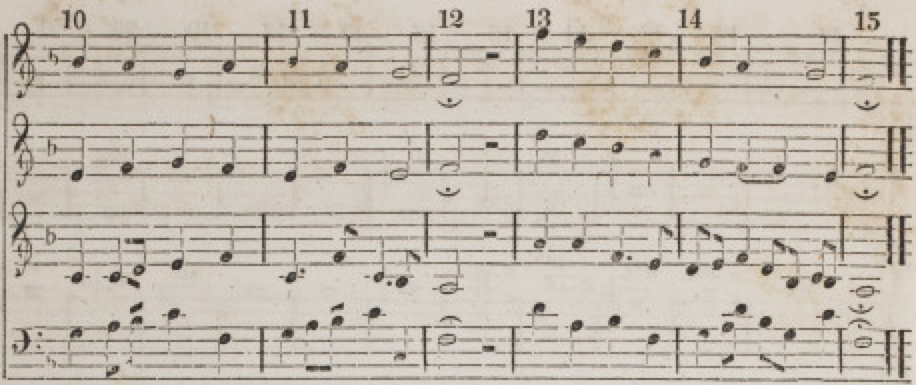
(Fig. 227.)


1 R 2 F 3 t 4 T 5 R 6 T 7 F 8 9 10
F T R R F s R
t R F F R n T
R R R s T f F
g:I V I C:V7 C:I

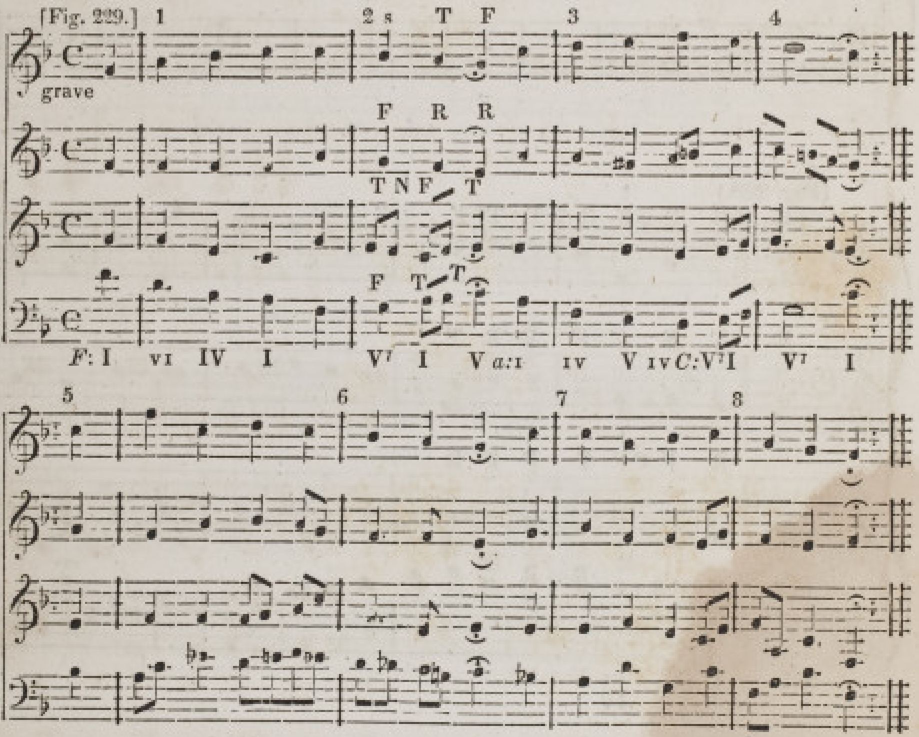

II
II
II
II

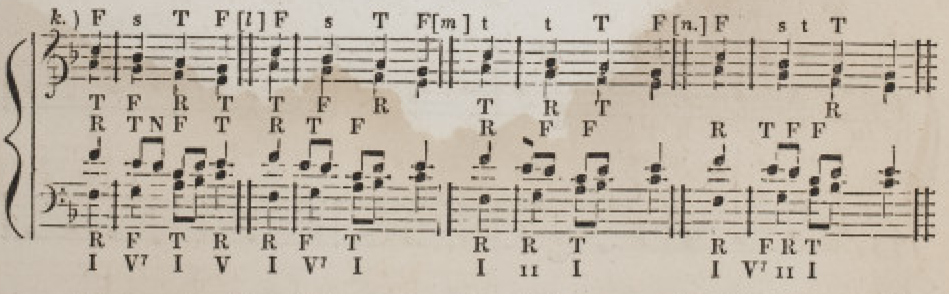
(Fig. 228.)

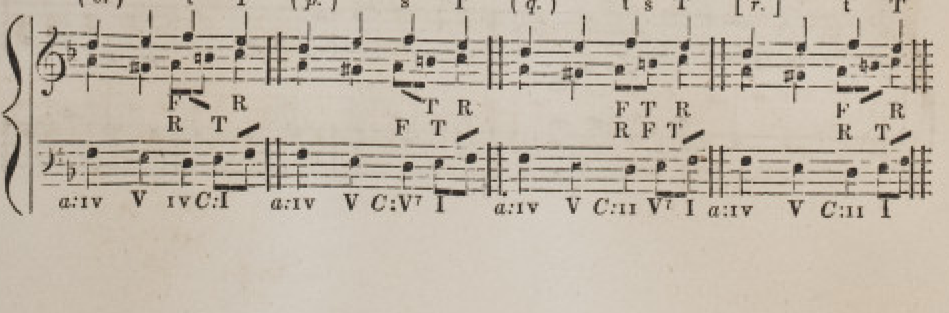

R 1R T F R 2T T F 3 4
t
R T R F F R R T
t
R F C F T F F R
t
R F T R t R R R T R
T:I V I vi V IV
IV
5
6
7
8
9



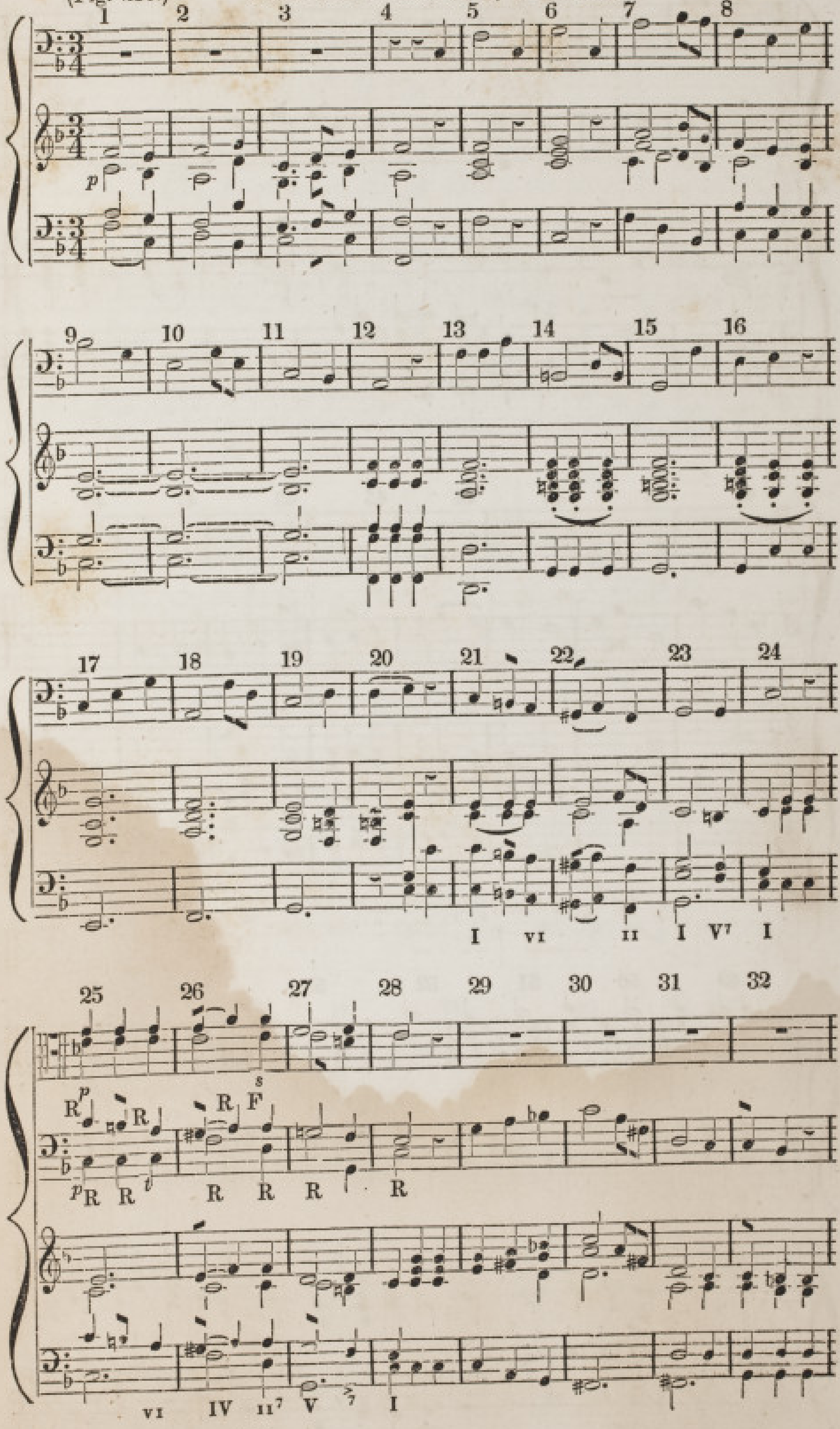
[Fig. 229.]

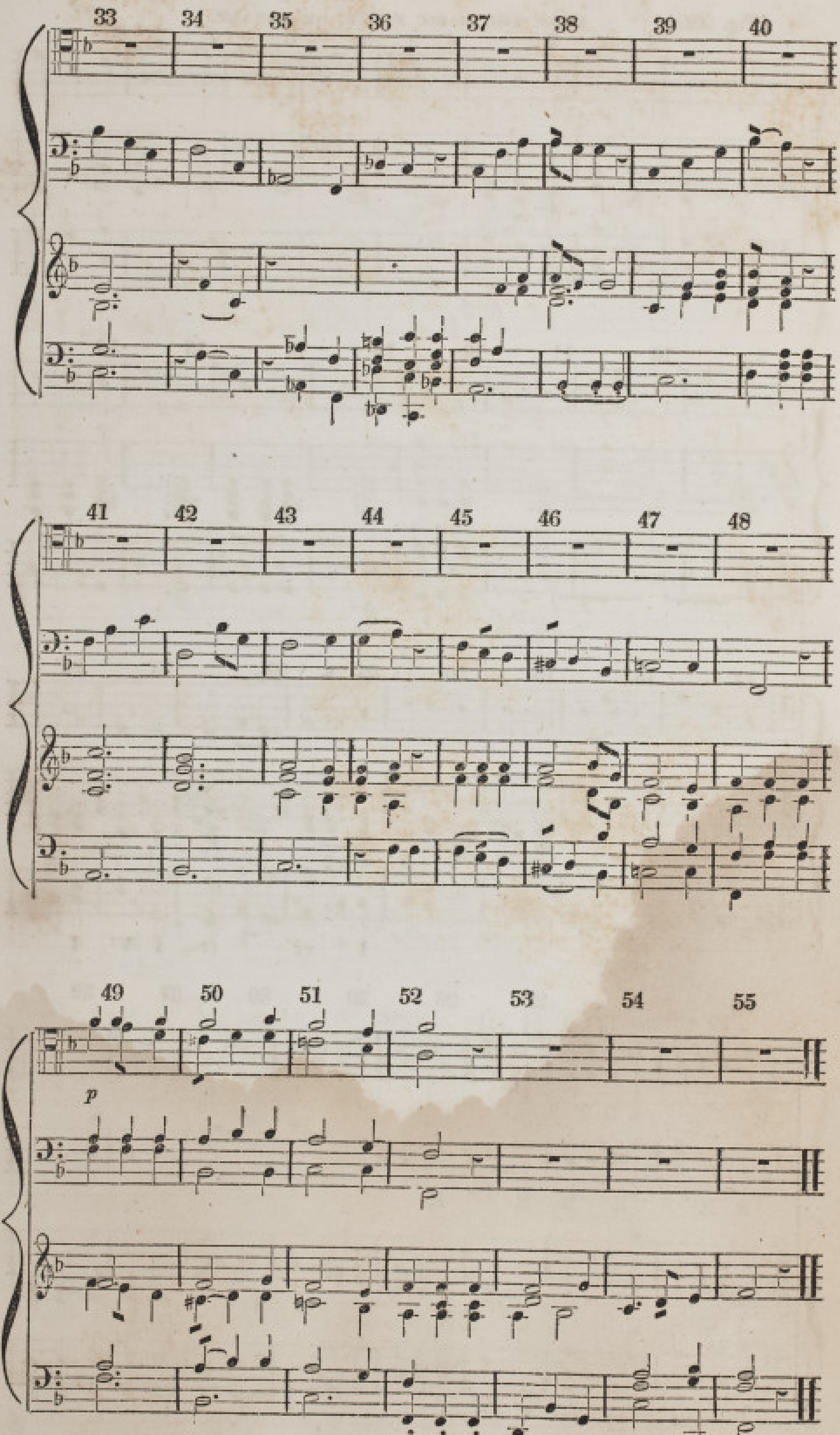

1
2 s T F
3
4
grave
F R R
T N F T
F T T
F: I vi IV I V7 I V a:I iv V iv C:V7 I V7 I
5
6
7
8


k.) F s T F [l] F s T F [m] t t T F [n.] F s t T
T F R T T F R T R T R
R T N F T R T F R F F R T F F
R F T R R F T R R T R F R T
I V7 I V I V7 I I ii I I V7 ii I

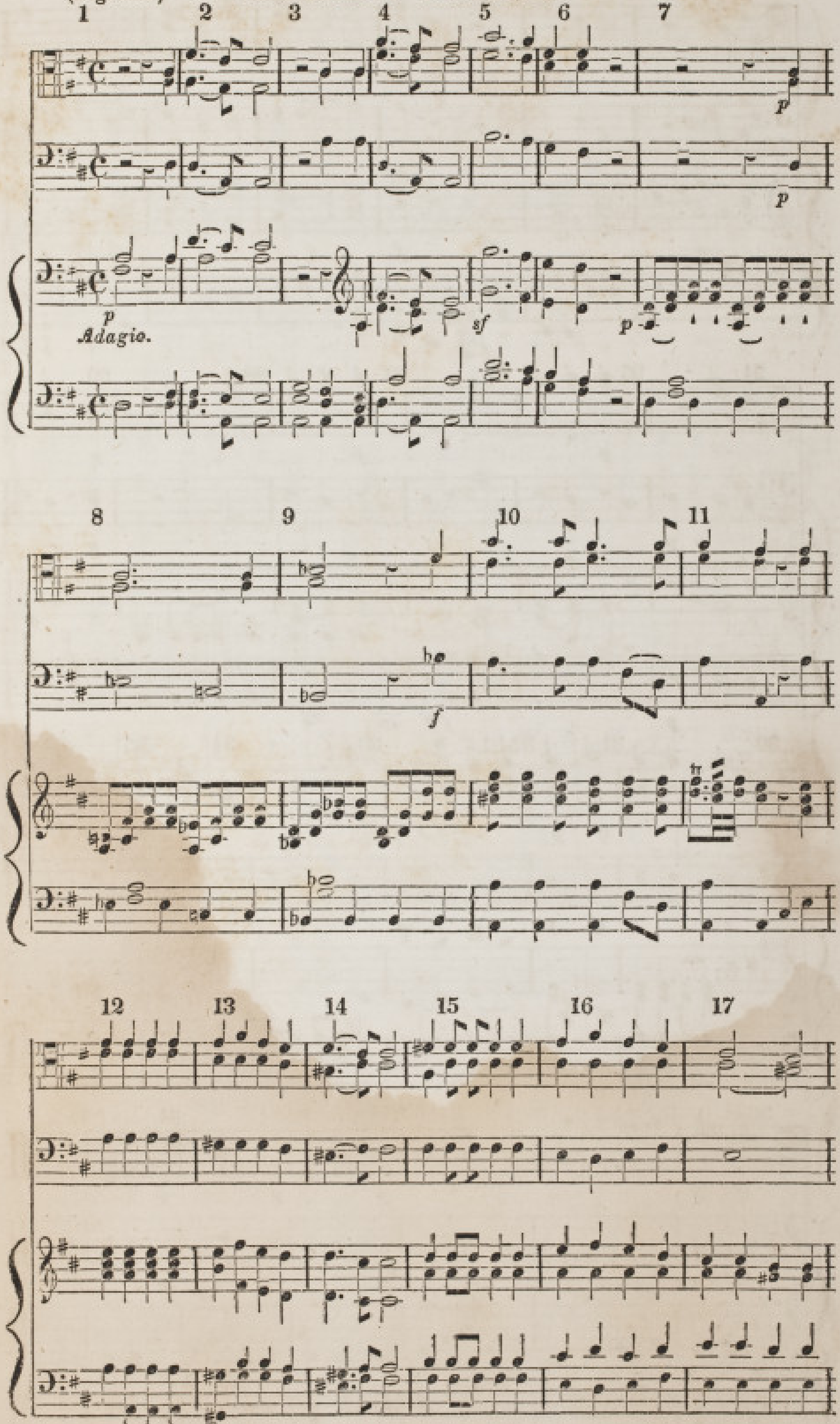

(o.) t T (p.) s T (q.) t s T [r.] t T
F R T R F T R F R
R T F T R F T R T
a:iv V iv C:I a:iv V C:V7 I a:iv V C:ii V7 I a:iv V C:ii I

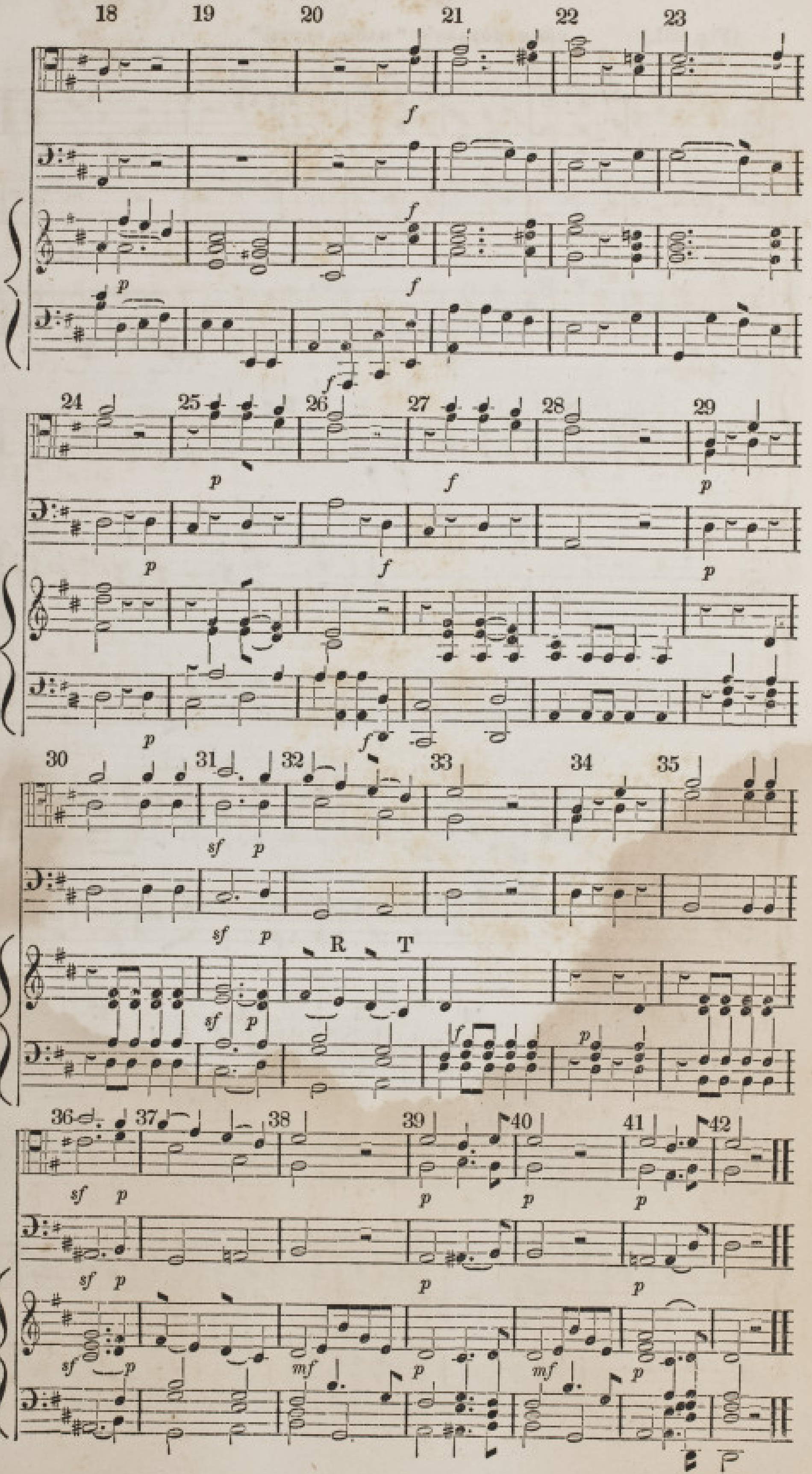
(Fig. 230.) FROM THE MAGIC FLUTE, OF MOZART.


1 2 3 4 5 6 7 8
p
9 10 11 12 13 14 15 16
17 18 19 20 21 22 23 24
I vi ii I V7 I
25 26 27 28 29 30 31 32
R p R R R F s
p R R t R R R R
vi IV ii7 V 7 I


p

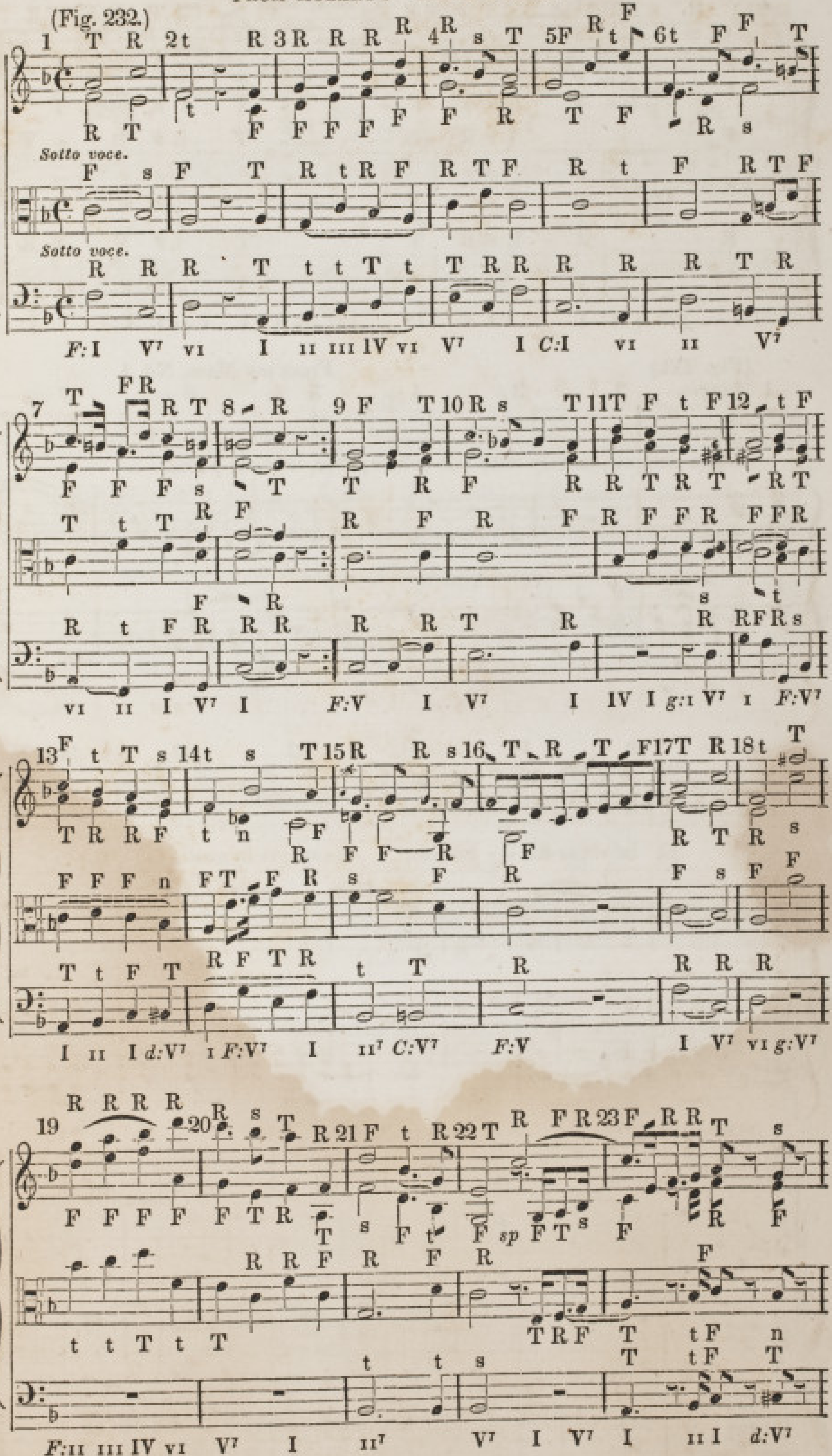
(Fig. 231.) FROM MOZART'S "MAGIC FLUTE."

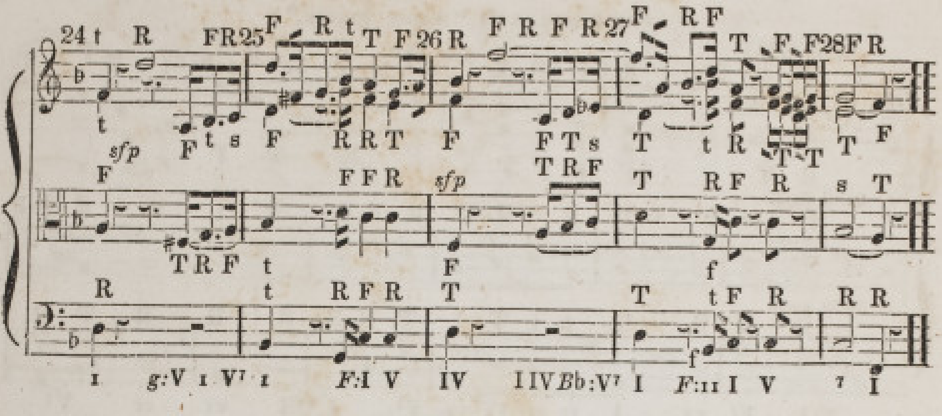

1
2
3
4
5
6
7
p
p
p
Adagio.
sf
p
8
9
10
11
f
12
13
14
15
16
17


18
19
20
21
22
23
f
f
f
p
f
24
25
26
27
28
29
p
f
p
p
f
p
p
30
31
32
33
34
35
sf
p
sf
p
R
T
sf
p
f
p
36
37
38
39
40
41
42
sf
p
p
p
p
sf
p
p
p
sf
p
mf
p
mf
p

FROM MOZART'S "MAGIC FLUTE."

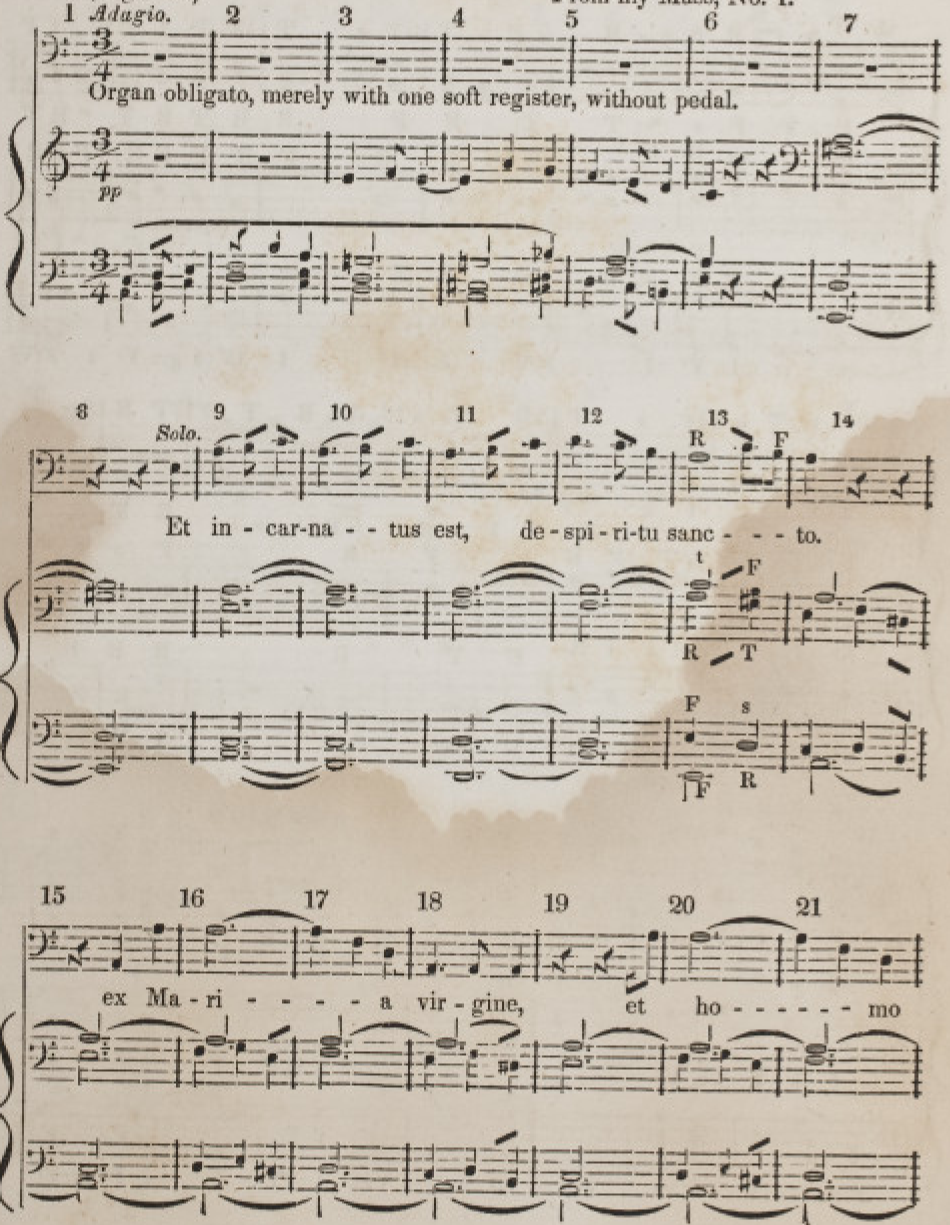
(Fig. 232.)

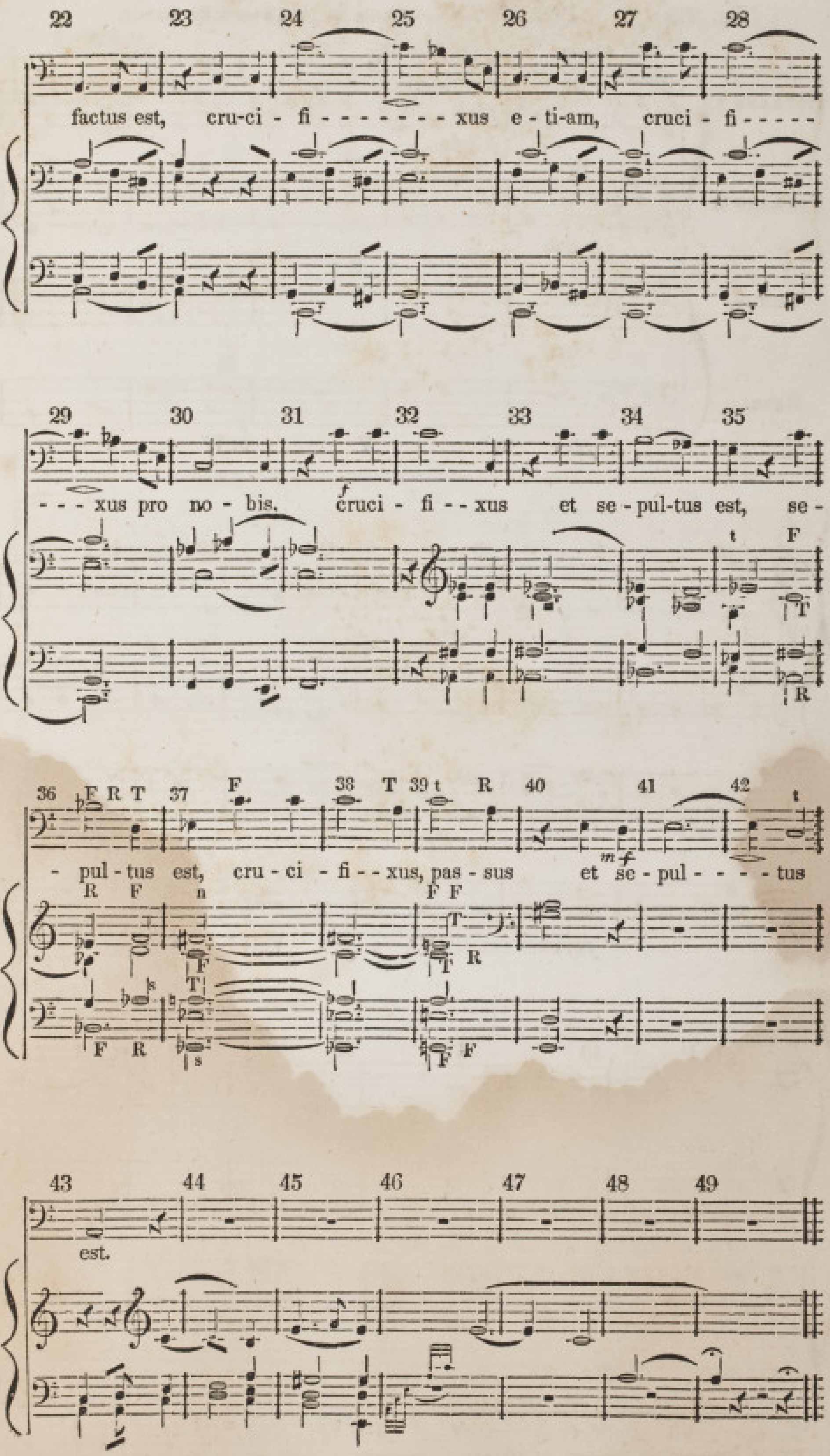

Sotto voce.
Sotto voce.
F:I V7 vi I ii iii IV vi V7 I C:I vi ii V7
vi ii I V7 I F:V I V7 I IV I g:i V7 i F:V7
I ii I d:V7 i F:V7 I ii7 C:V7 F:V I V7 vi g:V7
F:ii iii IV vi V7 I ii7 V7 I V7 I ii I d:V7


24 t R FR 25 F R t T F 26 R F R F R 27 F R F T F 28 F R
sfp
sfp
I g:V I V7 I F:I V IV I IV Bb:V7 I F:II I V 7 I

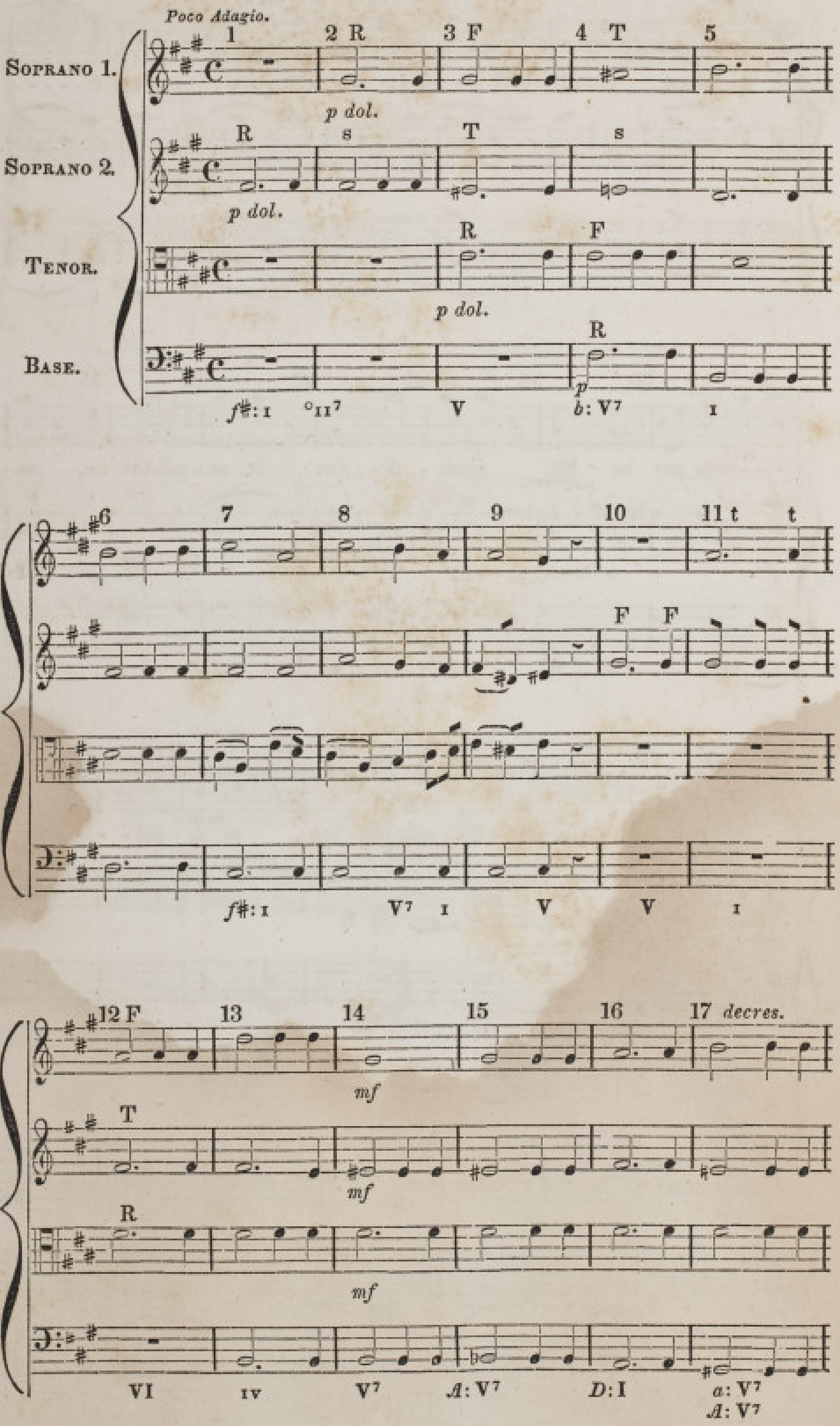
(Fig. 233.)

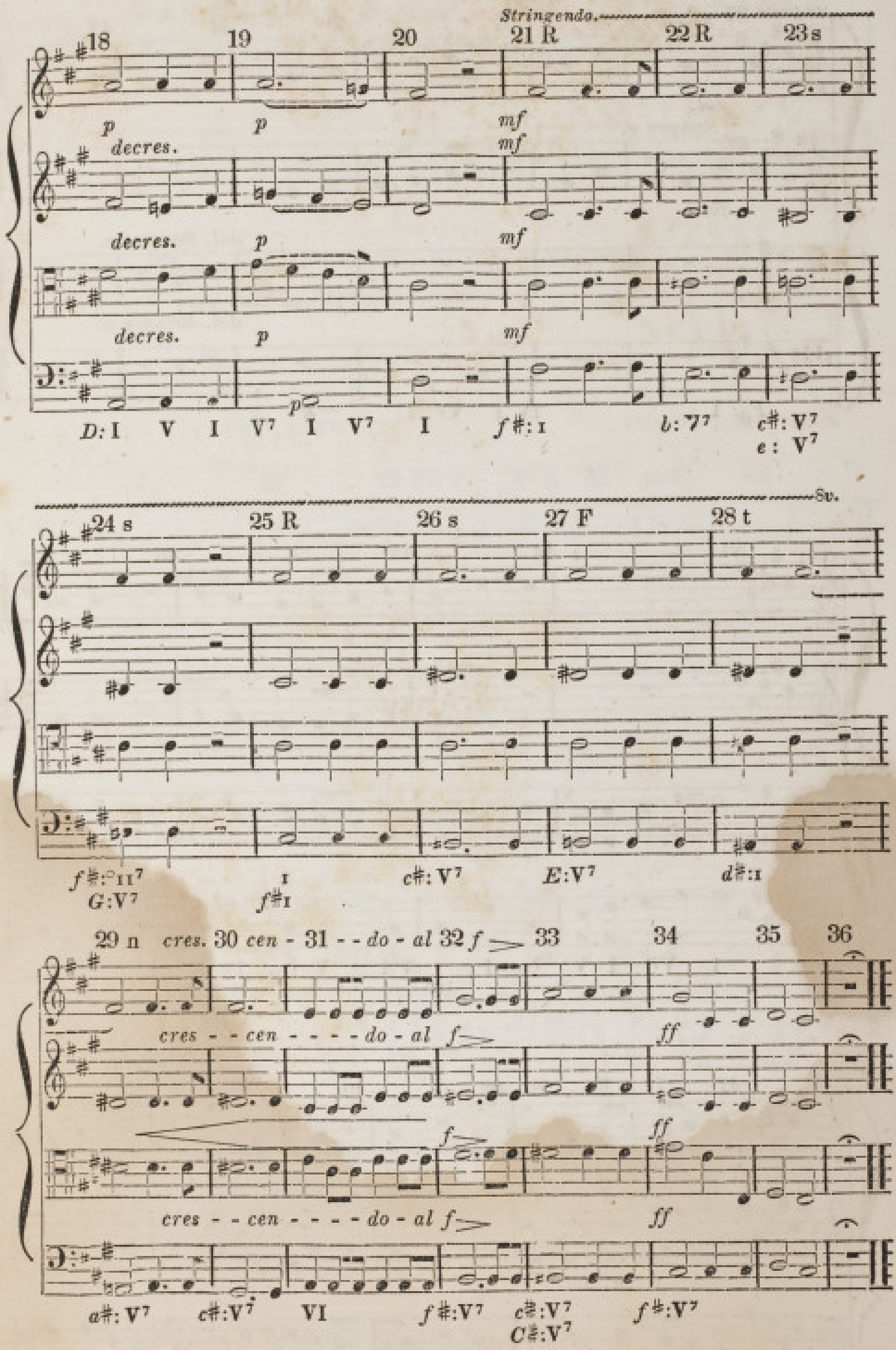
From my Mass, No. 1.

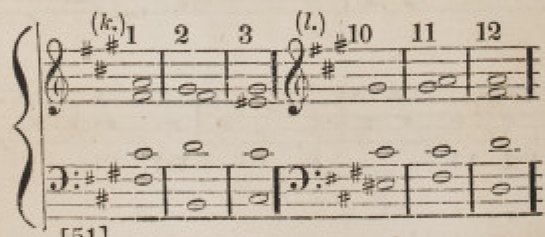

1 Adagio. 2 3 4 5 6 7
Organ obligato, merely with one soft register, without pedal.
pp
8 9 10 11 12 13 14
Solo.
Et in - car-na - - tus est, de - spi - ri - tu sanc - - - to.
15 16 17 18 19 20 21
ex Ma - ri - - - - a vir - gine, et ho - - - - - - mo


22 23 24 25 26 27 28
factus est, cru-ci - fi - - - - - - - - xus e - ti-am, cruci - fi - - - - -
29 30 31 32 33 34 35
- - - xus pro no - bis, cruci - fi - - xus et se - pul-tus est, se -
f
t F
T
R
36 F R T 37 F 38 T 39 t R 40 41 42 t
- pul - tus est, cru - ci - fi - - xus, pas - sus et se - pul - - - - tus
mf
R F n F F
F T R
T s
F R s F F
43 44 45 46 47 48 49
est.

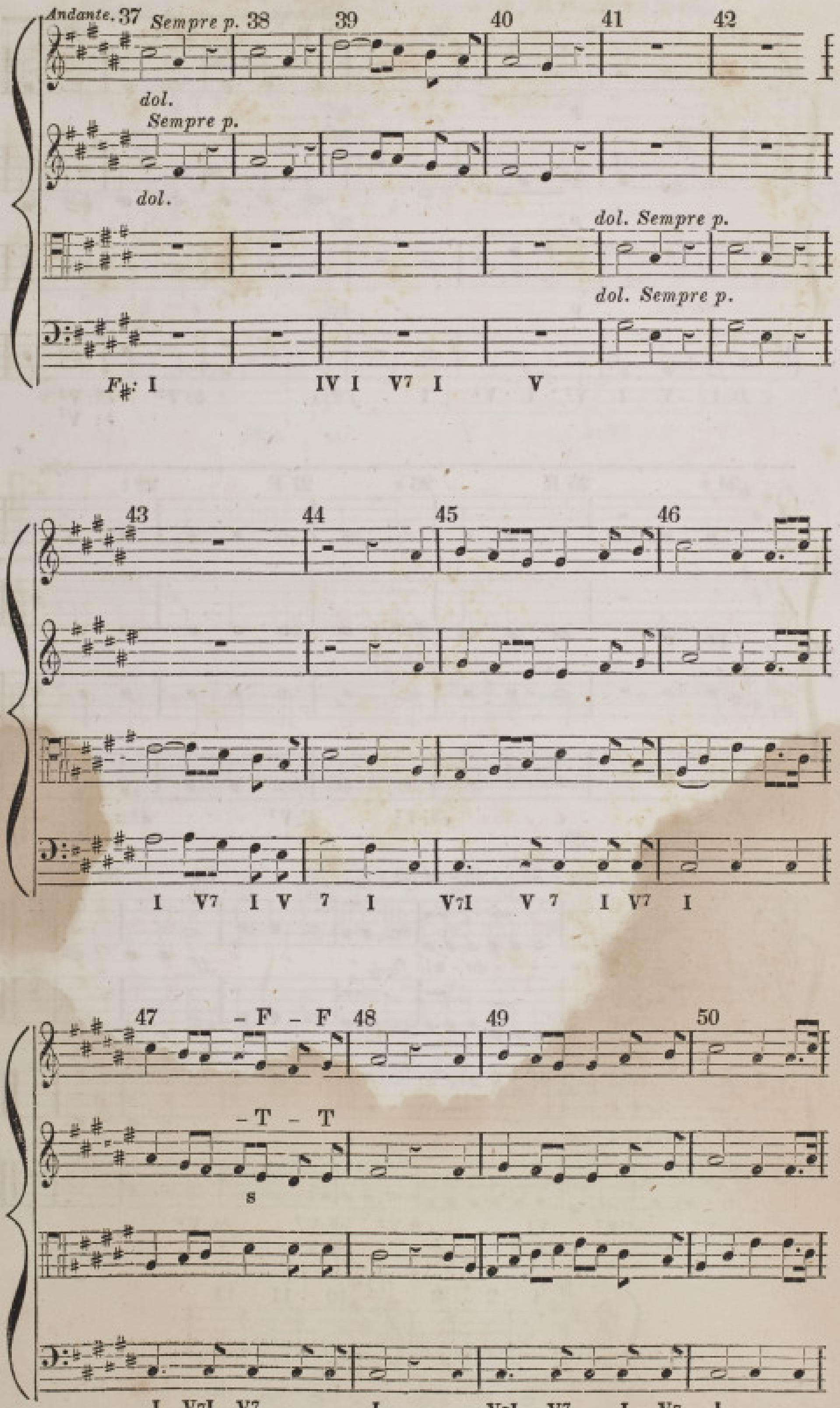
(Fig. 234.) POLIMETER.—FROM MY FOUR-VOICED SONGS.

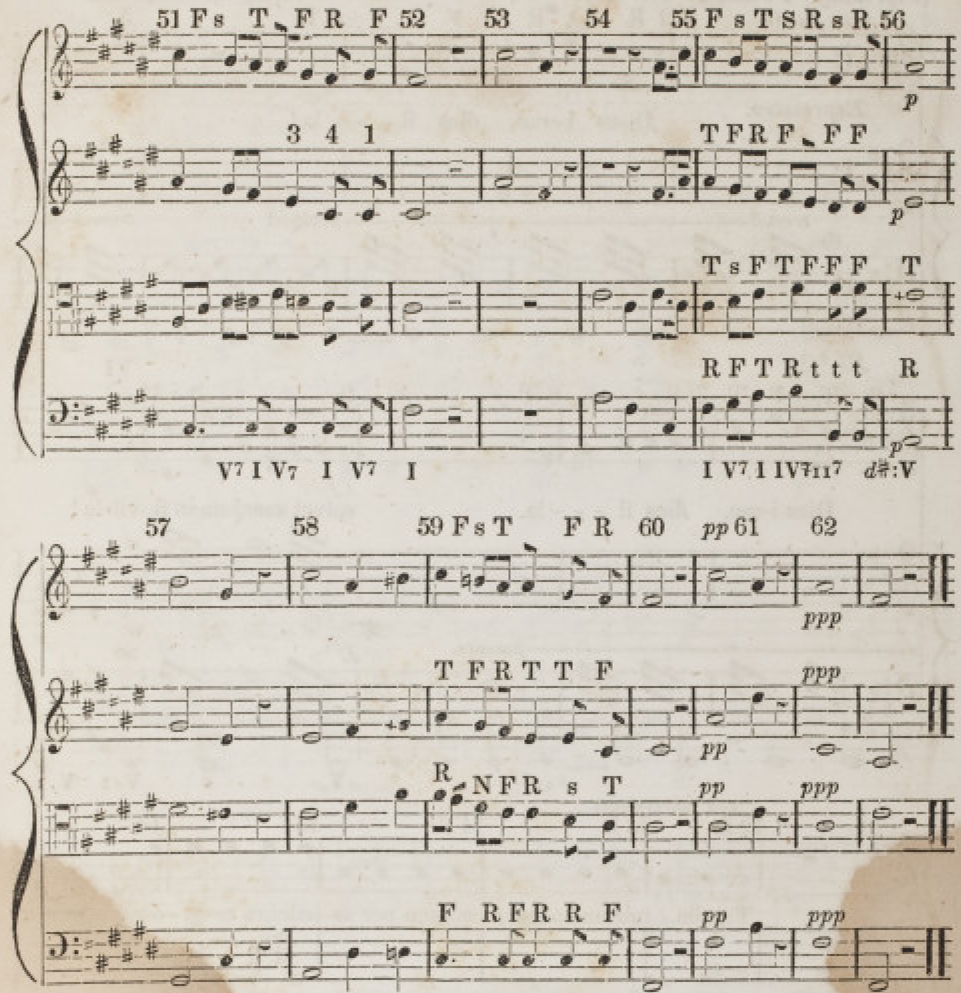

Poco Adagio.
Soprano 1.
Soprano 2.
Tenor.
Base.
1
2 R
3 F
4 T
5
R
s
T
s
R
F
R
p dol.
p dol.
p dol.
p
f♯: I
°II7
V
b: V7
I
6
7
8
9
10
11 t
t
F
F
f♯: I
V7
I
V
V
I
12 F
13
14
15
16
17 decres.
T
R
mf
mf
mf
VI
IV
V7
A: V7
D: I
a: V7
A: V7

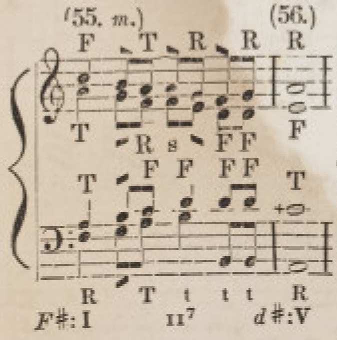

Stringendo.
18
19
20
21 R
22 R
23 s
p
decres.
p
mf
mf
decres.
p
mf
decres.
p
mf
D: I V I V⁷ I V⁷ I
f♯: I
b: 7⁷
c♯: V⁷
e: V⁷
8v.
24 s
25 R
26 s
27 F
28 t
f♯: 11⁷
G: V⁷
I
f♯ I
c♯: V⁷
E: V⁷
d♯: I
29 n
cres. 30 cen - 31 - - do - al 32 f
33
34
35
36
cres - - cen - - - - do - al f
ff
f
ff
cres - - cen - - - - do - al f
ff
a♯: V⁷
c♯: V⁷
VI
f♯: V⁷
c♯: V⁷
C♯: V⁷
f♯: V⁷

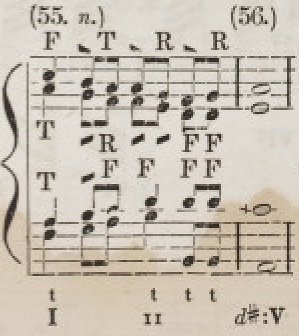

(k.) 1
(l.) 10

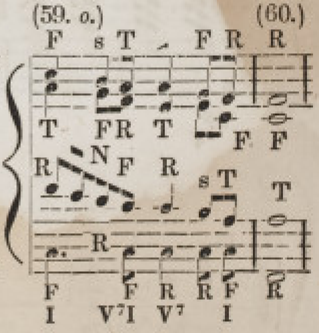
[51]

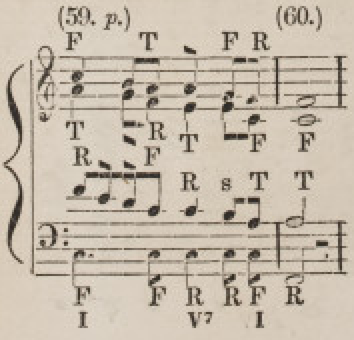

Andante.
37
Sempre p.
38
39
40
41
42
dol.
Sempre p.
dol.
dol. Sempre p.
dol. Sempre p.
F♯: I
IV I V7 I
V
43
44
45
46
I V7 I V 7 I
V7I V 7 I V7 I
47
- F - F
48
49
50
- T - T
s
I V7I V7
I
V7I V7 I V7 I


51 F s T F R F 52
53
54
55 F s T S R s R 56
p
3 4 1
T F R F F F
T s F T F F F T
R F T R t t t R
V7 I V7 I V7 I
I V7 I IV7 II7 d#:V
57
58
59 F s T F R 60 pp 61
62
ppp
T F R T T F
pp
R N F R s T
F R F R R F
pp ppp

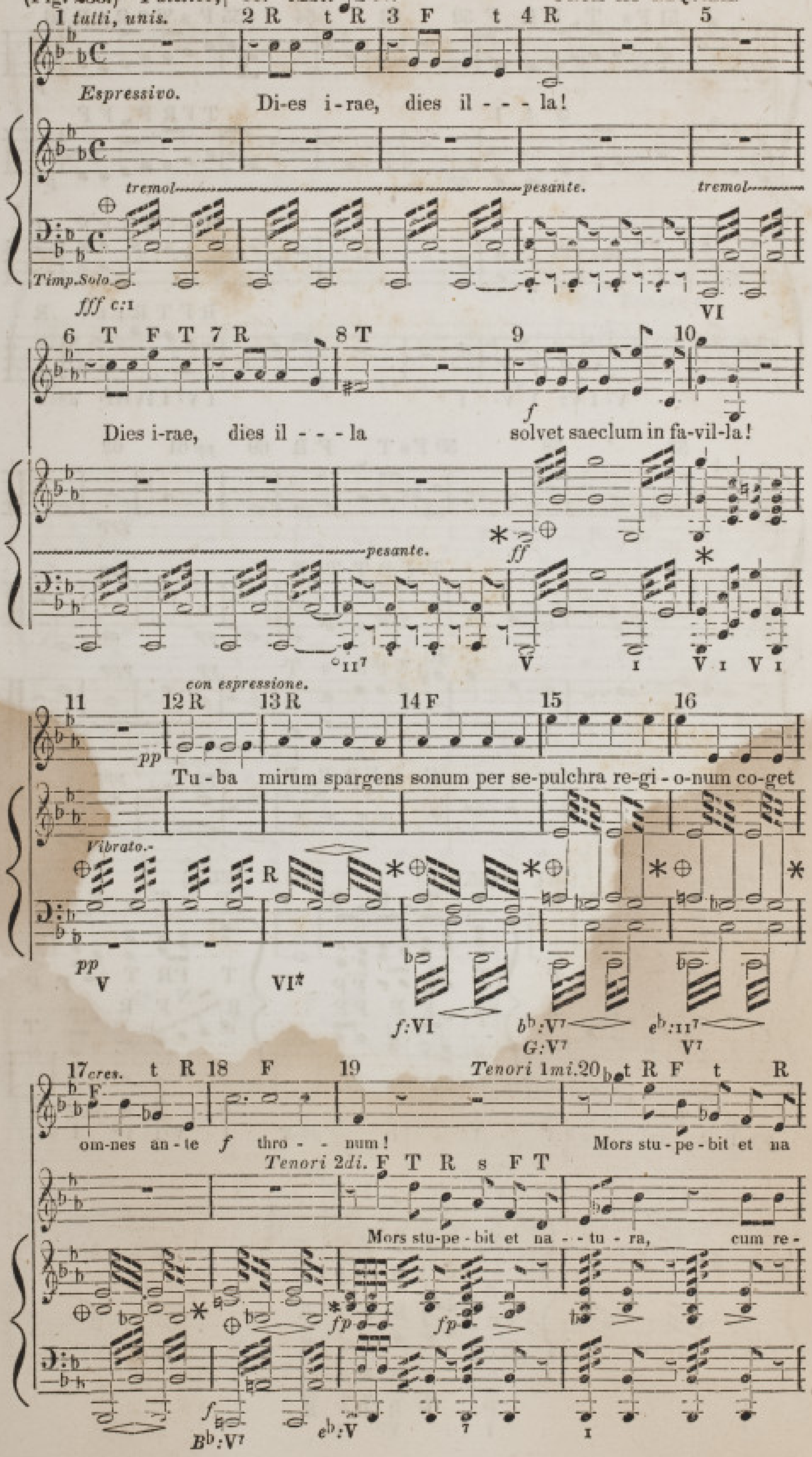

(55. m.)
(56.)
F T R R R
T R s F F F
T F F F F T
R T t t t R
F#: I II7 d#:V

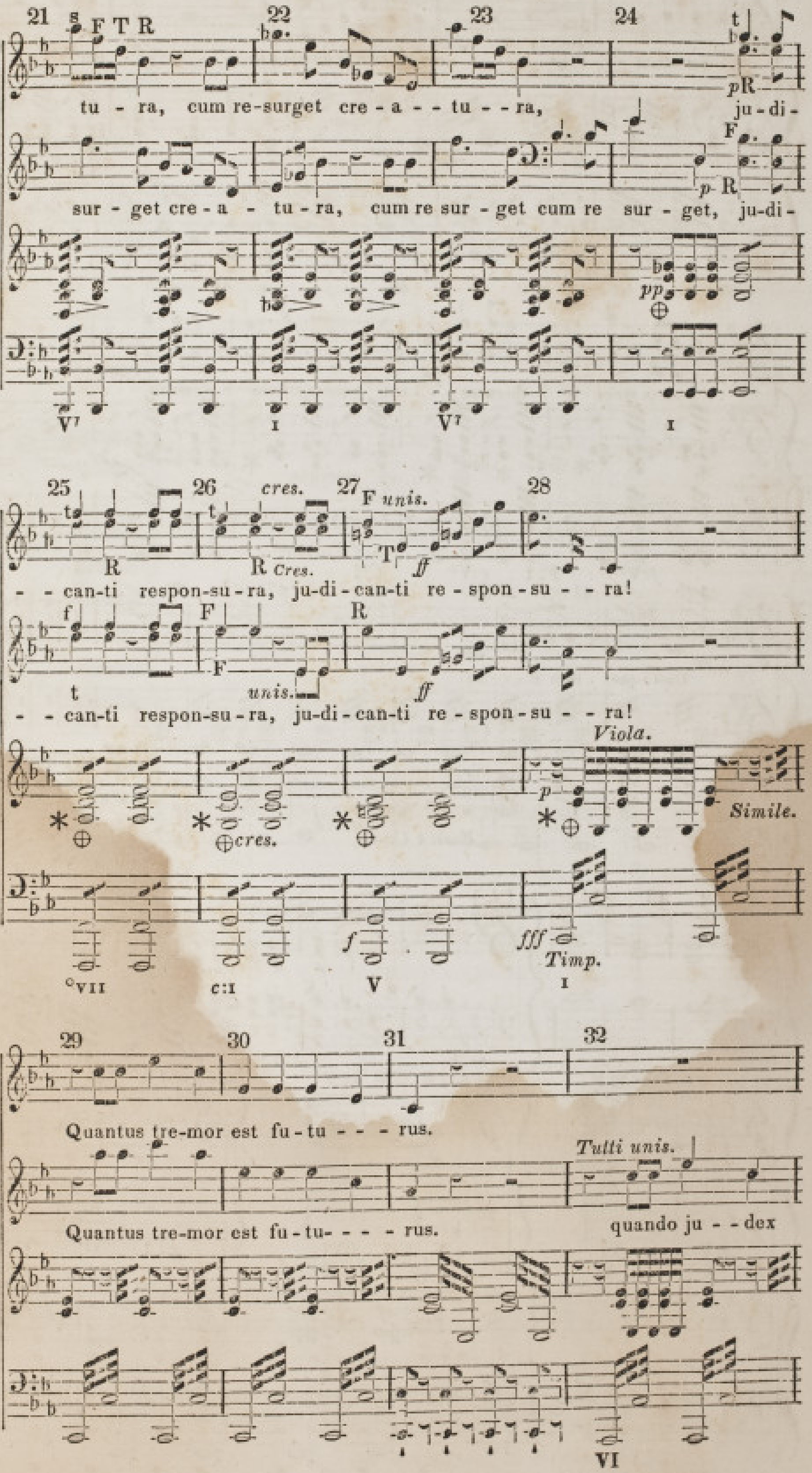

(55. n.)
(56.)
F T R R
T R F F
T F F F F
t t t t
I II d#:V

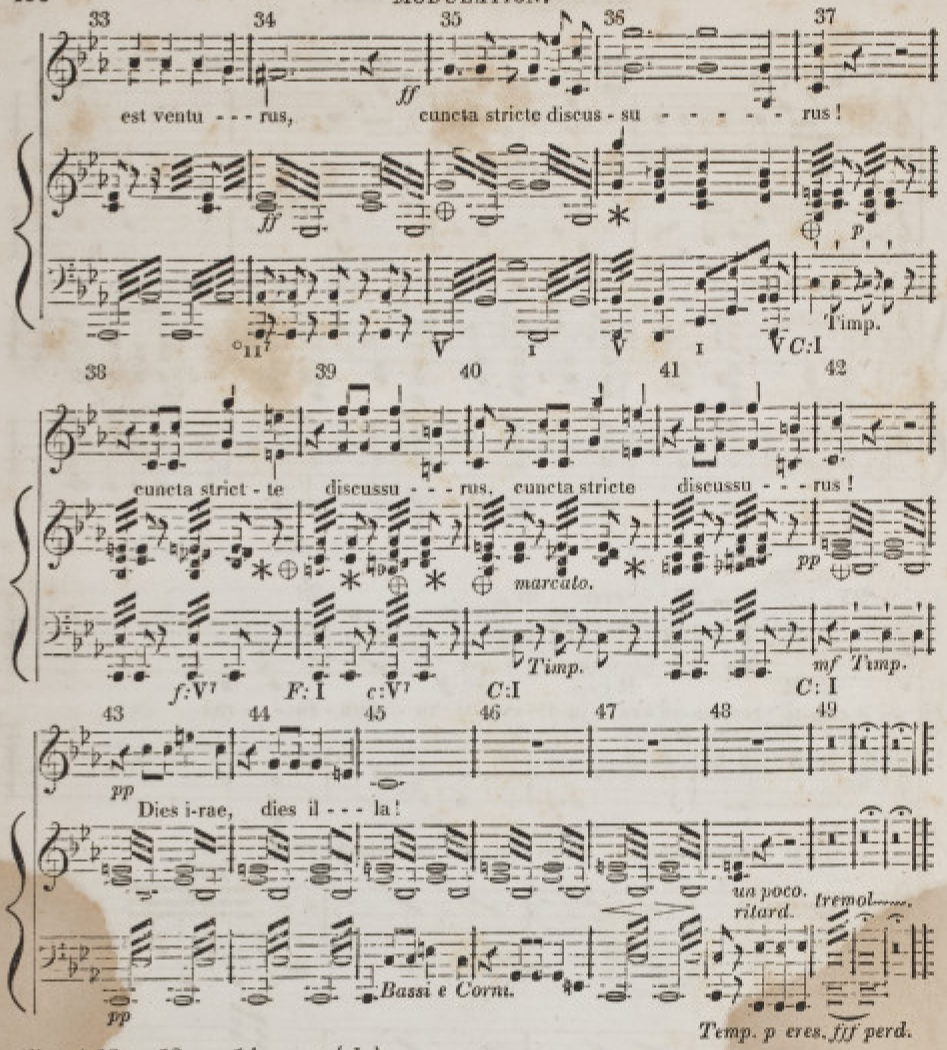

(59. o.)
(60.)
F s T F R R
T F R T F F
R N F R s T T
R
F F R R F R
I V7 I V7 I

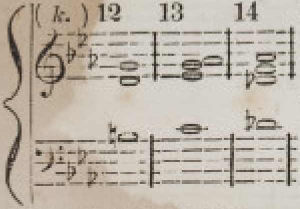

(59. p.)
(60.)
F T F R
T R T F F
R F R s T T
F F R R F R
I V7 I

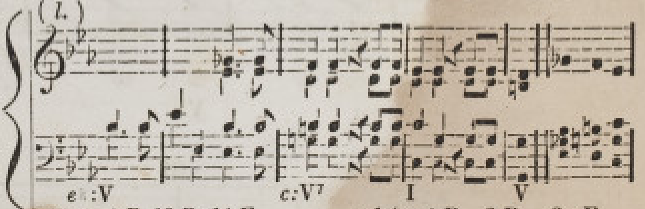
(Fig. 235.) *Patetico,* 38.″ *Mzl.* ♩ = 60. FROM MY REQUIEM.

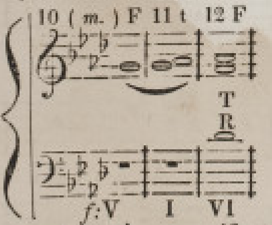

1 tutti, unis.
2 R t R 3 F t 4 R 5
Espressivo.
Di-es i-rae, dies il - - - la!
tremol
pesante.
tremol
Timp. Solo.
fff c:I
VI
6 T F T 7 R 8 T 9 10
Dies i-rae, dies il - - - la
f
solvet saeclum in fa-vil-la!
ff
pesante.
°II7
V I V I V I
con espressione.
11 12 R 13 R 14 F 15 16
pp
Tu - ba mirum spargens sonum per se-pulchra re-gi - o-num co-get
Vibrato.
R
pp
V VI*
f:VI b♭:V7 e♭:II7
G:V7 V7
17 cres. t R 18 F 19 Tenori 1mi. 20 t R F t R
F.
om-nes an - te f thro - - num!
Mors stu - pe - bit et na
Tenori 2di. F T R s F T
Mors stu-pe - bit et na - - tu - ra, cum re -
fp
fp
f
B♭:V7 e♭:V
7
I

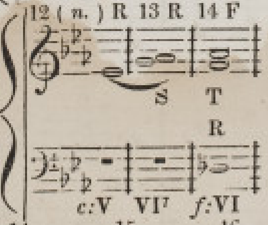

21 s F T R
22
23
24
t
tu - ra, cum re-surget cre - a - - tu - - ra, ju - di -
pR
F
p R
sur - get cre - a - tu - ra, cum re sur - get cum re sur - get, ju-di -
pp
V7
I
V7
I
25
26
cres.
27 F unis.
28
t
t
R
R Cres.
T
ff
- - can-ti respon-su - ra, ju-di - can-ti re - spon - su - - ra!
f
F
R
F
unis.
ff
t
- - can-ti respon-su-ra, ju-di-can-ti re - spon - su - - ra!
Viola.
p
cres.
Simile.
f
fff
Timp.
°VII
c:I
V
I
29
30
31
32
Quantus tre-mor est fu - tu - - - rus.
Tutti unis.
Quantus tre-mor est fu - tu- - - - rus.
quando ju - - dex
VI

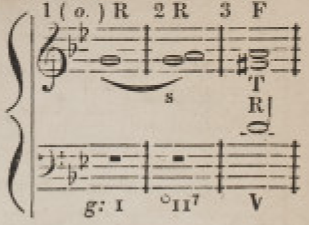

33
34
35
36
37
est ventu - - - rus,
ff
cuncta stricte discus - su - - - - - - rus !
ff
p
Timp.
°II⁷
V
I
V
I
V C:I
38
39
40
41
42
cuncta strict - te
discussu - - - rus,
cuncta stricte
discussu - - - rus !
marcato.
pp
Timp.
mf Timp.
f:V⁷
F: I
c:V⁷
C:I
C: I
43
44
45
46
47
48
49
pp
Dies i-rae,
dies il - - - la !
un poco.
ritard.
tremol
pp
Bassi e Corni.
Temp. p cres. fff perd.

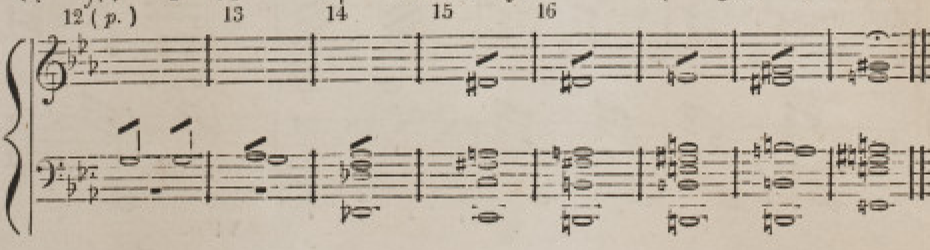

(k.) 12
13
14


(l.)
e♭:V
c:V⁷
I
V


10 (m.) F 11 t 12 F
T
R
f:V
I
VI

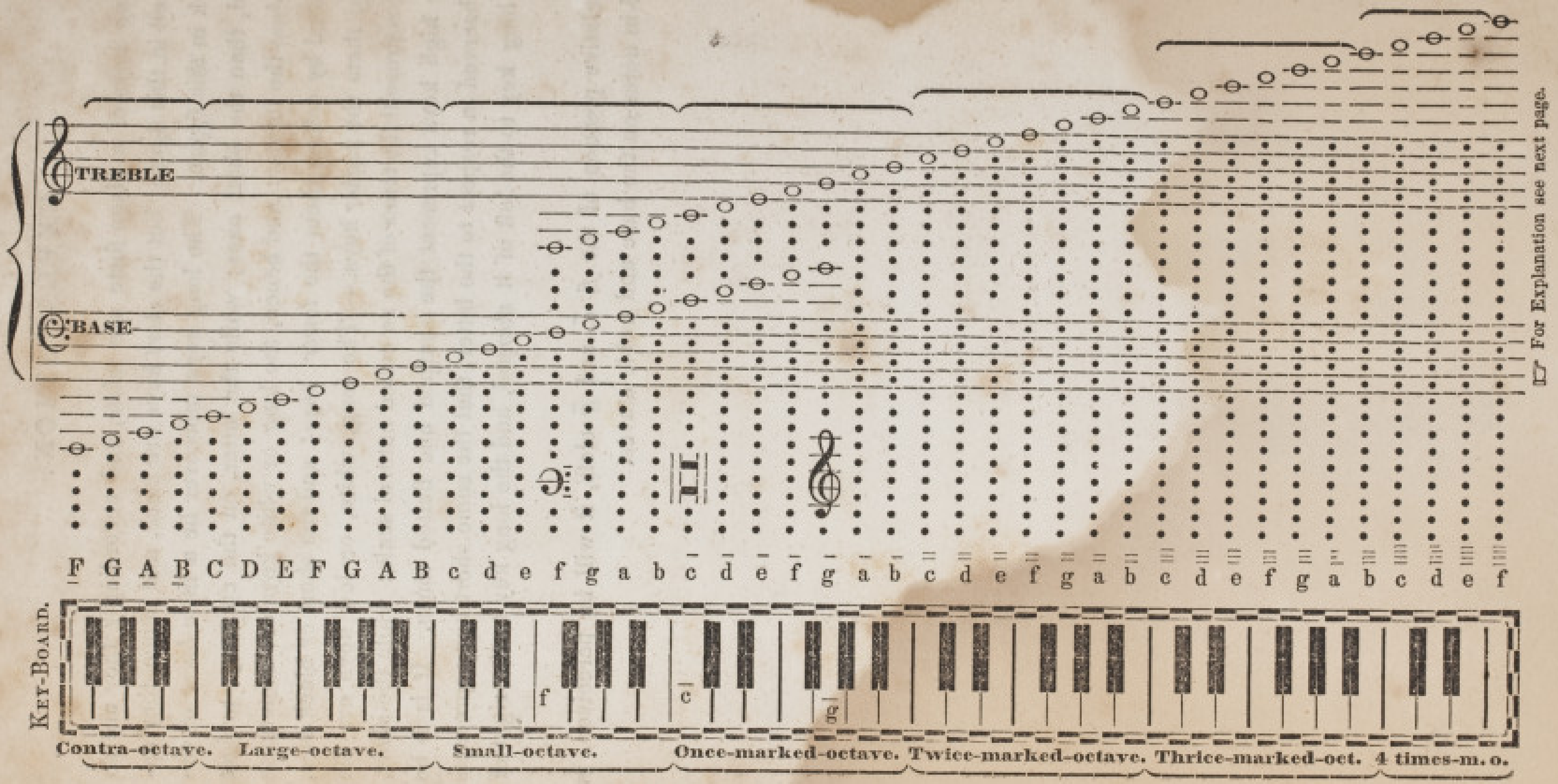

12 (n.) R 13 R 14 F
S
T
R
c:V
VI⁷
f:VI


1 (o.) R 2 R 3 F
S
T
R
g: I
°II⁷
V


12 (p.)

THE KEY-BOARD OF A PIANO-FORTE,

TOGETHER WITH THE BASE AND TREBLE STAVES, AND THE LETTERS.


TREBLE
BASE
F G A B C D E F G A B c d e f g a b c d e f g a b c d e f g a b c d e f g a b c d e f
KEY-BOARD.
f
c
g
Contra-octave.
Large-octave.
Small-octave.
Once-marked-octave.
Twice-marked-octave.
Thrice-marked-oct.
4 times-m. o.

☞ For Explanation see next page.

EXPLANATION.

The *long* keys of a piano forte are *white,* and accordingly they are so represented in this figure; but the *short* keys are *black,* and hence they appear black in this figure. The long keys moreover lie a little *lower* on the key-board, than the short ones; while the latter, on the contrary, project slightly *above* the former: and hence, the long or white keys are sometimes distinguished by calling them the *lower* keys; and the short or black ones, by calling them the *higher* keys.—The long, white, or low keys are the ones that represent the tones of the so called natural scale; while the short, black or high keys represent the sharped and flatted tones. It is to be farther observed in respect to the latter, that the same short key represents both the long key to the left of it *sharped,* and the long key to the right of it *flatted.*

The relative position of the *f*, $\bar{c}$, and $\bar{g}$ clefs, it will be perceived, is exhibited in notes on the base and treble staves.

c