

## Discovery, Creation, and Musical Works

Some aestheticians, e.g., Peter Kivy,<sup>1</sup> are Platonists about pieces of music. They hold that a piece of music is the sound structure indicated by the notation, and that performances are (or, present) tokens of the sound structure, i.e., tokens of a type. Other philosophers, e.g., Jerrold Levinson, deny this; in Kivy's terminology they are anti-Platonists. Levinson holds that the essential characteristics of a piece of music are a function of its compositional context in addition to its sound structure.<sup>2</sup> One of the most important arguments against the Platonic view involves the claim that pieces of music are *created* not *discovered*. They are brought into existence by the composer, whereas sound structures, like mathematical objects and theorems, have a timeless existence that makes it logically possible for them to be discovered at any time. Hence musical works cannot be identical to sound structures. Hence Platonism is wrong.

As a convinced Platonist about music, Kivy is compelled to deny the creativity argument. He claims that "it is more plausible to think of musical works as discoveries, rather than creations."<sup>3</sup> I will argue that this is mistaken. I believe that pieces of music are, with respect to their origin, similar to other works of art, and that works of art in general are not *discovered*. Musical works are *composed*, and composition is not plausibly thought of as a discovery. In arguing for this thesis, I will focus on the act of discovery. We have a much better understanding of the concept of discovery than we do of the concept of artistic "creation." Creation seems to be just a place marker for our difficulty in conceptualizing the relation of artists to their works. Hence, to become clearer about whether musical works, like theorems of mathematics, are discovered is to become clearer about the relation

of composers to their music. I have little to say directly about Platonism. If to deny that pieces of music are discovered is to deny Platonism,<sup>4</sup> then my argument supports Levinson's anti-Platonism about musical works.<sup>5</sup>

### I. THE UNDERLYING ASSUMPTIONS

To get at the heart of this philosophical puzzle it helps to make explicit the principal assumptions concerning the relation of the ontology of music to its genesis. Three crucial assumptions need to be examined:

1. X is a Platonic object (universal, type, structure) only if X is discoverable.
2. X is a Platonic object only if it is not the case that X has been created (by a person).
3. Music is not discovered.

Principle (1) connects discoverability with being a Platonic object in the sense of being a universal or abstract structure. It makes discoverability a necessary but not sufficient condition of being a universal. Principle (2) does the same in a negative way for the property of being created. It makes being created a defeating condition for being a Platonic object. Proposition (3) captures the common view that musical works, like other works of art, are brought into existence by an artist, not discovered like a law of nature or a theorem of mathematics. If we accept all three propositions, then we must conclude that musical works are not Platonic structures and that they are created. Conversely, if we accept that pieces of music are Platonic objects, then we must deny (3).

That being discovered and being created are incompatible explanations of the origin of

an artwork, the incompatibility that underlies (1) and (2), can be spelled out generally:

4. X is created if and only if X is not discovered (where X is an artwork).

This principle must be understood, of course, as only relevant to the mode of origination of the work—how did the work come about? Once a work is in existence, it can always be lost and then “discovered” by someone other than the original artist.

Everyone agrees that composers have something special to do with the existence of the musical work; composers “compose” pieces of music; somehow they “generate” the pieces. But how should we view the relation of *composition* between the composer and the music? What does this relation tell us about the ontology of music? Conversely, what does the ontology tell us about this relation? A common idea about what is implied by the statement that X is discovered is:

5. X has been discovered at time t if and only if X could have been discovered at any time X existed, and by other individuals.

Central to (5) is the idea that what is discovered is not created by the discoverer. Hence it is at least possible that someone else might have made the same discovery at some other time and place. This principle presents serious difficulties for a musical Platonist, who must either deny the principle or deny the intuition that works are so tied to their composers and historical contexts that it makes little sense to imagine that the works could have been composed in very different times and contexts. Yet such an intuition seems very strong to most of us. It seems terribly obvious, as in Renee Cox’s example, that “*Tristan und Isolde* could not possibly have existed, say, in the time of Josquin.”<sup>6</sup>

## II. PLATONIST ARGUMENTS

Having laid out the central assumptions concerning this issue, let me try to summarize Kivy’s arguments. Kivy seems to accept (1); that a piece of music is a structural type, as Levinson put it, “a *sound* structure—a structure, sequence, or pattern of sounds, pure and simple.”<sup>7</sup> Kivy

holds that Beethoven’s 7th Symphony, for example, is its unique sound structure. Hence he must argue that it is possible—even correct—to say that Beethoven’s composition of the 7th was, in effect, a discovery of this particular sound structure. Therefore Kivy must argue against the strong tendency to think that Beethoven brought the 7th into existence, and our strong tendency to affirm (3).

He follows several strategies. One is to exploit (4), the incompatibility between creation and discovery. He argues that musical works are not created. Hence, it is easier to conclude they are discovered. He considers an argument for musical creationism based on the following explication of the predicate “is created”:

6. X is created if and only if the process generating X is creative.

Since musical works, like other art works, are creative, they must be created. Kivy rejects this argument because he, rightly, rejects principle (6) on which it is based. Scientific and mathematical discoveries may be “creative,” just like great works of art. They may be produced by a process that we often naturally label creative. Nonetheless, such discoveries are not brought into existence, hence they are not *created* by their discoverers. So it is difficult to know whether an “achievement” is a creation or a discovery just by asking about the psychology, the creative process or the “creativity” required to accomplish it. While certainly correct, this argument is of limited utility for the musical Platonist. Principle (6) is wrong in general. To show this is merely to remove one (bad) argument for creationism. It does not imply that musical works are *not* created.

Next, Kivy offers two positive arguments for the claim that musical works are discovered. First, he quite plausibly suggests that it is not unnatural to speak of discovery in the context of musical composition. He claims, “talk about musical composition is thoroughly imbued with discovery words.”<sup>8</sup> Second, he questions principle (5), which he sees as a major impediment to musical Platonism; (5) requires that musical works have been composable—that is, for Kivy, discoverable—in contexts other than the actual contexts of composition. Since we feel this is impossible or nonsensical, it rules out musical

composition as a discovery. On the one hand, Kivy tries to show that it is not true of scientific discoveries that they could have been made at any time and by other individuals. They are nonetheless discoveries: “It is flat out impossible for a contemporary of Plato’s to have discovered (say) Kepler’s laws of planetary motion, or Newton’s gravitational laws as to have composed—i.e., discovered—the sound structure of Beethoven’s 7th, and for the very same reasons.”<sup>9</sup> On the other hand, he tries to make plausible the idea that artistic “discoveries” might be intimately tied to the personalities of the artists. This explains how the “by anyone” clause of (5) is not true of music and yet that fact is compatible with a piece of music being a discovery: “I see no reason why the discovery of so unique an object as the sound structure of Beethoven’s 7th Symphony should not be thought every bit as much an ‘expression’ of Beethoven’s personality ... as John Hancock’s signature is of his.”<sup>10</sup> In this way Kivy attempts to accommodate the contextual constraints of period and composer on the composition of music while maintaining that pieces of music are discovered not created.

Even though I agree with Kivy’s skepticism about principle (5), I think it is misguided to characterize pieces of music as discoveries. I contend that in arguing for the discoverist position, the view that musical works are discovered, the Platonist misconstrues the role of discovery in artistic creation. Moreover, we should question the alleged incompatibility, accepted by Kivy, of creation and discovery. Finally, the musical work, like other types of art, has features that make it difficult to view its composition as discovery rather than free creation.

### III. CREATION VERSUS DISCOVERY

I begin with skepticism about (4). No one, I take it, denies that Beethoven’s 7th has a sound structure. What do “creationists,” like Levinson, claim about this sound structure? The creationist position is that Beethoven *created* (made up, did not discover) the 7th, hence the 7th is not identical with its sound structure. Nonetheless, it is clear that Beethoven also discovered this sound structure in the process of composing the 7th.

This is not to say that Beethoven was as surprised as any subsequent reader of the score or

auditor of the sounds must be upon first “discovering” it. Hence Beethoven cannot be said to have “discovered” the sound structure of the 7th Symphony in the way that a listener does. But this is a confusion between discovering *what* the sound structure of the 7th is and discovering the sound structure *itself*. It is very odd indeed to say that Beethoven discovered what the sound structure of the 7th is. It is not odd to attribute such a discovery to any other auditor of the symphony.

It is difficult to get clear about the nature of the dichotomy between discovery and creation. Did Shakespeare discover or create the line “To be or not to be: that is the question”? Did Marvel create or discover the conceit, “The grave’s a fine and private place”? In the sense in which no one can create a sentence, no one can create a sound structure. But it seems no more sensible to say that speakers *discover* sentences either. Sentences and sound structures are available to anyone who knows the language.

No doubt there are sentence types and sound structure types. Does this automatically make the creationist wrong? Not necessarily. Levinson finds something else to be the object composed (written, painted—in short, created by the artist). Levinson hypothesizes that a piece of music is a special entity brought into existence by the composer: the sound/performance structure-as-indicated-by-the-composer-at-time *t*.<sup>11</sup>

It is certainly correct to note that many “discoveries” are made while composing a piece of music. For example, the composer discovers *how* to resolve some theme, *how* to develop a counterpoint, *how* to make the balance between the piano and the strings better in a passage, and so on. Life is full of discoveries in this sense. One discovers *how, that, where, who, what, which way*, etc. In this sense every artist makes countless discoveries. So does anyone who makes or does something novel. But does this support the view that the musical work is a discovery? I think not. I suggest that Kivy has misconstrued these familiar facts in his defense of the discoverist position, and inferred from the prevalence of discoveries in the activity of composition that the final object of composition is itself a discovery.

The distinction between discovering an object, e.g., the piece of music, and the various (as we might call them) instrumental discoveries, i.e., *how, what, that, etc.*, that lead to creating or

making an object can be made without implying that the instrumental discoveries are either unique or highly successful. The instrumental discoveries need not be of the same order, abstractness and generality as, for example, scientific discoveries. Consider a commonplace example: an artist who only makes rectangular paintings decides to paint a canvas in an odd shape and to that end discovers, that is, figures out, how to make a stretched canvas in the desired shape. This can be called a discovery the artist makes even though other artists may already have known how to do the same thing and may even have found better ways to do it.<sup>12</sup>

Let me turn from the suggestion that discoverers misconstrue the ubiquity of discovery, to ask what is objectionable in their position. Principally, it is the suggestion that a piece of music has a prior and independent existence. This is as difficult to accept about a piece of music as it would be about a painting. The analogy to mathematical and scientific discovery is also objectionable. Discoveries in math and science are often propositional. Hypotheses, theories and theorems are true or false. These are not good analogies to a piece of music. Moreover, anything Beethoven might have composed for his 7th symphony, but did not, would have been his choice, and would therefore have been a 7th Symphony with different properties. We need to examine these points more closely.

#### IV. APPLIED DISCOVERIES DON'T HAVE TIMELESS EXISTENCE

The connection between being discovered and being some sort of Platonic universal is obviously not invariable. Being discovered is not a sufficient condition of being a universal or Platonic object. However, there seems to be a much closer connection between being discovered and *prior existence*. The confusion of timeless existence with prior existence is aided by the assumption that if X exists prior to its discovery, and if X is not a physical object, then X has timeless existence. I want to argue that this inference is mistaken.

The object of discovery has to have a prior existence; the object that is created must not. But consider: I discover *how* to put the jigsaw puzzle together. I discover *where* this piece fits. I discover *the way* to put this piece into the

puzzle. This way existed prior to my discovery of it. But did it exist before the puzzle was created?

Some solutions to applied puzzles contain universals, other solutions are particular to the case at hand. In the course of working out a relationship of areas an architect might discover a solution that corresponds to, or implicitly contains, some theorem of geometry. Did the *applied solution* of that problem timelessly exist along with the theorem? To say yes has little meaning that I can see. We can look at art in the same light. Did the form of some particular painting of Mondrian's timelessly exist? Mondrian certainly did not create the rectangle, nor did he create the blue rectangle, but he did create that particular solution (if that is the right word) or application of geometry. That application is simply inconceivable independent of Mondrian's act of painting.

Of course, it is logically possible for someone to have painted a visually identical image in the Middle Ages, but does that fact give Mondrian's painting a timeless existence? Giotto could not have discovered that one blue rectangle in the lower right corner solved the problem of balance (as Mondrian saw it) in Mondrian's painting. Certainly discoveries, both local and farther reaching, were made by Mondrian, in the course of painting this painting. But they do not, in the main and in so far as they are related to this painting, exist prior to this painting.<sup>13</sup>

Consider the case of a detective who discovers *who* killed the dead man. I suggest that this is an applied puzzle, like some geometric problems in abstract paintings, or some problems in counterpoint in particular pieces of music. The thing discovered, the solution of the puzzle, does not have timeless existence because the puzzle, the question, just came into existence.

I claim that even if there are discoveries connected to composing music, usually they cannot sensibly be said to exist prior to the *act of composing this particular piece*—always excepting the musician who makes some sort of theoretical discovery about instrumental sound or formal structure. A composer's discoveries are solutions to certain problems that develop in the course of this composition. Hence, they lack the generality and context-free nature of a timeless discovery, whether about geometry, color, or harmony.

Nor is there any reason to suppose that the piece *as a whole* is discovered, just because discoveries are made in the act of composing the piece. It seems a fallacy of composition (in the logical sense) to say that the piece as a whole is discovered because discoveries are made in the course of composing the piece. Is there a question with sufficient generality which can be abstracted from a particular context of composition to which the piece of music can be considered an answer or solution? Surely not, except in the special case of pedagogical music, like Bartok's *Mikrokosmos*. At best one might consider the piece of music as a whole to be the solution to a particular problem set by the composer: "what will satisfy me here (under constraints  $x,y,z$ )?" But, even in such a case, what is discovered has no more prior existence than the solution to a murder mystery before the crime.<sup>14</sup>

I have tried to show that the sense in which a composer makes discoveries in the course of composition is compatible with the fact that the discoveries do not pre-exist the act of composition. But discoveries that do not pre-exist the act of composition and which do not necessarily have a truth value, correctness or validity, sound like free creations of the composer.

#### V. THE INDEPENDENCE OF WHAT IS DISCOVERED

It would be very difficult indeed to provide a fully adequate analysis of "N discovered O," not just because the concept of discovery is extremely complex—possibly requiring conditions on N, on the process that counts as discovery, and on O—but also because the implications of "N discovered O" seem to vary from case to case. It would be convenient for my argument against the discoverist if a condition could be specified such that "N composed M" could fail that condition, and thus fail to count as "N discovered M." Later in this section I will focus on one such condition, the fact that in composing M, N chooses M. First, I want to touch on a related condition that is involved in many cases of discovery, but which is missing or at least rare in musical composition, namely, propositional content.

There are many cases of discovery that involve explicit propositional content, for example, "Pythagoras discovered the Pythagorean

theorem." Here we specify the object of discovery as a theorem, hence a proposition. It seems, in fact, that most cases of discovery involving abstract objects, as in logic and mathematics, involve propositional content, even if implicit. Consider: "Riemann discovered Riemannian geometry." Surely, although specified as a geometry and therefore superficially as a non-propositional object, the object is, or presupposes, a whole complicated set of propositions that Riemann discovered. Even in the empirical sciences the same analysis seems appropriate. When Watson and Crick are said to have discovered "the double-helix" what is really meant is that they discovered that the structure of DNA is a double-helix. Other investigators had surely observed DNA in a variety of guises, without understanding adequately what they were observing, but Watson and Crick are credited with correctly hypothesizing its structure.

We can thus note that many discoveries, perhaps all in science and mathematics, involve, either explicitly or implicitly, discovering the truth of propositions. It is difficult to see how a piece of music could be a discovery in this sense. Yet mathematics constitutes the closest analogy to what musical discoverists want to claim for music, since in both mathematics and music the structures discovered are abstract and timeless. What are purported to be discoveries in science and mathematics could be mistaken or incorrect. Can a piece of music be mistaken, wrong or incorrect? Is every piece of music automatically correct? Unlike mathematicians and scientists, are musicians never wrong? And when they change a piece of music, have they automatically made a new discovery? All this seems wrongheaded. Composers perhaps discover the way a particular sound structure sounds or works together with other sound structures to their overall expressive ends, but *decide* that the piece doesn't work as well as with a different sound structure.<sup>15</sup>

Composers can change their minds. They can decide, as well, to change their music. How is this compatible with the idea that they discover the music? The piece of music is a free choice of the composer who can change it at will. But any object that can be changed at will doesn't have an independent character to discover.

The discoverist may answer that, if the music is changed, then there is a second piece of music

since there are two slightly different musical structures. The composer has then discovered two pieces of music. Moreover, the discoverist can remind us that mathematicians can also change their minds. Hence the fact that composers change their minds and decide to publish one or another version of a piece does not count against the discoverist position.

It seems to me that this rejoinder presents an implausible analogy. When mathematicians change their minds it is because they think a mistake has been made—the proof doesn't work, the answer to the problem isn't correct, and so forth.<sup>16</sup> But composers, at some points at least, can decide between alternative developments just because one sounds better or they like the effect of one better than the other. There only need to be a few cases like this to cause a deep problem for the discoverist. Choice is just as inherent in the composition process as discoveries are.

Composition is fundamentally an act of making, and like other art making, it is doubtless a combination of imagination, discovery and decision. This is not to endorse the implausibly strong principle:

7. For any given note of a piece of music  $M$ , and compositional process leading to  $M$ , the composer was free to choose a different note just because he or she liked it better.

Clearly, this is not true for some notes—e.g., the last notes of a cadence or the final notes of a piece in classical harmony. Mozart's *Musical Joke* is a parody based, in part, on choosing wrong notes. Still, there *are* musical jokes, and (7) could be true for almost any note because it could be true that the composer has chosen to make a joke (perhaps just for one evening's performance).<sup>17</sup> A weakened version of (7) will do anyway:

7a. For some notes of a piece of music  $M$ , and compositional process leading to  $M$ , the composer was free to choose a different note just because he or she liked it better.

It seems to me that 7a is both true and important. Hence there is a possible alternative to  $M$ ,  $M'$ . The composer preferred  $M$  over  $M'$  (as well as over many other possible alternatives).

Had the composer chosen  $M'$ , it might have made the resulting piece better, worse, or equally interesting—in any case, the choice would have been possible. But if this is so, we seem compelled to say that the piece's character is at least in part determined at the time and through the process of composition by the composer. Of course, no one can create/make a sound structure, any more than any one can create/make a sentence. Since that is so, it follows, as alleged by the anti-Platonist, that the piece composed is not the universal sound structure.

I imagine this rejoinder by the Platonist: "I grant that composition involves choice. But the choice is among pre-existing sound structures. Composition is like discovering an attractive piece of driftwood. There may be other pieces around that are similar, but the artist chooses this particular one." Thus, the composer is unlike the painter, who does bring something genuinely new into the world. In my view, this unfairly divides the composer from other artists. Just like the painter or the poet, the composer makes an application of various patterns and principles. Composers don't create the harmonic structure they work with; Mondrian didn't create geometry or color; poets don't create the words, their meanings, nor the rules of syntax, nor finally, their sentences. But the character of what each one presents can be a function of their choices at every level.

#### VI. DISCOVERIES ARE OFTEN FACTS— ARTWORKS NEVER ARE

Kivy gives the example of Picasso who "'discovered' the form of a bull's head in a bicycle saddle and handle bars." Kivy goes on to claim, "that, you will recall is all that the *Head of a Bull* is. There was nothing to 'create': the saddle and handle bars were already there. Here then is a discovery as unique, as personal as any 'mere' creation can be thought to be. Only Picasso could have made it."<sup>18</sup> I disagree. I grant that Picasso discovered *that* this bicycle saddle and these handle bars could be put together this way to suggest the appearance of a bull. But I see no reason, short of the fallacy of composition, to equate Picasso's piece with this discovery. We should distinguish the artwork from what Picasso discovered. Picasso has to answer for *the piece*; this piece slightly affects critical judg-

ment about his work, it is collectible, etc. None of these things is true of *the fact* that these objects put together this way can suggest the appearance of a bull. Picasso's piece continues his exploration of the bull theme, and although his discovery of the appearance in the bars and saddle cannot be interpreted, the *piece* surely can be.<sup>19</sup> Nor is it irrelevant that Picasso's other works make it easier to see the bull in the bars; the piece is partly determined by the title and its place in Picasso's body of work.

I must also disagree with the claim that only Picasso could have made this discovery. What is clearly true is that only Picasso could have made this piece, with this relation to his other works. But it is easy to imagine someone else realizing that a face could be made with these objects. People see this sort of thing all the time. When they make this discovery they haven't yet made any sort of art. Far from being an example of a unique and personal discovery, this is an example of a common type of discovery that led to a unique and personal artwork.

By contrast, in the typical case of composition there is nothing to be discovered that is independent of the process of composition, filled, as it is, with the composer's taste, values, interests, competence, favorite motives, etc. Imagine a hundred bulls' heads made in Picasso's way, and someone "discovering" that they could be: arranged as concentric bulls-eyes (Jasper Johns); made into a running fence (Christo); made into a rectangle (Mondrian); and so on. These are "discoveries" that only make sense within each particular artist's body of work. Hence they are not discoveries of pre-existing independent objects that others could have discovered. Only Wagner could have "discovered" his Tristan chord because only Wagner had that style and that set of interests. Only Wagner could choose to give that chord and its related motives their particular use and meaning.<sup>20</sup>

## VII. CONCLUSION

I believe that the arguments of this paper add up to an overwhelming reason to deny that composition is to be understood as a form of discovery as we apply that concept in mathematics, science, or exploration. There are often discoveries along the way to composition, but there are also many choices made for a variety of reasons.

The resulting work is not a final overall discovery of the final overall sound structure.

The position of those who claim that a musical work exists independent of the composer, awaiting his or her discovery, is implausible—not just in its insistence on the pre-existence of the object of discovery, the musical work, but also in its insistence on music being different in a fundamental ontological way from the other arts. I have argued that there is no difference in this regard between the various arts. All involve some discoveries, all involve forms and facts that cannot be created, all are such that the work of art is the result of choice on the artist's part. Not only have we seen in what ways discovery is pervasively involved in all of the arts, but, more importantly from a philosophical point of view, we have seen how we can say this without being committed to viewing the work, as Kivy wished to view a musical work, as an object independent of the artist and the activity of creation.<sup>21</sup>

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1. Peter Kivy, "Platonism in Music: Another Kind of Defense," *American Philosophical Quarterly* 24 (1987): 245–252.

2. Jerrold Levinson, "What a Musical Work Is" *Journal of Philosophy* 77 (1980): 5–28.

3. Kivy, "Platonism in Music," p. 248.

4. There may be forms of Platonism that are unaffected by my argument against the claim that musical works are discovered. Part of the difficulty is the complex terminological issue of what is meant by "Platonism." If we mean by "Platonism" any ontology of music that identifies musical works with some abstract entity, then Levinson's proposal to define the musical work as an indicated type of a certain sort could be viewed as a form of Platonism.

5. For a related argument that tends to run in the opposite direction, from anti-Platonism to anti-discovery, see Renee Cox, "Are Musical Works Discovered?" *Journal of Aesthetics and Art Criticism* 43 (1985): 367–374.

6. Cox, "Are Musical Works Discovered?" p. 371.

7. Levinson, "What a Musical Work Is," p. 6.

8. Kivy, "Platonism in Music," p. 249.

9. *Ibid.*, p. 250.

10. *Ibid.*, p. 251.

11. Levinson, "What a Musical Work Is," p. 20.

12. In a finer-grained analysis it would be important to distinguish between those instrumental discoveries that are relevant to the content of an artwork and those (such as *how* to build a shaped-canvas) that are not. If, with the famous

chord of the *Tristan* Prelude, Wagner discovered how to blend ingeniously, in Roland Jackson's words, "elements that are distinctly melodic as well as harmonic," that discovery seems very relevant, indeed central, to the content of the Prelude as it unfolds. See Roland Jackson, "Leitmotive and Form in the *Tristan* Prelude" in *Prelude and Transfiguration from Tristan and Isolde*, ed. Robert Bailey (New York: W.W. Norton, 1985), p. 269.

13. Albers, to be sure, in the course of painting, discovered certain features of color perception that have a quasi-timeless existence.

14. One may create what one *then* discovers to have certain properties. Take the case of pedagogical music: the composer may be looking for an exercise with certain properties, and may compose a few fragments of music before coming up with one that meets the conditions he requires. Even such a case can be viewed as creating music that one sees (discovers, if you will) has the desired properties.

15. There are interesting atypical cases that illustrate these points. Elliot Carter's *Eight Etudes* for woodwind quartet is a piece that was composed in part to meet certain pedagogical requirements in the context of Carter's classroom exercises for his composition students. E.g., the third etude meets the constraint that the instrumentalists never change their pitch (note). It is a piece built entirely out of tone colors and constantly changing voicings and doublings. We can truly say that Carter *discovered* one way to do this, and that this etude is correct to that extent.

16. This is not to deny that taste or a sense of aesthetics plays a role in mathematics. A mathematician may choose to publish, among two proofs, the more elegant proof.

17. Moreover, there is "appropriation" in all the arts—a practice that has authorized composers to take fragments of previous music and subject them to distortions and other 'incorrect' procedures. Appropriation, irony and jokes together make almost anything musically (not just logically) possible. This is all possible without invoking the further possibility of Cagian indeterminacy.

18. Kivy, "Platonism in Music," p. 251.

19. Indeed, one of the major puzzles about the discoverer position is how it will accommodate interpretation. *Prima facie*, it makes interpretation, if not impossible, very minimal.

20. See Bailey, op. cit., for the historical background and analytical essays on the *Tristan* Prelude. Wagner in fact did not discover that chord; rather he probably derived it from Spohr's opera *Der Alchymist*. However, he made entirely different use of its harmonic possibilities, possibilities that I suggest only exist within the context of Wagner's work. See Jackson, "Leitmotive," 268–269.

21. An earlier version of this paper was presented to the Pacific Division of the American Society for Aesthetics (March 1990). I am grateful to the participants and especially to Peter Kivy, whose forbearance I took to be gentle support. I also wish to thank Christopher Shields for helpful comments on an earlier version of this paper.