

The Process of Musical Creation, the current state of research

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1 Introduction

This text was born from an initial interest in the literature that relates science and music from the point of view of creation. Eventually, it was found that the study of compositional process, being not too large, deserved in its own right the especial attention of a complete survey.

The matter is of a complex nature. It includes writings and ideas from scholars of a variety of realms. The very name ‘compositional process’ could be applied to a number of different things, and, thus, the titles of the texts can be misleading. I have felt myself trying, almost literally, to solve a puzzle by putting together many different pieces. To use another metaphor, I have been caught in a maze, and this text is the result of my struggling to find my best way out. As I am aware of the difficulty of the task, I am aware as well of the probability of not having made a comprehensive account of the literature on the topic—I cannot claim to have got my hands on every relevant text. Yet I feel that the conclusions extracted from the texts I have met (not all of them mentioned here) are representative, and could be useful as a first step, a set of guidelines, for a deeper research.

In the first part, sections 2 and 3, a historical survey is made of the ideas about compositional process, applying then the consequences of these ideas and other facts to a general description of recent literature. After that, a second part deals with some prejudices that permeate many of the titles; this second part is the core of the present text, and it is intended to warn the authors of future research by analyzing the past.

A final note on methodology, before going on: the books reviewed in the ‘Annotated Bibliography’ towards the end of this document are labeled with an abbreviation of the author’s name and the year of publication. Other sources are labeled simply with numbers, and fully cited under ‘References’ at the end.

2 ‘Inspiration’ and ‘working-out’

Edward Lowinsky, in his excellent article on *The Musical Genius*, quotes the following from Lampadius’ textbook on music, published in 1537:

As poets are stirred by a certain natural impulse to write their verses, holding in their minds the things that are to be described, so the composer must first contrive in his mind the best melodies and must weigh these judiciously, lest one single note vitiate the whole melody and tire his listeners. Then

he must to proceed to the working-out—that is, he must distribute the contrived melodies in a certain order, using those that seem most suitable.

Lowinsky follows this quotation with the comment that “we have here one of the earliest descriptions of the process of composition as we conceive of it today.” [Low89, p. 55]. The distinction seen by Lampadius in the compositional process—a first stage in which musical ideas are born, and a second one in which the ideas are worked out—is a point shared by most texts written on the subject from Renaissance to the present time.

In fact, that distinction is one of the first ideas that occur to anyone trying to figure out anything about the compositional process. But, as most immediate ideas, it is not clear enough; the texts departing from it provide *characterizations* of the stages, but not definitions that make the distinction applicable to concrete cases. The criterion to decide whether a given step in the composition of a given work is the result of one or the other stage is never explicitly stated. Authors, when writing from this standpoint, rely more or less on common-sense, on intuitive conceptions—and we shall see the problems they meet, and the strange results they sometimes reach (section 3).

2.1 The Romantic emphasis on inspiration

Different periods have assigned different values and functions to the two stages. Romanticism makes an emphasis on the first stage (and the shining and high-sounding name of ‘inspiration’ is due to that emphasis; before that period, different terms were applied). We see that, for instance, in Wagner’s *Meistersinger*, in which, as Lowinsky points out,

Walter is an idealization of genius, Beckmesser a caricature of craftsman. Walter personifies the artist whose creativity rests on inspiration, and whose inspiration springs from an imaginative mind and a generous and sensitive heart, open to love and enthusiasm. Beckmesser’s art rests on the pedantic observation of time-worn rules. His pedantry is at home in a small, petty, scheming mind, equally incapable of noble emotions and of the flight of fancy. Between these two extremes stands Hans Sachs, his roots in the world of the mastersingers, but his heart and mind open to Walter’s freely inspired art [...]

The opposition between conventional rule and fresh inspiration, the idea that the genius, unlike the mere craftsman, can transcend the rules without committing errors [...] is a leitmotiv in the history of the concept of musical genius.

[...]

Musical creation as the volcanic eruption of a glowing soul in the grip of ecstatic revelation, technical study as the magic means to summon the spirits of the art: this indeed is a truly Romantic concept.

[Low89, pp. 40–41]

A clue can be found in this “truly Romantic concept” for the explanation of the striking fact that Romantic composers wrote not a single serious text on compositional process. For them, the very idea of describing, in a rational way, how their magical, godlike inspiration worked, was simply a non-sense, a contradiction in terms, even a betrayal to their self-esteem. Occasional ‘public’ writings, frequently taking the form of letters to laymen who have posted the question ‘How do you create your music?’, do usually nothing more than state, in a more or less metaphorical way, the binary scheme of inspiration and working-out, always in that order, always with the emphasis on the first part.

When we turn the attention to what could be called composer’s ‘private’ writings, as opposed to those called ‘public’ above, we find a completely different panorama. Alfred Mann’s book *Theory and Practice* [Man87] is an excellent and revealing compilation of significant didactic documents written by great composers, in which we see the importance given by them to the cold drill and the mere craft. The quoted letters by Tchaikovsky to one of his pupils show the indignation of ‘the mere craftsman’ against any withdrawal of rules. The role of the nineteenth-century composer as a “conscientious craftsman is shown not only in the letters of Tchaikovsky but also in a remarkable document from the hand of Brahms. Entitled *Octaven u. Quinten u. A.* (Octaves, Fifths, and Other Matters), it contains about 140 examples of “faulty” progressions in the works of composers ranging from Palestrina to Bizet [...]” [Man87, p. 156].

2.2 Twentieth century and the creation of rules as a rule for creation

Twentieth century was a reaction to Romanticism also in these matters. Musical elements and musical art work regained their lost objectivity, and an abandonment of the reverence to pure inspiration overtly lies at the core of most tendencies—Neoclassicism, Marinetti’s Futurism, Hindemith’s ‘Objective Music,’ Schönberg’s twelve-tone system, Concrete music, Serialism and post-serialism, New Complexity, etc. Twentieth-century composers’ account of their creative processes, varying in technicality and organicity, are mainly addressed to the second stage, the ‘working-out,’ the technical means and rules governing composition. As Romanticism had taken a shining name for the first, emphasized stage, twentieth-century gave to the

second stage a new name, to avoid the load of negative connotations—inherited from past times—implied by the words ‘craftsman,’ ‘rule,’ and similars. It was coined the also high-sounding name of ‘language.’ Composers feel that here it is where their identity takes shape. As Helga de la Motte-Haber writes in her article *Kreativität und Musikalisches Handwerk* (her italics):

Technique is individualized to a hitherto unknown degree. That is why some composers have put great efforts to explain their means of manufacture; this happened in the awareness that these are self-made systems. “*My Musical Language*,” Messiaen says, which obviously suggests the existence of other musical techniques. [...] Rare are the cases in which the technique should be hidden from the eyes of the recipient. [dlMH98, p. 10]

One could conclude, with de la Motte-Haber, that the main creative task of twentieth-century composers is the invention of their rules and techniques. Thus, if the rules are the goal, the texts in which composers explain those rules (Messiaen’s, Xenakis’, etc.) are an account of the creative *products*, rather than one of the process which led to them.

2.3 Inspiration and working-out before Romanticism

In the Middle-Ages, as Jaime James points out in *The Music of the Spheres*, “the actual music makers, particularly the composers and performers of profane music, were scarcely more to be taken seriously than were gymnasts or clowns.” [Jam93, p. 98]. At that point, music theory did not deal with the *real making* of music, but rather with the concept, inherited from the Greeks, of music as an emblem of universal harmony and law, more related to the *métier* of philosophers than to that of music makers. As we have seen, it is as late as 1537 that a description of musical composition appears.

Turning to Baroque era, as Arnold Schering writes,

It is characteristic of Baroque mentality not to make the slightest fuss about a great artist’s genius [...] Nowhere [...] is there a hint of the chosen nature of the great artist or of the divine origin of his creative gifts. These are concepts created by Romanticism. In Bach’s time one does not yet speak of “depth of feeling,” “originality,” or position as expressing an attitude towards life and the world. These things lay outside of the Baroque world of thought.¹

¹Arnold Schering, *Das Symbol in der Musik* (Leipzig, 1941), pp. 85–86. Quoted by Lowinsky [Low89, p. 41].

Accordingly, Rousseau's *Dictionnaire de musique* (1768) has been accepted as the "precise frontier between the genius concept of the great apostle of Nature and the baroque idea of the composer as a craftsman" [Low89, p. 44].

Lowinsky thinks otherwise. According to him, the word *génie* appears frequently in Rameau's writings, and his general approach to the 'good composing' is summed in phrases such as "there is a world of difference between a music without fault and a perfect music." German theorists of seventeenth and eighteenth centuries show similar ideas (and the referred binary scheme of the creative process dates back to Cicero's account of the creation of an oration, as we shall see), and therefore the distinction would not be due to Romanticism.

However, to accept the presence of the distinction in baroque thought does not deny "depth of feeling," "originality," and similar divine characterizations of the musical creator to be essentially Romantic. Inspiration and working-out were considered distinct from each other long before nineteenth century, but the difference was not equivalent to that between musical *genius* and musical *craftsman*. To be sure, Rameau used of the word *génie*—in the sense of 'inventiveness,' (frequently attached to the word *goût*, taste), rather than meaning 'inspired artist' as opposed to the mere rule-follower—and the same is true for German theorists.

Baroque composers conceived of themselves as artisans, witness their *modus vivendi*. Up to Haydn—perhaps with the important exception of the highly charged atmosphere of Italian opera—the composer is an abnegate worker (to the service of some court or church). He does not perceive his task to be so 'important' as to deserve especial attention; people do not either, and composers are not asked as how they compose music; therefore, we do not have letters or similar material from the hand of great Baroque or early-Classical composers—that is a 'tradition' started by Mozart.

The same is true for Renaissance. When compositional process is addressed to (from a more 'earthy' point of view than the Harmony of the Spheres, aiming more to a real description than to the statement of an 'ideal' way of being composer), we get just some interesting, but here irrelevant, accounts of the change that overcame in the compositional procedure when composers turned from writing the polyphonic parts separately and successively to write them 'at the same time.'²

²This is to be found especially in Pietro Aaron *Thoscanello della Musica*, published in 1523, and in later texts by Spataro; it remains unclear if Aaron is referring to the order in actually *composing* the voices, or in writing them down—see the discussion in

3 The literature on musical creation

3.1 The insufficiency of first-hand sources on composition

Summing up the previous sections, Renaissance and Baroque composers did not concern themselves with their compositional process; from Mozart on they did, but, up to the nineteenth century, their writings are virtually always permeated by the myth of genius, as explained, and moreover their accuracy cannot be trusted, as they do not make any reference to concrete musical cases. In twentieth century the phenomenon is reversed: composers emphasize technique ('language'), and usually do not deal with the birth of ideas, of course a point of importance in the analysis of any creative activity.

Music—and perhaps arts in general— is peculiar in this point. When studying creation in science, scholars have at hand dramatic and detailed narrations by the scientists themselves. Kepler's books, deeply studied by Arthur Koestler in *The Sleepwalkers* [Koe59], are a complete re-creation of the way that led him to his discoveries, with every error, misunderstanding, false conclusion, etc., rather than a plain exposition of them. This is admittedly an extreme case, but scientific researchers have good sources in the writings by Archimedes, Poincaré, Kekulé, Wallace, etc. (many of them often quoted in texts on creativity), and in the worst cases, documented claims and controversies regarding the priority of a discovery or theory have proven to be invaluable sources for historic reconstructions. There is no comparable material of this kind on musical creation.

3.2 The absence of music from literature on creativity

On the other hand, literature on creativity is abundant. Texts are readily found ranging from publications intended to be best-sellers (mainly addressed to what parents can do to 'increase' the creativity of their children) to more serious applications of this 'educational' approach; from attempts to reduce creativity to stimulus-response cases in early behaviorism, through the most recent researches in artificial intelligence; from the analysis of particular cases of 'creative genius,' mainly the most famous (Leonardo, Einstein, Mozart; never a Tchaikovsky, an Euler, a Velásquez) to the serious research on the development of culture.

But the mention of music is surprisingly hard to find there, except perhaps for the case of Mozart (and

Bonnie Blackburn's article *On Compositional Process in Fifteenth Century* [Bla87].

mentions to him range, too, from the “Mozart Effect” to the quotation of an apocryphal letter in which ‘he’ tells something about his process). Lowinsky declares that “historians of ideas have written on the concept of genius in general. Edgar Zilsel’s admirable book on *Die Entstehung des Geniebegriffes*, for example, left music out of consideration” [Low89, pp. 40–41]. Particularly, music is sadly absent from Arthur Koestler’s *The Act of Creation* [Koe64]; in that book (published in 1964) Koestler builds a general theory on creation upon deep analyses of humor, scientific discoveries and inventions, and artistic creation. The few direct references to music are strikingly poor,³ and no relevant fact of musical history is brought to the argument, in contrast to the very detailed information taken into account by the author in other fields.

I can venture a sketch of the reasons for this. Music demands a large amount of training, and the learning of its basics takes years. Whereas texts analyzing scientific discovery can provide, in more or less extensive paragraphs, the necessary knowledge for the understanding of examples; whereas appreciation (both author’s and reader’s) of artistic works of painting and literature can rely on immediate visual or conceptual references, and thus be a ‘deep,’ however naive appreciation, music and musical creation rely to a great extent on technical elements, usually not shared by non-musicians. The common astonishment with which people state that they simply ‘cannot imagine how a composer creates his music’ has perhaps no parallel in other arts, and it is by no means limited to non-musicians, for even performers often express it.

Writing on music, especially on musical creation, is quite an ‘exclusive’ task, and it cannot be taken over by anybody without a sufficient training, or without the close help of a trained musician, desirably a composer. Besides, any really deep analysis must take into account a complete set of technical features, and its exposition to the reader hardly could avoid the references to it; therefore, the reader, too, has to be sufficiently trained in order to properly understand the argument.

3.3 A classification of literature on musical creation

A first consequence of what has been pointed out so far is that, surprisingly enough, the number of texts addressing musical creation is not large.⁴ In addition, the analysis of them appears to need a critical approach,

³The references to *the creative act* in music; chapter X of book II (pp. 513 *et. seq.*) takes music as a starting point (“Instead of the over-worked province of visual perception, I shall start, for a change, on hearing”, p. 513), but from the standpoint of the mechanics of perception.

⁴Almost every great composer has been object of analyses of his creative process. But here the interest is focused on those texts aiming to a *general* description. The difference is not only quantitative, but also qualitative: it is important to avoid any element

	Written by musicians	Written by non-musicians
Containing musical examples	Sessions, R. [Ses50] Sloboda, J. [Slo85] Cook, N. [Coo90] Dreyfus, L. [Dre96] Saxton, R. [Sax98] Dubiel, J. [Dub99]	Rothenberg, A. [Rot79]
Not containing musical examples	Dorian, F. [Dor47] Hindemith, P. [Hin52] De la Motte-Haber, H. [dIMH98]	Tang, P. [Tan84] Weisberg, R. [Wei93] Reitman [Rei65]

Table 1: Classification of surveyed texts on musical creation

namely to keep in mind the kind of audience to which a text is addressed: in general, the presence or absence of musical examples (with a substantial analysis) indicates whether the reader is supposed to be musically trained or not. Likewise, one has to keep in mind if the author himself is a musician or not. Table 1 shows the main texts reviewed here with that classification. Needless to say, the latter is not intended to judge the texts in any way. It will be proved that the top-left square of Table 1 has the most useful texts, but this does not mean that the others are ‘bad’ or ‘useless’ (in fact, the present text would not fall in that square).

The horizontal line of Table 1, the criterion of audience of the text is important above all to provide the necessary skepticism about composers’ writings. This skepticism is not explicitly held by any author;⁵ at most, John Sloboda, in the fourth chapter (*Composition and Improvisation*) of his book *The Musical Mind* [Slo85], soundly distinguishes between four “possible methods of enquiry:” manuscript evidence; composers’ writings on their own processes; observation of composers at work; and description of improvisational performance.⁶ About composers’ writings, Sloboda simply states, with no warning, that “a few [composers] have tried to say in a general and retrospective fashion what happens when they compose.” [Slo85, pp. 102-103].

that depends on the genius of great composers, any argument *ad hominem* that could lead to wrong generalizations. Needless to say, those texts of ‘individual’ scope would be a main source for further study. On the other hand, Dreyfus’ *Bach and the Patterns of Invention* [Dre96], being just about one composer, is taken into account, for its first part makes a ‘state of research’ of German Baroque literature on musical creation.

⁵Apart the mentioned *Theory and Practice* [Man87] by Alfred Mann, which is not included in Table 1 because it does not deal directly with the compositional process.

⁶The latter, improvisation, does not concern us for the time being. It is a quite separate musical activity, and of course deserves attention, as do musical performance and criticism, but this text is limited to compositional process as we conceive of it in ‘art music.’

The lack of a critical approach to this kind of source leads to various difficulties. In his article *On the similarities between Scientific Discovery and Musical Creativity* [Tan84], for example, Paul Tang builds his argument on music from testimonies by Stravinsky and Copland. But these are *verbal* testimonies, in which beautiful common-sense and speculation make their appearance. Stravinsky, for example, is quoted saying that composing is, for him,

putting into an order a certain number of these sounds according to certain interval relationships. This activity leads to a search for the center upon which the series of sounds involved in my undertaking should converge. Thus, if center is given, I shall have to find a combination that converges upon it. If, on the other hand, an as yet unoriented combination has been found, I shall have to determine the center toward which it should lead. The discovery of this center suggests to me the solution of my problem.⁷

This sounds good, but it would certainly need the concretion of a musical example; without it, Stravinsky can be interpreted in any way, and his *dictum* is no more than a statement of what, for a musician, is obvious—again, this is the typical kind of material resulting when the great composer, with a ‘genius halo,’ is asked about his process. In Tang’s article, this is a deep contrast to his sources about science, the realm to which the most part of his references belong.

It is also worth to note that a closer look to Stravinsky’s quotation uncovers in it a ‘technicalization’ of the binary scheme of inspiration-elaboration. Something—a “center” or an “as yet unoriented combination”—has been “given” or “found,” and now the composer has to “find,” “determine,” “discover,” the remaining aspects of the composition.

Sloboda, when dealing with his second kind of sources, namely composers’ writings, departs from quotations of Richard Strauss, Beethoven, Mozart (in the afore-mentioned apocryphal letter), and Roger Sessions, and then builds a diagram to summarize them (Figure 1); it is, as expected, a sophistication of the binary scheme of inspiration-working-out. Box A is there to account for a comment by Sessions from which Sloboda interprets “that sometimes a more or less specific idea of the *kind* of music required precedes an actual theme in awareness.” [Slo85, p. 119]. Thus, the core of the figure is actually in boxes B through D, and it represents the familiar growth of an unconscious—godlike—inspiration to a final composition

⁷Igor Stravinsky, *The Poetics of Music in the Form of Six Lessons* (Cambridge, Mass.: Harvard University Press, 1970), pp. 39–40. Quoted by Paul Tang [Tan84, p. 265].

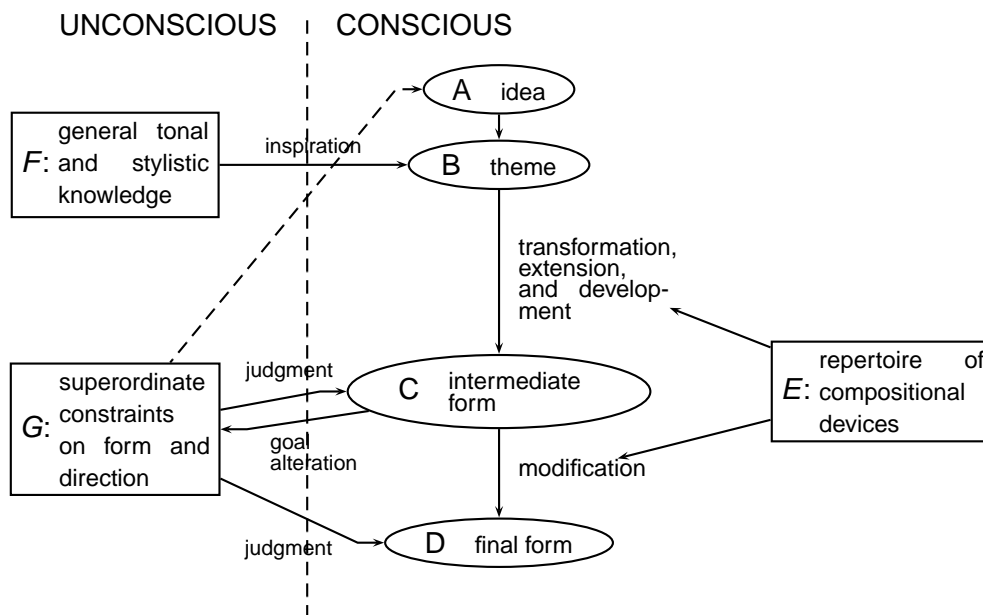


Figure 1: “Diagram of typical compositional resources and processes” (figure 4.1 of [Slo85, p. 118]). Boxes A (which is optional) and B create ideas that are worked out in C and D. The figure is intended to comprise the testimonies of several composers from different epochs about their process.

through a process of conscious working-out, this latter more or less affected by “superordinate constraints on form and direction” and the “repertoire of compositional devices.”

Let me repeat that this construct is made to follow as close as possible the “retrospective” ideas of composers themselves. Sloboda makes this section to be followed by a the “observation of composers at work” [Slo85, section 4.4, pp. 123–138]; here he makes his best contribution, probably the best one in the whole surveyed literature, namely a documentation and analysis of *his own* compositional process.⁸ What is important for the time being is that he does no direct reference to his previous section, and that by no means he is trying to reconcile his ‘protocol’ with Figure 1. The composers’ testimonies he had taken for his previous section come all from what I called ‘public’ writings, when the audience was not supposed to be musically trained, and nothing very important is extracted from them.

Yet another example of the ‘need for skepticism’ is the case of Sessions, two of his writings are referred to in Table 1. *The Composer and his Message* [Ses41], published in 1941 (the one quoted by Sloboda),

⁸As far as I know, this is a unique (published) instance of a composer reporting his work, as it is being developed, for further research on the creative process; Sloboda’s major activity is not composition, but psychology, mainly devoted to cognition processes, and he has edited books on several fields, from music to mathematics. But he has the necessary training to write complete musical works, and this makes him capable of an very worth analysis of compositional process.

does not have musical examples, i.e. it is addressed to a non-musicians audience; on the contrary, *The Musical Experience of Composer, Performer, Listener* [Ses50] is the compilation of six lectures given by the composer at the Julliard School of Music in 1949. As we shall see (section 4.2), this text is far more significant for us than the first one.

3.4 The ‘exclusivism’ of musical writings

The other side of the coin of the horizontal line in Table 1 is that musician-writers seem reluctant to speak about other fields. As mentioned before, this survey had, as an initial object of study, any relation between music and science, and then the lack of musical texts treating other realms was patent.⁹ For example, the mentioned book by Jamie James, *The Music of the Spheres*, is the only comprehensive attempt by a musician about the deep relation that our art maintained with science and philosophy up to the Scientific Revolution.¹⁰

Musicians describing musical creation, musical perception, musical history, seem to be too busy with their (certainly large enough) matter to turn their attention to other fields of creation, perception, and history. Many excellent texts relate music through the history of culture, but the crude reality seems to be that the plain musician, the ‘musician on the street’ is far less aware of general history and philosophy than he should. From literature on creation, particularly, the whole research behind the subject (in psychology, in science, in other arts) has passed mainly unnoticed.

Again it is Sloboda, thanks to his ‘double training’ (see footnote on page 11), the one not enclosed in music alone—although in the particular chapter on composition the discourse is not rich references to non-musical literature. Robert Saxton’s article *The Process of Composition from Detection to Confection* [Sax98] bears some references to philosophy, mainly to Kant, but they are not elaborated; the reader cannot learn whether the author is just taking some phrases he remembers and adapting them to the musical discussion, or rather he just ‘scratches the Kantian surface’ without deepening. In any case, these references perfectly

⁹Except for relations oriented to device compositional techniques, as Xenakis’ writings and many acoustical studies for use in electronic and computer music.

¹⁰The fact that music in that time was conceived of in quite a different way from today seems not a good enough explanation for this omission. On the other hand, I have found, in general, a misunderstanding of the role that music played in the history of science. Leonardo and Galileo are frequently ‘shown’ to have been emotionally led to their inquiries by music, even they are called ‘musicians’ here and there; the truth is that their ‘musical’ attempts are limited to experimenting with the invention of musical instruments. With Kepler, his life-long obsession towards the ‘musical harmony’ of the universe has been misinterpreted: he was obsessed by the second part of the expression, ‘harmony,’ much more than the first one [Koe59]. The ‘earthy hand’ of a musician would be necessary to make a good account of this affairs. James is certainly the one that started.

Cicero	Bernhard	Mattheson (1739)
1. inventio	1. inventio	1. inventio
2. dispositio		2. dispositio
3. elocutio	2. elaboratio	3. elaboratio
4. memoria		4. decoratio
5. pronuntiatio	3. executio	5. executio

Table 2: “The divisions of rhetoric” (figure 1.1 of [Dre96, p. 5])

could be absent—they do not bring anything essential to the argument, and the argument simply is not related to them.

Saxton’s article approaches composition in a particular way, as the title announces it: the composer’s first task is to ‘detect’ his idea. Then he proceeds to its ‘confection.’ Also Joseph Dubiel’s article *Composer, Theorist, Composer/Theorist* [Dub99] conceives of the composer as a pursuer of his musical idea. Dubiel sketches later on an analogy between composition and verbal speech (this is almost exactly the same analogy made by Mattheson and others in the Baroque era, which is a good proof of the strong intuitive relation between the two things). More than one characteristic is shared by Dubiel’s and Saxton’s articles: they are rather disorganized, no clear thesis is held, no clear conclusions are extracted. And, important in this point, both of them would suggest the relation of their inquiries to other realms (both to problem-solving psychology for both, and Dubiel’s to language psychology and semiotics); in both cases, no reference is made to the large literature on those other realms, thus incurring in the danger of naivety and lack of precision.

In conclusion, ‘writing for musicians’ seems (badly) associated to ‘writing *only* for musicians’ (or rather to ‘writing for *only-musicians*’), with no relation to other areas of research, not feeling the need for documentation and reference from them.

4 Prejudices on inspiration

Some words have already been said about Sloboda’s sophistication of the scheme of inspiration and working-out (Figure 1). A similar diagram appears in Laurence Dreyfus’ book *Bach and the Patterns of Invention* [Dre96], summarizing a Baroque adaptation of Cicero’s rhetorics theory into composition, which culminates with the work of Johann Mattheson, in his book *Vollkommener Capellmeister*, published in 1739 (see Table 2).

What is clear in Dreyfus' table is that, beyond the controversies on the number of stages (and their names), the authors agree in the presence and name of the first one, "invention." Different authors just split the second stage (the working-out) in different ways. Although Dreyfus sees in Bernhard and Mattheson a sort of 'emancipation' from the binary scheme to which composers "by and large had confined themselves" [Dre96, p. 3], a further quotation from his book shows how the twofold division remains at the core of Baroque author's ideas:

Johann David Heinichen, for example, writes that "it is not ever enough that a composer writes down a naturally occurring, good invention expressing the word and pleasing the good taste of intelligent listeners. It also requires an artist to work out [these inventions] at the right occasion according to the rules and to prove that he possesses knowledge." Johann Mattheson also expresses this sentiment when he writes: "Many a person supposes, if he has perhaps a small supply of inventions, that he is well off as a composer. This is by no means correct, and nothing is achieved by invention alone, although it certainly comprises about half of the matter." [...] "Invention," [Mattheson] says, "requires fire and spirit" while "disposition" calls only for "order and measure" and "elaboration, cold blood and circumspection." [Dre96, p. 3–6]

It is undeniable that here the word "invention" is substituted for "inspiration," more likely to occur one and a half century later on.¹¹ For Mattheson and the others, the first stage is "half the matter," and in Mattheson's quoted description of his scheme, "disposition" is distinguished from "elaboration" in a completely different way than it is from "invention."

The twofold division of the compositional process appears stated too in Hindemith's *A Composer's World* [Hin52], in Sessions's *The Composer and his Message* [Ses41], Paul Tang's article *On the Similarities between Scientific Discoveries and Musical Creativity* [Tan84], and, although not explicitly, in Albert Rothenberg's *The Emerging Goddess* [Rot79]. It is the basis of organization in Frederic Dorian's *The Musical Workshop* [Dor47], whose parts one and two are "Inspiration" and "Craft," respectively.

It seems important to point out some difficulties that this scheme creates for the analysis of composition, and that is what this section is devoted to. Naturally, all this prejudices on inspiration have their counterparts in the other stage—that is why there is no section on 'prejudices on elaboration.'

¹¹In fact, this and similar quotations allow me to speak indistinctly of "inspiration" and "invention." The latter is the term preferred by Baroque authors and, by extension, by Dreyfus. But, at least for the purposes of this text, they mean essentially the same.



Figure 2: Themes from the first movement of Beethoven's *Sonata Op. 2, No. 1*

4.1 The criterion of distinction—and the lack of it

It has been said that no clear definition of the two accepted stages of composition, inspiration and working-out, is found in the whole literature. The line separating them of each other is all but sharp, and difficulties arise from this fact.

Take, for example, Beethoven's *Sonata in F minor, Op. 2, No. 1*. The two themes of the first movement are given in Figure 2. One could say that the first theme was given by 'inspiration.' But the second is a clear expansion of the first, one that 'fulfills' the established 'rule' of contrast in the highly economic Beethovenian way; it is not easy to find the extent up to which this second theme was the result of inspiration, nor the role played by the working-out in its creation. In cases like this—by no means infrequent or exceptional—the distinction between inspiration and elaboration remains inapplicable; no advance has been made, for we have yet to decide when did inspiration work, when working-out did.

John Sloboda provides a concise characterization of the stages in his book *The Musical Mind*:

The first called 'inspiration' [...], where a skeletal idea or theme appears in consciousness; the second called 'execution', where the idea is subject to a series of more conscious and deliberate processes of extension and transformation. [...] It is as if the creative artist has a consciously known repertoire of things he can do with basic material, but has no such repertoire for generating the first germs on which he exercises his craft. The inspiration seems almost externally 'given' [...] Compositional skill entails the existence of a repertoire of ways of extending and building from the given, by discovering and using its inherent properties in principled ways. [Slo85, p. 116]

However, this does not provide a reliable criterion—the problem of applicability is still present. It is Nicholas Cook, in *Music, Imagination, and Culture*, who states what appears to be the basis for such a criterion (although he is not looking for it, because he does not depart from the distinction of the stages).

Invention

	<u>Operations</u>	<u>Harmonic Function</u>
α_1	—	DEFINE
α_2	ROTATE	DEFINE
β_1	—	MODULATE \uparrow P5
β_2	ROTATE, MODESWITCH	MODULATE \uparrow P5
β_3	ROTATE, MODESWITCH, INVERT	(aborted)

Table 3: Excerpt from Dreyfus’ “Map of C Major Invention, BWV 772” [Dre99, p. 21]

Writing on Ligeti’s micropolyphonic techniques, Cook says that they, like “the established formulas of orchestration, have an effect that is sufficiently predictable for it to be possible to apply them without any direct consideration of the acoustic results.” [Coo90, pp. 198–199]. We could say, following this line, that the ‘working-out’ is that kind of operations “sufficiently predictable,” “possible to apply” without further consideration.

A striking case of difficulties due to the unclearness of the distinction is to be found in Dreyfus’ *Bach and the Patterns of Invention*. As has been mentioned, the author is departing from Mattheson’s scheme of compositional process (Table 2, p. 13). Extracting the definition for *inventio* from Cicero and Mattheson, he accepts that it is the stage of finding what is going to be said. Thus, he takes Bach’s *Invention in C* and assumes that ‘what is going to be said’ is the motif and its different restatements through the piece.

But the restatements of the motif are product, evidently, of a process of development, which intuitively would fall under the ‘working-out’ stage (and also not so intuitively: cf. the ‘Cookian’ criterion, for instance). In order to explain all these restatements of the motif (always under the heading *Invention*, between pages 14 and 20 of the book), Dreyfus defines “operations”—much in the way of computer programming, as shown by the SMALL-CAPITAL-LETTERS, a traditional convention in that realm.

Table 3 (Dreyfus’ figure 1.2 [Dre96, p. 21]) is a summary of the part on “invention” (α ’s and β ’s are the different versions of the motif). To begin with, it is evident that “invention,” for Dreyfus, is not the immediate inspiration that it seems to be for Mattheson. The main problem, however, appears when Dreyfus turns to the episodes of the piece, whose composition, in his interpretation of Mattheson, is represented by the third step, “elaboration;” this is characterized as “a more routine process of “filling in” through typical methods of amplifying the basic ideas.” [Dre96, p. 5]. This characterization fits perfectly in what Dreyfus has already

done with the “invention.” And moreover, Dreyfus analyses the composition of episodes in a very similar way—as would be expected, no other way is there to do it.¹²

Thus, the distinction between the steps in the scheme turned out to have nothing to do with the actual analysis. It seems that, for Dreyfus, the difference between “invention” and “elaboration” is merely that the former applies to motives and their presentations, and the latter to episodes. The criterion has become just a label derived from the (*a priori*) formal analysis of the piece! What is to be done in pieces with different formal structures, in which this difference is, in its turn, hardly well-defined?

4.2 Inspiration as a ‘melody-factory’

In the latest of Roger Sessions’s texts mentioned above (page 11), one can read that the initial idea of a composition—“the starting point of a vital musical ‘train of thought’—[...] may, certainly, not be a motif[;... that] by no means all motifs can be called ‘musical ideas’[;... and that it] may be not even a thematic fragment at all.” [Ses50, pp. 46–47]. Here we have one of the few explicit rejections of the prejudice that invention, inspiration, musical ideas, or whatever the name is given to the first stage, comes always as tonic material. This prejudice is patent in Sloboda and Dreyfus, and can be read in most of ‘public’ writings by composers (above all before twentieth-century, but including Stravinsky’s quotations above). Assuming that inspiration comes as tonic material immediately excludes much of twentieth-century music, in which detailed tonic material is often of a secondary importance and does not define the work. A good model for creative process in music should render reliable explanations of both Bach’s *toccate* and Cage’s *4:33*. It is sad to note that the latter, an *absolutely musical* work, is mentioned only by Cook, when surveying the definitions of Music in the first part of his mentioned book [Coo90]. There are no tones, no rhythms, and no motives in *4:33*; but excluding it from the universe of an inquiry would be so regrettable as having excluded Liszt’s *Bagatelle without Tonality*, for the only reason that ‘it is not representative.’

Both Cage and Liszt went beyond the limits of what was currently accepted as ‘music.’ But there is no need to go to these extreme cases to find the fallacy hidden in the assumption of ‘inspiration’ as a ‘melody-factory.’ Monteverdi’s *agitato* style¹³ has nothing to do with actual tones; neither do the inclusion

¹²I think, because of this and other cases, that Dreyfus is misinterpreting Mattheson. The German theorist, as Dreyfus himself points out, is making a direct and naive adaptation of Cicero’s theories; the problems appear due to the pretension (by Dreyfus) that this could be immediately applicable to real musical facts, which is questioned even by Mattheson himself.

¹³The technique in which a vocal line in long notes is supported by rapid short notes in the accompaniment, thus creating an

by Mozart of a fugue in the sonata-form, the merely technical features of Bach's *The Art of Fugue* or *A Musical Offering*, the growing of the *finale* from the *scherzo* of Beethoven's *Fifth*, or the invention of string quartet or opera. What de la Motte-Haber has remarked about twentieth-century music (see p. 5), that the invention of technique is an important part of the creative invention, and that technique is not just limited to the working-out of what would be 'really' inspired, is in fact true for the whole history of music: the 'revolutions' of music are so because they reveal new methods, techniques, crafts—not because they are 'beautiful' or full of inspired melodies.

Another consequence of the prejudice in question, but pointing to an important issue, is the exclusion of musical performance. It is clear that the performer does not have inspirations in terms of melodies; but it is clear also that his is a fully creative task. And that he does experiment moments of 'insight,' both when he devises some technical means to express his interpretations, and when he finds these latter. This process also includes initial ideas, maturation of them, refining, and technical application. This is outside the scope of this text, but the mention of the issue is important to avoid losing from the sight the 'real life' of music. (Incidentally, this paragraph could be applied, with almost no change, to musical criticism as well.)

4.3 The chronological separation

On the other hand, the prejudice that inspiration comes *before* elaboration leads any theory to difficulties. Dreyfus assumes this chronological separation between "invention" and the remaining steps of Table 2. For him, the creation of musical ideas (*tonic* ideas, assuming also "invention" as 'melody-factory') *and the analysis of their possibilities* are bound to precede their actual realization: "To believe otherwise would mean that Bach arrived midway in the composition of a double fugue, inverted the two themes, and then congratulated himself on his good fortune that the themes inverted flawlessly." [Dre96, p. 13]. My own compositional experience tells me that this, the finding of unexpected possibilities 'along the way'—and the resulting "self-congratulation"—actually *does* happen; testimonies by other composers (mentioned here Sessions and Sloboda) confirm it. But there is no need to go beyond Bach—nor beyond Dreyfus: another quotation from him renders the necessary *reductionem ad absurdum* (" β_3 " is in figure 3; my italics):

atmosphere of tension and suspense.

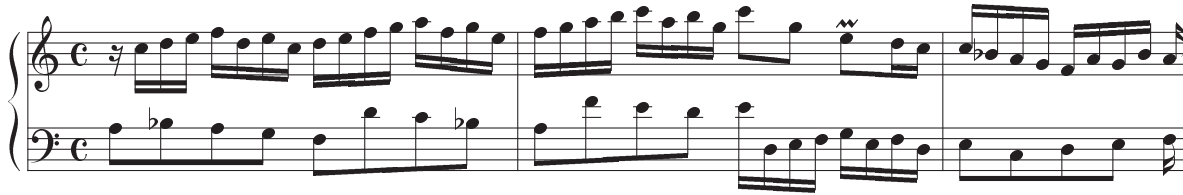


Figure 3: Excerpt called β_3 by Dreyfus [Dre99] of Bach’s *Invention in C*,

The composition of β_3 boasts the most spectacular “feats” with which Bach manipulated his inventions [...] The compositional strategy here began with a sequential chain [...] that provided a mirror image of the one used in β_2 . But not content to perform this one operation alone, Bach envisaged a more extraordinary tour de force by imagining a melodic inversion [...] (In the version preserved in the *Clavierbüchlein* for Wilhelm Friedemann, Bach was apparently unaware of how far he could actually go with β_3 , since the bass in m. 20—A–D–E–F—abandons the melodic inversion right from the start. *This means that Bach’s original version of β_3 was faulty, a mistake he rectified only some months later* [...]). [Dre96, p.19]

Six pages have passed between the caricaturization of the “self-congratulation” for the finding of unexpected musical possibilities of already-composed material, and the proof that Bach also incurred in unexpectedness—we actually do not have documental proof of how he felt when he realized his new motivic handling, but it seems more likely that he was pleased, rather than ashamed for not having devised it before.

In general, authors show how tonic ideas are affected *and created* by the processes involved in the ‘working-out.’ About Beethoven’s sketches, Cook writes:

It would be easy to rationalize these different aspects of the compositional process by seeing them in terms of an evolution from the simplest way in which the work can be conceived (as a set of characteristic motivic or thematic materials) through increasingly complex representations to the stage at which the final work is achieved; that is to say, the output of the first stage would be the input of the second stage, and so on. But such a rationalization would actually be quite misleading. In the first place, not all these stages are always found, nor is it always possible to distinguish them clearly from one another. And more importantly, Beethoven did not use these increasingly detailed representations of the emerging composition in a fixed sequence moving from the simple to the complex: in fact he did not use them in a fixed sequence at all. [Coo90, p. 193]

This is immediately applicable to the general compositional process. Also when accepting that inspiration could come in terms of technique and not only tonic material (see section 4.2), the birth of ideas and their realization do not come in a unique chronological sequence. It is of course a far more complex process.

4.4 The flash of inspiration

From the Romantic reverence to inspiration comes another prejudice, that of the sudden, unexpected flash of inspiration. It is comparable to the ‘Eureka’ moment in science, and in fact it has been compared. No doubt those flashes are real, however imbued by legend in some cases like Archimedes’ itself and Newton’s apple. But, as Koestler explains in *The Act of Creation* [Koe64], this moment comes only when the situation is ‘ripe’ for it, when the working mind that ‘receives’ it is saturated by a more or less painful struggling with the problem. One of the important features of Albert Rothenberg’s book *The Emerging Goddess* [Rot79] is the stressing of this point. The creator is always deliberately creating, either consciously or unconsciously.

But the shining features of the ‘flash of insight’ have blinded artists. As Nietzsche points out in *Menschliches Allzumenschliches* (quoted by Lowinsky [Low89, p. 45]):

The artists have a vested interest in our believing in the flash of revelation, the so-called inspiration, as if the idea of the work of art, of poetry, the fundamental idea of a philosophy shone down from heavens as a ray of grace. In reality, the imagination of the good artist or thinker produces continuously good, mediocre, and bad things, but his judgment, trained and sharpened to a fine point, rejects, selects, connects [...]

Hindemith, in *A Composer’s World*, writes the following, not less ironic, words:

Even many composers [...] look at the apparently unprompted appearance of their own ideas with amazement. They are in a permanent state of artistic narcissism, compared with which the harmless self-admiration of the original Narcissus is but child’s play. They will tell you about their creations as they would about natural phenomena or heavenly revelations. You have the impression, not that they themselves did their composing, but that “it” composed within them almost in spite of their own existence. [Hin52, pp. 57–58]

But he later on falls in a similar naivety. After stating that the difference between the genius and “Mr. X, the untalented composer,” is that the former has vision, he ‘defines’ “vision” in the following way. (To be

noted is that he has just substituted ‘vision’ for ‘flash;’ the rest remains speculative, unclear, unreal... and artistically narcissistic.)¹⁴

What is musical vision?

We all know the impression of a very heavy flash of lightning in the night. Within a second’s time we see a broad landscape, not only in its general outlines but with every detail. Although we could never describe each single component of the picture, we feel that not even the smallest leaf of grass escapes our attention.

[...]

Compositions must be conceived the same way. If we cannot, in the flash of a single moment, see a composition in its absolute entirety, with every pertinent detail in its proper place, we are not genuine creators [...]. The musical creator, [...] by reason of his earthy heritage, has to overcome many hurdles between [the vitalizing visions] and their realization. If he is a genuine creator he will not feel disturbed or discouraged by this fact. Not only will he have the gift of seeing [...] a complete musical form [...]; he will have the energy, persistence, and skill to bring this envisioned form into existence. [Hin52, pp. 60–61]

Finally, it is worth of noting that the ideal of the ‘flash of inspiration’ implies the conclusion that the resulting ideas are, in some divine, magical way, ‘right,’—a conclusion that lies at the core of the prejudices treated in previous sections.

5 The problem-solving approach

A short word has to be written on other kind of approach that repeats itself in a number of texts, the one treating composition as problem solving. It is particularly seen in Reitman’s *Cognition and Thought*, where a section is devoted to the ‘protocol’ in which the author and M. Sanchez transcribed¹⁵ the procedures a composer followed in the writing of a fugue [Rei65, pp. 166–180]. This protocol is referred to by Sloboda before the one on his work; and Sloboda’s protocol is briefly quoted in Robert W. Weisberg’s book *Creativity*

¹⁴In general, the book is a continuous mix of earthy observations and credulous speculations. Unquestionably false assumptions (for example that composers do not feel inclined to science, certainly a fallacy at least for twentieth-century) and weak grounds for historical discussions make the work a curious but useless set of rather erratic ideas.

¹⁵All makes it seem that this ‘protocol’ was carried out in Pittsburg, in the late 1950s.

[Wei93, pp. 222-223], with the conclusion that it fulfills the characteristics of problem solving as had been treated in previous parts of the book (Weisberg's).

Problem-solving is based in a trial and error scheme, and its main strength is its objective approach to inspiration, which prevents the theorist from going blind in the face of the 'flash of insight' (see section 4.4). In terms of trial-and-error, inspiration is sufficiently downgraded, and it is no longer expected to be magically right.

However, problem-solving approach does not make room for any genuine creation. Reitman says that "composing a fugue [is] an example of the sort of problem in which initial and terminal states and the transformational procedures are left entirely unspecified except for some property, in this case (is, fugue [*sic*]), associated with an object of the terminal state." However, the fugue composed by the object of the experiment seems to be Bachian in style;¹⁶ had Reitman be a musician himself, he could understand that this creates a formidable body of constraints, both cognitive and aesthetic, which render the composition of a fugue actually one of the best examples of a musical task that is too specified. The experiment reminds one those of rats in mazes: not even Newton, Bertrand Russell pointed out, could learn a maze by any method other than trial and error; the solution to the rat's and the composer's riddle is of a very definite type—no new thing is expected from them.

Traces of the problem-solving approach are to be found when musicians see compositional processes as the means and goals by which the composer renders an abstract, subjective idea, into an object for performing and listening. We have seen already some manifestations of this conception in Stravinsky, Hindemith, Saxton and Dubiel. They do not actually elaborate from this standpoint, but their testimonies could be easily taken by a psychologist trying to demonstrate that composition is a matter of problem-solving (as Weisberg does with Sloboda). Nicholas Cook's mentioned book departs from a similar view, and yet his conclusions, if not pretending to be a description of compositional process, are absolutely musical, as opposed to the Reitman's and Weisberg's mechanistic psychological approaches.

¹⁶No staff appears in the text, and the recordings have not been published. The comments by the composer leads the musician-reader to think that he is engaged with the 'emblematic,' Bachian idea of fugue.

And then we have the computers-programs that write music imitating given styles.¹⁷ Most important is the one by David Cope, reported in four of his books [Cop91, Cop96, Cop00, Cop01], all of them ignored by the authors referred to so far. A different project of this kind is Mario Baroni's, a computer-program that writes in the style of Legrenzi [Bar99]. The emphasis is put in the semantic rules ("grammar") governing music. There are no references by both authors to each other.

More philosophical questions are arisen by these applications than they can be treated here, above all: What is the extent up to which a computer-imitation of style can be called 'creative'? (Cope and Baroni keep silence—perhaps wisely—at this respect.)

However, a single paragraph is possible and important. A computer-program is able to follow the most complex set of rules. It can choose rightly between several options, even include random processes within the choosing criteria. But it cannot *create* those rules—it cannot program itself. If any computational concept can be associated to the creation of new techniques and rules (ranging from polyphony and *agitato* style to twelve-tone system and micropolyphony), it is that of programming a new set of commands. And the faculty of programming, there is no need to be an expert computer scientist to state it, is a privilege reserved to human beings—in fact, it is the fully and beautifully creative privilege that Cope, Baroni and the others make use of. Perhaps this fact is a milestone for further research on compositional processes and creativity. Understanding what computers cannot do, not only in music, could be one of the most revealing ways to understand what we do; a gateway to creativity—at least to its *human* manifestations.

6 Conclusion and prospect

This survey has to conclude here. The study of compositional process seems to be in a nascent state (in spite of its long life in history); it shows the features of a branch of knowledge at its dawn: intuitive and sometimes non-rigorous approaches, lack of serious reference between authors, prejudices inherited from past times. We can see these very same characteristics in the birth of modern astronomy, chemistry, calculus, physics. . . ¹⁸

¹⁷It has been pointed out that Dreyfus' analysis of Bach composition uses thought ways 'borrowed' from computer programming. The same is true for Sloboda, whose scheme quoted here as Figure 1 closely reminds a diagram of flow, the 'skeleton' of a computer program. The word 'protocol,' too, is derived from that tradition.

¹⁸A single thing I think is sadly missing: the enthusiasm that characterized the beginnings of those other fields.

Further research has a main immediate task: the confection of a critical apparatus to approach documents and data. We do have much material (particularly on twentieth-century composers, interviews, serious writings by themselves, etc.), but, as I have tried to point out, it is necessary to know what to believe, what to question, what to reject. It is not reliable to treat the letters by Verdi and the books by Xenakis the same way. The increasing body of documentation from past times (like the mentioned book by Alfred Mann, or the excellent account of the process of Renaissance composers, based on documents, by Jessie Owens [Owe97]) would encourage the need for knowing what to do with them when aiming to a general description.

Not less important is the acquittance of familiarity with other fields of creativity, and with the literature produced on them. This could render a mutual feed-back of much importance for musicians and non-musicians. Any theory of musical creation has to be confronted from other standpoints, to take profit of their knowledge, to avoid the tackling of questions that other realms have already solved.

Annotated Bibliography

- [Bar99] Baroni, Mario. "Musical Grammar and the Study of Cognitive Processes of Composition." *Musicae Scientiae: the Journal of the European Society for the Cognitive Sciences of Music* 3 (1999) no. 1: 3–17. An account of the computer program that writes music in the style of Legrenzi. No reference to Cope's similar project and writings [Cop91, Cop96, Cop00, Cop01]. Emphasis on the semantic structures of music. See page 23.
- [Coo90] Cook, Nicholas. *Music, Imagination, and Culture*. Oxford: Clarendon Press, 1990. The most 'musical' approach. Cook does not intend to make a theory of compositional process. However, he points out many important considerations missed by others. Delightful and stimulating. See pages 15 and 19.
- [Cop91] Cope, David. *Computers and Musical Style*. Madison, Wis.: A-R Editions, 1991.
- [Cop96] ———. *Experiments in Musical Intelligence*. Madison, Wis.: A-R Editions, 1996.
- [Cop00] ———. *The Algorithmic Composer*. Madison, Wis.: A-R Editions, 2000.
- [Cop01] ———. *Virtual Music: Computer Synthesis of Musical Style*. Cambridge, Mass.: MIT Press, 2001. This and the formerly cited books by Cope are a complete report of his work in a computer-program that writes music imitating styles with which it has been 'fed up.' No reference to Baroni's similar project and writings [Bar99]. Cope avoids the philosophical issues of computer's creativity, and does not pretend to make a description of human compositional process. See page 23.
- [dlMH98] de la Motte-Haber, Helga. "Kreativität und musikalisches Handwerk." In *Controlling Creative Processes in Music*, edited by R. Kopiez and W. Auhagen. Frankfurt am Main: Peter Lang, 1998. Reflection on the recuperation of 'objectivity' ideals in twentieth-century music. One of the only

two articles not translated to English in the book. Main drawback: no reference to the music of the past. See page 5.

- [Dor47] Dorian, Frederick. *The Musical Workshop*. New York and London: Harper & Brothers Publishers, 1947. A deeply reverent and loving homage to composers—made blind by the ‘myth of genius.’ No mention twentieth-century music, and very questionable historical basis for his arguments on pre-Baroque periods. Not a systematic project of describing the compositional process, but an excellent source of data on composers and compositions of the past.
- [Dre96] Dreyfus, Laurence. *Bach and the Patterns of Invention*. Cambridge, Mass.: Harvard University Press, 1996. Surveyed here is its first part, a discussion of German Baroque—mainly Mattheson’s—theories on compositional process. Its application to Bach’s *Invention in C* has strange results because of its ‘forcing’ within those theories. Some contradictions, but several interesting points. See the discussions beginning in pages 13, 16, and 18.
- [Dub99] Dubiel, Joseph. “Composer, Theorist, Composer/Theorist.” In *Rethinking Music*, edited by N. Cook and M. Everist. Oxford, New York: Oxford University Press, 1999. Passionately written, even incendiary, it becomes somewhat disorganized. Claims against the separation between composer and theorist, and treats composition as a complex problem solving. Promising analogy with speech and language, but no general conclusions are extracted. See page 13.
- [Hin52] Hindemith, Paul. *A Composer’s World: Horizons and Limitations*. Cambridge, Mass.: Harvard University Press, 1952. A disappointing text by a great composer. Common-sense is present all the time, and leads to some incredible contradictions. Hardly could I believe that Hindemith worked, while composing, the way he says the composer does. No musical examples, no direct references to concrete musical instances. See page 20 *et seq.*
- [Low89] Lowinsky, Edward E. “Musical Genius: Evolution and Origins of a Concept.” In *Music in the Culture of Renaissance & other Essays*, edited by B. J. Blackburn. Chicago: The University of Chicago Press, 1989. A long and deep review of the history of the concept. Its coverage of the history of musical theory and ideas on music makes it a fundamental source for any historical study of composition. Main drawback: twentieth-century is not included but relegated to a short final section. The whole present text is imbued with this article, particularly section 2.
- [Man87] Mann, Alfred. *Theory and Practice: The Great Composer as Student and Teacher*. New York: W. W. Norton, 1987. A delightful uncovering of more ‘real’ conceptions of composers about their task than those seen in their letters. From this standpoint, Chapter V, devoted to Romanticism, is the most significant (see page 4). But the central portion of the book is the publication and analysis (for the first time) of the autograph of Beethoven’s studies with Haydn.
- [Rei65] Reitman, Walter R. *Cognition and Thought: An Information-Processing Approach*. New York: John Wiley & Sons, 1965. Contains the ‘protocol’ of the composition of a fugue. It treats composition as a rather mechanical problem-solving process. The title reveals its ‘artificial intelligence bias.’ See page 21.
- [Rot79] Rothenberg, Albert. *The Emerging Goddess: The Creative Process in Art, Science, and other Fields*. Chicago and London: The University of Press, 1979. One of the few texts on general creativity with worth sections on music. It avoids the naive distinction of inspiration and working-out, and makes some important points, but it is clear that the author is not a musician himself. No conclusions on the particular realm of music.
- [Sax98] Saxton, Robert. “The Process of Composition from Detection to Confection.” In *Composition-Performance-Reception: Studies in the Creative Process in Music*, edited by W. Thomas. Aldershot (England), Brookfield (USA), Singapore, Sydney: Ashgate, 1998. A little disorganized.

It provides another form of approaching to the binary scheme of inspiration and working-out (not calling them by those names), which is interesting but somewhat speculative and contradictory. Besides, compositional task is conceived of as the ‘detection’ of the ‘idea,’ much in relation with problem-solving. Some philosophical references (mainly to Kant) remain unelaborated. The reader gets the feeling of not having understood the whole thing. See page 12.

- [Ses41] Sessions, Roger. “The Composer and his Message.” In *The Intent of the Artist*, edited by A. Centeno. Princeton: Princeton University Press, 1941. Unlike Session’s text of 1950 [Ses50], this one is not intended for musicians. Here we have the well-known scheme of inspiration and working-out, without the sound warnings about it that Sessions made later in the mentioned text. See page 11.
- [Ses50] ——. *The Musical Experience of Composer, Performer, Listener*. Princeton: Princeton University Press, 1950. Addressed to musicians, this compilation of six lectures is worth of study. On composition, it makes some important warnings on the distinction inspiration-working-out (not calling them by those names), and gives an example of Session’s own experience, which would be useful for the research. See pages 11 and 17.
- [Slo85] Sloboda, John A. *The Musical Mind: The Cognitive Psychology of Music*. Oxford: Clarendon Press, 1985. Important distinction between kinds of sources for the inquiry, and the excellent contribution of a compositional ‘protocol’ analysed by a musician (Sloboda himself), although the conclusions of this are rather tentative. See (mainly) pages 9 *et seq.*
- [Tan84] Tang, Paul C. “On the Similarities Between Scientific Discovery and Musical Creativity: A Philosophical Analysis.” *Leonardo* 17 (1984) no. 4: 261–268. Interesting comparison, but the musical discussion is poor and little detailed due to the limited sources (mainly verbal writings by Stravinsky). See pages 10 *et seq.*
- [Wei93] Weisberg, Robert W. *Creativity: Beyond the Myth of Genius*. New York: W. H. Greeman and Company, 1993. The section on musical composition is poor. It limits itself to a) treat it as problem-solving; and b) demonstrate that composers used to recycle musical ideas from earlier works (!). It is sadly clear that the author is not a musician.

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