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MUSIC THEORY & ANALYSIS

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COLOPHON

Music Theory & Analysis (MTA)

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David CLARKE

*Musical Indeterminacy and Its Implications for
Music Analysis: The Case of Cage's Solo for Piano*

Abstract

Ambiguity, a quality inherent in many artworks, acquired a radical dimension in the indeterminate musical works of the post-1950 avant-garde. Such music challenges the ontological status of the work and consequently the activity of musical analysis in relation to it. One model for an epistemological exploration of these issues is the semiological tripartition of Jean-Jacques Nattiez, influenced by Jean Molino, together with its associated notion of the “total musical fact.”

Investigation of a work such as Cage's *Solo for Piano* (1957–58) illustrates how indeterminate music fosters a redrawing of the conventional division of labor among composer, performer, and analyst. It also suggests that analysis might need to become not only more flexible and capacious regarding its own concept, but also open to a further blurring between itself and music aesthetics and theory—just as Cage's output opened itself up to Zen philosophy.

While these altered conditions do not entail a total dislocation from those surrounding more “conventionally” ambiguous musical works (e.g., Debussy's *Prélude à l'après-midi d'un faune*), they arguably do represent, *pace* Nattiez, a difference in principle as well as in degree. They are, we might say, radically ambiguous, and this needs to be reflected in the epistemological framework within which we consider them. To argue otherwise would be to fail to keep faith with what is radical about indeterminacy.

Keywords

John Cage, indeterminacy, ambiguity, epistemology, Nattiez, semiology, tripartition, total musical fact, graphic scores, analysis and performance

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Musical Indeterminacy and Its Implications for Music Analysis: The Case of Cage's Solo for Piano

David CLARKE

(To Paul Attinello, friend and colleague)

INTRODUCTION

“The work of art is a fundamentally ambiguous message, a plurality of signifieds that co-exist within a single signifier. [...] Such an ambiguity becomes—in contemporary poetics—an explicit goal of the work, a value to be realized in preference to all others.”

So wrote Umberto Eco in *The Open Work*, first published in 1962.¹ With this statement he refers to a tendency within modern art whose manifestation in music we know well: the property of *indeterminacy*—compositions in which the ordering of events or the determination of content (or both) is rendered critically unfinalized by the creator. While Eco's book is principally concerned with poetics, he is far from oblivious to the iconic place that music has within this aesthetic tendency. Indeed, his opening essay sets the scene with a discussion of Stockhausen's *Klavierstück XI* (1953), Berio's *Sequenza 1* for solo flute (1958), Pousseur's *Scambi* (1957), and Boulez's Third Piano Sonata (preliminary version 1958). To these Europeans one could also add New York-based composers of the 1950s such as John Cage, Morton Feldman, Earle Brown, and Christian Wolff, the harbingers of wider experimental tendencies in music that would extend into the 1970s.² The sequence of ideas in Eco's statement documents a historical progression of art toward a denial of sequence and progression. First pointing to ambiguity as an inherent feature of art in general (perhaps of any art worthy of the name), Eco then suggests open-form works as a type of art that subsequently

1 Umberto Eco, *Opera aperta*, rev. ed. (Milan: Bompiani, 1968), 6: “L'opera d'arte è un messaggio fondamentale ambiguo, una pluralità di significati che convivono in un solo significante. [...] Tale ambiguità diventa—nella poetica contemporanea—una delle finalità esplicite dell'opera, un valore da realizzare di preferenza ad altri.” See also n. 4 regarding the above English translation.

2 See Michael Nyman, *Experimental Music: Cage and Beyond*, 2nd ed. (Cambridge: Cambridge University Press, 1999).

takes this principle to a higher power. If Eco is right, indeterminate works would inaugurate a new category of ambiguity—one that I will here term “radical ambiguity.”

This condition—if indeed it is one in its own right (a point to which I will later return)—raises important questions. What are the implications of such radically ambiguous works for musical analysis? Are these works, which we associate with the post-1950s musical avant-garde, on some level unanalyzable? And if not, do they nonetheless pose distinctive difficulties for analysis that could challenge the key assumptions on which it is constructed? My brief here is to consider the epistemological implications of these questions. I will also be concerned to ground the general in the particular, hence I include reflections on Cage’s *Solo for Piano* (1957–58) by way of a case study on which to base both theoretical and analytical perspectives.

As a theoretical (or meta-theoretical) tool for this investigation, I draw on the semiological approach of Jean-Jacques Nattiez. Revisiting this body of work may seem a return to a paradigm that had its heyday among music theorists in the later twentieth century; but perhaps this is a no less salutary “blast from the past” than my actual musical subject matter. (Nattiez’s *Fondements d’une sémiologie de la musique*, with its emphasis on paradigmatic analysis and adaptations of linguistic discovery procedures, reflected the ethos of that time; the text took on a somewhat different avatar, reflecting a different time, as *Musicologie générale et sémiologie*, its stronger emphasis on the discursive contexts of analysis reflected in the title of its English translation, *Music and Discourse*.)³ Although Nattiez’s semiology always contained much that was contestable, qualifying any claims to represent a definitive methodology, his tripartitional model and its associated notion of the “total musical fact,” both of them indebted to the thought of Jean Molino, hold pragmatic value for the topic of this essay. Particularly suggestive in this context is the epistemological tenor of *Music and Discourse*, which, rather than seeking to develop an analytical methodology for semiology (as was the case in *Fondements*), dwells on the theoretical premises behind various styles of analysis. More specifically, my own eventual assessment of the implications of indeterminacy for musical analysis hinges on a critical reading of Nattiez’s engagement in *Music and Discourse* with Eco’s theory of the open work.⁴

3 Jean-Jacques Nattiez, *Fondements d’une sémiologie de la musique* (Paris: Union générale d’éditions, 1975); *Musicologie générale et sémiologie* (Paris: Christian Bourgois, 1987); and *Music and Discourse: Toward a Semiology of Music*, trans. Carolyn Abbate (Princeton, NJ: Princeton University Press, 1990).

4 Nattiez also quotes the above passage from Eco; see *Music and Discourse*, 83. Abbate’s translation, which I have modified in my own citation, is based on the French version of Eco’s text, *L’oeuvre ouverte* (Paris: Seuil, 1965), 9, to which Nattiez originally referred.

MUSICAL AMBIGUITY INTERPRETED THROUGH THE TRIPARTITION

Key to Nattiez's semiological framework is the principle that he, following Molino, terms "total musical fact"—after the idea of "total social fact" in the anthropology of Marcel Mauss.⁵ The musical work is more than a mere text: "The *essence* of a musical work is at once its genesis, its organization, and the way it is perceived."⁶ Hence, the total musical fact of a work is distributed across the three domains Molino termed *poietic*, *neutral*, and *esthetic*, as shown in Figure 1.

Figure 1: Semiological tripartition after Nattiez and Molino

Many will be familiar with these terms. Analytically speaking, the poietic level examines the processes of a work's production; the esthetic level concerns its perception or reception; and the so-called neutral level analyzes its formation as a material object. Seeking to encompass the entire field across which the meaning of musical or indeed any symbolic activity resides, this framework nonetheless resists being construed as a communication model that assumes the unambiguous transmission of a message from sender to receiver. As Molino puts it, "[E]very symbolic object presupposes an exchange in which producer and consumer, transmitter and receiver, are not interchangeable and do not have the same point of view on the object, which they do not constitute in the same way at all."⁷ The left- rather than right-pointing arrow between the esthetic and neutral levels in Figure 1 indicates that the perceiver brings his or her own circumstances and faculties to bear on what the creator has created. Already, then, the model accommodates the possibility of ambiguity.

There are, however, problems with the neutrality of the neutral level. Can an artwork ever be considered independently of our perceptual apparatus or the assumptions we make about the creative process? In *Music and Discourse* Nattiez maintains that "[a]n objective

5 Jean Molino, "Musical Fact and the Semiology of Music," trans. J. A. Underwood, introduction by Craig Ayrey, *Music Analysis* 9/2 (July 1990), 105–11, doi:10.2307/854225. Molino's essay first appeared as "Fait musical et sémiologie de la musique," *Musique en jeu* 17 (1975), 37–62.

6 Nattiez, *Music and Discourse*, ix.

7 Molino, "Musical Fact," 130.

description of the neutral level can always be proposed—in other words an *analysis* of its immanent and recurrent properties.”⁸ “Objective” might mean that judgments about a work can be independently verified against the configurations of its content, rather than that they bear no hint of subjectivity. But to be analyzed in this way, the work needs to have left some material trace—the key marker of the neutral level (and perhaps a less contentious name for it). In Western music this takes its quintessential form as the score of the work—which is to say not that score and work are ontologically identical, but that the former is key to underwriting the ontology of the latter. Whatever the problematics of nomenclature, this third level—not intrinsically poietic or esthetic—remains theoretically necessary for certain kinds of music. Significantly, indeterminate music retains an at least vestigial connection with those kinds of music. Even under conditions of acute ephemerality and ambiguity, indeterminate works still do not entirely cut loose from a material trace—however minimal, however undetermined.

At issue is whether indeterminate artworks (including also mobile form works and aleatory or chance compositions) simply take ambiguity, a general property of artworks, to a higher degree; or whether, in radicalizing it—by making it, in Eco’s words, “a value to be realized in preference to all others”—they effect a different aesthetic order. In the first instance it will be helpful to examine a more conventional example of musical ambiguity as a benchmark against which to evaluate the break made by the subsequent avant garde. To this end, I will briefly consider Debussy’s *Prélude à l’après-midi d’un faune* (1894), which Pierre Boulez claimed heralded the awakening of modern music. Ambiguity saturates this piece from the very start (see Example 1(a)). The meter of the opening flute solo is elusive, as is the key center. After a quasi-chromatic descent through the tritone C#–G, the implied tonality of the sinuous unaccompanied melody hovers between C# minor and E major; but everything is in any case displaced by the work’s first harmonic progression, to a Bb⁷ chord (shown schematically in Example 1(a)).

8 *Music and Discourse*, 12. In the earlier *Fondements* and in Nattiez’s compendious analysis of Varèse’s *Densité 21.5* (based on a rigorous inventory of “paradigms”—the varied repetitions of thematic units) the would-be neutrality of the neutral level was characterized by a putative suspension of *a priori* assumptions about whether the relationships “discovered” were determined at the level of composition or perception—or both, or neither; such judgments were for a subsequent stage of analysis. See Nattiez, “*Densité 21.5* de Varèse: Essai d’analyse sémiologique” (Montreal: University of Montreal, Groupe de Recherches en Sémiologie musicale, 1975); revised as “Varèse’s ‘*Densité 21.5*’: A Study in Semiological Analysis,” trans. Anna Barry, *Music Analysis* 1/3 (October 1982), 243–340, doi:10.2307/854178.

Example 1: Claude Debussy, *Prélude à l'après-midi d'un faune*

(a) Fl. 1

(b) W.W. Vc. C.b.

Far from being inimical to analysis of the work, these ambiguous conditions become its very terms of reference. The tonal dichotomy C#–E functions as an integral feature of the *Prélude*, including its large-scale structure. For reasons of space, I will not explore this in detail, but the ambiguity plays out on the large scale in two rare moments of tonal closure: the rapturous passage in D $\flat$ (enharmonically equivalent to C#) major starting at rehearsal number 6⁺⁵ (see Example 1(b)), and the work's conclusion in E major. Significantly, neither of these tonalities assimilates to the other; rather, each continues to bear traces of the wider ambiguity of which it is part. The melody of the D $\flat$ major passage alludes (in major form) to the motivic content of the opening flute melody (shown by braces in Example 1); while its bass line invokes the tritone C#–G (here D $\flat$ –G) from the same flute solo. Similarly, the final cadential gesture of the work (at rehearsal number 12), affirming E major, is associated with a C#–E melodic motion in the flute.⁹

So, far from being resistant to musical analysis, ambiguities like that found in this example from Debussy provide clear pointers to an analytical agenda. In Nattiezian terms, we can say that the C#/E ambiguity inheres at the neutral level, as an immanent feature of the work, legible within the score as a sign made evident through repetition. For this reason, we can also infer its pertinence at the poietic level, even without a sketch study.

9 For a more extensive, Schenkerian analysis of the work, see Matthew Brown, "Tonality and Form in Debussy's *Prélude à l'après-midi d'un faune*," *Music Theory Spectrum* 15/2 (Autumn 1993), 127–43, doi:10.2307/745811.

In his taxonomy of analytical situations, Nattiez would classify such an action as part of an *inductive poietics*:¹⁰ the recurrence and sheer structural salience of this musical feature suggest that it is unlikely to be a coincidence but is probably a result of (conscious or unconscious) compositional intent. Moreover, we might also practice *inductive esthetics* by assuming that the workings-out of this ambiguity are audible, in practice or in principle (for example, by playing the related elements in sequence, in the spirit of Hans Keller's functional analysis, and thus rendering the connections empirically evident).¹¹ Hence, although Boulez casts *Prélude à l'après-midi d'un faune* as a harbinger of musical modernism, the work functions semiologically in accordance with classical principles in that its meanings become intelligible through conventions shared between composer and audience, and through structures that are an immanent presence in the score. In other words, there is a convergence (or at least a significant overlap) of the poietic, esthetic, and neutral levels.

This situation changed as modernist composers in the twentieth century began to adopt increasingly rationalized or arcane procedures into their creative processes, including the serial techniques of the Second Viennese School and proportional principles such as the golden section and the Fibonacci series in the music of Bartók.¹² Historically, these conditions progressed to an acute level. One diagnosis of what is going on in post-1950 art music is that one or more of the levels of the tripartition, or the relationships between them, are placed under extreme duress. Processes at the poietic level—as found in the multiple-serialist techniques of Milton Babbitt and Boulez, or Maxwell Davies's use of magic squares—find no necessary counterpart at the esthetic level. Such a dislocation pushes the music beyond the listener's cognitive constraints, as Fred Lerdahl has claimed (albeit contentiously).¹³

More radically still, if the kinds of musical syntax that Lerdahl holds to be essential to lucid musical cognition became confined to the poietic level in multiply serialized works, they were renounced altogether in experimental and indeterminate practices of the 1950s and '60s. The condition is epitomized by Cage's insistence on the salience of individual sounds in their own right—"a composing of sounds within a universe predicated upon the sounds themselves," as he put it, in which "[a] sound does not view itself as thought, as

10 Nattiez, *Music and Discourse*, 140–41.

11 Ibid., 141–42.

12 And for that matter also in the music of Debussy; see Roy Howat, *Debussy in Proportion: A Musical Analysis* (Cambridge: Cambridge University Press, 1983).

13 Fred Lerdahl, "Cognitive Constraints on Compositional Systems," *Contemporary Music Review* 6/2 (1992), 97–121, doi:10.1080/07494469200640161.

ought, as needing another sound for its elucidation.”¹⁴ This, then, represents a challenge to the neutral level itself, to any concept of the work’s material trace being determined by an immanent, relational structure. The associated challenge to any transcendent principle of music analysis (its conditions of possibility) is made even more evident by indeterminate works whose trace (their vestigial connection with the principle of a score) amounts to a single instruction such as “Draw a straight line and follow it”—La Monte Young’s *Composition #10* (1963).¹⁵ And the same goes for scores, or elements of them, that have a strongly graphic conception. What is an analyst to do, for example, with a notation such as the fragment shown in Example 2, from Cage’s *Solo for Piano* (1957–58), whose associated instruction to the performer reads, “Play in any way that is suggested by the drawing”?

Example 2: John Cage, *Concert for Piano and Orchestra, Solo Piano*, 31, fragment. Copyright 1960 by Henmar Press Inc., 373 Park Ave., New York 16, NY. Reproduced by kind permission of Peters Edition Limited, London on behalf of Henmar Press, Inc., New York.

In such cases—especially where graphic invention pervades entire scores (which may be of striking visual beauty)—musical graphology, rather than underwriting the identity of the work, significantly underdetermines it, questioning conventional connections between

14 John Cage, “Composition as Process: I. Changes,” in *Silence* (London: Marion Boyars, 1983), 27; and “Experimental Music: Doctrine,” in *ibid.*, 14; emphasis in original.

15 This and other text scores are discussed in Virginia Anderson, “The Beginning of Happiness: Approaching Scores in Graphic and Text Notation,” in *Sound and Score: Essays on Sound, Score and Notation*, ed. Paulo de Assis, William Brooks and Kathleen Coessens (Leuven: Leuven University Press, 2013), 130–42.

sign and sound.¹⁶ Such radical ambiguities in the material trace, our usual starting point for analysis, render the work ambiguous at a fundamentally ontological level.

INTRODUCING CAGE'S *SOLO FOR PIANO*

The tripartition will remain a point of reference as I now turn to pursue the implications of musical indeterminacy for music analysis in greater depth. To this end I will further consider John Cage's *Solo for Piano*, which represents a *tour de force* of forms of notation aimed at ensuring—to use Cage's oft-repeated term—"composition which is indeterminate with respect to its performance."¹⁷ Cage chose his words carefully. The piece was a successor to *Winter Music* (1957) for one to twenty pianos, in which, for the first time, Cage allowed the performer substantial freedom regarding musical realization. This contrasts with earlier pieces, such as *Music of Changes* (1951), in which he had used chance techniques as part of the compositional process to produce a score that nonetheless remained fixed in its form. In this respect, James Pritchett's clarification of Cage's distinction between chance and indeterminate composition is worth citing: "In Cage's terminology, 'chance' refers to the use of some sort of random procedure in the act of composition. [...] 'Indeterminacy', on the other hand, refers to the ability of a piece to be performed in substantially different ways."¹⁸ (The principle could be said, then, to migrate from the poietic to the esthetic domain.) Both conditions equally point to the influence of Zen Buddhism (mediated in part through the Japanese philosopher Daisetz Teitaro Suzuki, whose lectures at Columbia Cage claimed to have attended in the 1940s):¹⁹ they embody the intent to let go of egoic intention and of likes and dislikes, and to accept and enjoy the resulting sounds for what they are.

Solo for Piano in fact is made up of the piano part from Cage's *Concert for Piano and Orchestra* (1957–8), authorized by the composer for solo performance in its own right.²⁰ The solo piano score is by far the most extensive and complex element. It comprises sixty-three pages, each presenting one or more of eighty-four notational styles that apply across the

16 I will return to the matter of graphic scores below. For further examples of graphic notation, see John Cage, *Notations* (New York: Something Else Press, 1969), and Erhard Karkoschka, *Notation in New Music: A Critical Guide to Interpretation and Realisation*, trans. Ruth Koenig (Tonbridge: Universal Edition, 1972).

17 Cage, "Composition as Process: II. Indeterminacy," in *Silence*, 35 and *passim*.

18 James Pritchett, *The Music of John Cage* (Cambridge: Cambridge University Press, 1993), 108. Pritchett points out that some of Cage's works from the earlier 1950s had "open" elements, but these indeterminate features were "still not central to their conception" (*ibid.*, 109).

19 On some of the ambiguities surrounding Cage and Suzuki, see David W. Patterson, "Cage and Asia: History and Sources," in *The Cambridge Companion to John Cage*, ed. David Nicholls (Cambridge: Cambridge University Press, 2002), 53–55, doi:10.1017/CCOL9780521783484.004.

20 For further details, see Pritchett, *The Music of John Cage*, 112–24.

work. These are labeled A–Z, then AA–AZ, then BA–BZ, and finally CA–CF; instructions pertaining to each style are given by Cage in the prefatory pages of the score. Cage leaves the performer free to determine the length of the performance, how many pages to play (if any), which order to play them in, which events on the page to play, which order to play them in, and whether to play them in sequence or simultaneously. Much of the musical detail is also indeterminate: the different notational types promote different ways of making pitch, duration, dynamics, and timbre mutable.

As stated above, these conditions of indeterminacy have radical implications for the ontology of the work. Cage's score remains the constant behind the work's various performances, yet, as Philip Thomas points out, it may be difficult aurally to relate a performance to the score (in Nattiezian parlance, another form of dislocation between neutral and esthetic levels). For example, Thomas finds only a few places in Steffen Schleiermacher's CD recording that can be unambiguously related to any given page—such as track 4 as a rendition of Notation AU on page 38 of the score.²¹ Related to this, individual renditions of the piece may sound so different as to bring into question whether the work has any sonic identity unique to itself. Given that *Solo for Piano* incorporates some of the same notational and performance styles as *Winter Music*, it is possible to make a performance of the former sound more like the latter than another realization of its own text.

The title of Thomas's article, "Understanding Indeterminate Music through Performance," points to the fact that the performer's agency and status in indeterminate works also are radically transformed, and we would do well to keep this in mind in this account of the analytical implications of indeterminacy. One immediate response might be to correct the marginalization of the performer in Nattiez's semiological tripartition—a matter to which he makes only a token accommodation in *Music and Discourse*.²² Figure 2 represents my attempt at a revised model in respect of indeterminate works.²³

Here, in an initial set of conditions, Performer 1 first approaches the piece from an esthetic standpoint (box E) as the recipient or consumer of what the composer has created at the poietic level (Box P). The performer's agency (represented by the arrows) is initially directed to the score (which occupies the neutral level, N). But in order to realize his or her performance, the performer has to engage in a second flow of agency, switching to poietic mode (P₁), which leads to the generation of a further artifact at the neutral level (N₁): the piece in performance, whose evanescence can be objectified through sound

21 Philip Thomas, "Understanding Indeterminate Music through Performance: Cage's *Solo for Piano*," *Twentieth-Century Music* 10/1 (March 2013), 94 n. 8, doi:10.1017/S1478572212000424.

22 See Nattiez, *Music and Discourse*, 73. In this regard he is perhaps no more or less culpable than most other music analysts in reproducing an ideology of the work concept that places the composed artifact at the center of things.

23 Another appears in the critique of Nattiez in Anderson, "The Beginning of Happiness," 130–42.

recording (more on this matter presently). This realization forms the object of esthetic engagement by listeners (E_1). And with each performer's engagement this process is multiplied (Performers/Performances 2, 3 ...), as shown in the successive levels in Figure 2.

Figure 2: Multiple articulations of the tripartition in varied realizations of the indeterminate work

This revised schema allows us to draw some interim conclusions. Rather than modeling the dissolution of the work concept, the schema shows its ambiguation. The score (or trace), N , continues to be an invariant point of reference, underwriting the identity of the musical work; but that identity mutates under a necessary second level of compositional articulation, a second level of poesis, supplied by the performer, in order that the work may move from written to sonic form ($N \rightarrow P_1 \rightarrow N_1$).²⁴ Hence, stage P_1 involves the performer in the production of his or her own version of the score, without which the

²⁴ And of course also $N \rightarrow P_2 \rightarrow N_2$, etc.

realized performance (N₁) cannot take place. However, as already indicated, the material trace of a performance—material in that it takes the form of sonic excitations of the air—is evanescent unless supplemented by a further trace: a recording in some material form (such as a CD, sound file, etc.). Because the analysis of indeterminate pieces is likely to be reliant on the material invariance of their recorded performances, it will repay us to unpack the ramifications of this situation further.

In the first instance—as graphed in Figure 3a—we might show N₁ as split into two moments of material realization: N_{1a}, the event of live performance, and N_{1b}, its capture as a recording, attended to in either form by the listener at the esthetic stage (E₁). However, this still conceals the agency of a further party in the poetic sphere, the recording engineer (which might refer to an entire recording production team). Figure 3b renders this agency explicit, creating yet another articulation of the tripartition in which the members of the recording team, informed by their reception of the performance (E_{1a} → N_{1a}), intervene to craft the eventual recorded artifact (P_{1b} → N_{1b}), which trace becomes the basis for the audio listener's experience (E_{1b} → N_{1b}). (And of course this entire process can be applied to each instance of performer realization of the score shown in Figure 2.) This additional articulation, then, reveals the truth behind all recorded performances, one that is perhaps even more rarely the subject of analysis than the input of the performer, itself excised from the classic version of Nattiez's tripartition, which tends to idealize the key participants in the semiotic process as composer, work, and listener (see again Figure 1).

However, for all that a diagram such as Figure 3b shows a further level of indeterminacy in the process—indeterminate because the additional stratum is not specified by the score (N), and because it does not simply entail an unmediated encoding of the live performance (N₁)—it remains moot whether in a radically indeterminate work this third level of poesis is qualitatively similar to the first or second. The point is that in the second articulation of a work such as *Solo for Piano* the performer is engaging in a second moment of composition: he or she effectively becomes a co-composer. By contrast, in a conventional work, creative interventions by the performer (and, for that matter, the recording team) can be said to belong to the category of interpretation: in general, the performing artist is working with material that is already composed (and this situation is true for the sound engineer in both cases).²⁵ Hence, the situation represented by Figure 2, rather than Figure 3, is important for the present discussion, even though we should not forget that it is a

25 However, a contrasting case is suggested by the practice of the studio remix, in which it is the person working in the studio who takes on the role of co-composer. This empirical distinction from the role of the producer of a conventional sound recording would seem (despite the deconstructability of all conceptual binarisms) to vindicate the operation of two categories of esthesis—the one interpretive, the other compositional—as applied here to the agency of the performer in the case of 'conventional' and indeterminate works respectively.

Figure 3: Two ways of representing recorded performance in the tripartition

(a)

(b)

pragmatic abbreviation, for heuristic purposes, of the full picture (and even though in other circumstances it might be the situation of Figure 3 that would concern us).

Thus the situation of indeterminacy in works such as *Solo for Piano*, which causes the performer to become co-composer, effects a blurring of conventional divisions of labor. And this mutation has a further corollary, for the performer is also implicated as analyst. As Thomas states: “The practical ways in which performers must negotiate the openness of Cage’s notations, translating from hypothesis to sounding reality, and the creative questioning of the realization-making process, necessarily lead to a deep analytical engagement with the work.”²⁶ A role for analysis is thus far from ruled out by indeterminate music; indeed, Figure 2 shows that the range of fields where it may be applied is, if anything, multiplied. But the context and purposes in which it is practiced, the forms it takes, and the conclusions which it is able to draw may all differ from its application to conventionally notated works. Let us now pursue these possibilities in more detail.

²⁶ Thomas, “Understanding Indeterminate Music,” 92.

A TALE OF TWO AGGREGATES

What must a performer do to realize a work such as *Solo for Piano*? How do these activities overlap with that of formal music analysis? And just how wide-ranging are the possible different realizations of any one work? Rather than pursue these questions in a general way, I want to scrutinize just a couple of tiny details from Cage's score in the hope of disproportionately revealing answers.²⁷ My choice of objects for analysis was not a matter of chance. While many aspects of Cage's score could have infinite nuances of interpretation, some are more finite—though polyvalent enough—and hence able to give a more measurable sense of the range of possible variation. A case in point in *Solo for Piano* is Cage's notational style "B," taken from his earlier *Winter Music*, which involves sequences of vertical aggregates of differing densities. This notational style appears across several pages of *Solo for Piano*; Example 3 illustrates one instance, from page 35. The idiosyncratic deployment of note heads and ledger lines was probably arrived at by chance techniques: Pritchett describes how in the analogous materials of *Winter Music* Cage based his content on imperfections in the manuscript paper.²⁸ Cage provides instructions for the realization of the vertical aggregates in performance in the preface to the score of *Solo for Piano*:

An aggregate must be played as a single ictus. Where this is impossible, the unplayable notes shall be taken as harmonics prepared in advance. Harmonics may also be produced where they are not so required. Resonances, both of aggregates and individual notes of them, may be free in length. Overlappings, interpenetrations are also free. The single staff is provided with 2 clef signs. Where these differ, ambiguity obtains in the proportion indicated by the 2 numbers above the aggregate, the first of these applying to the clef sign above the staff. An inked in rectangle above a pair of notes indicates a chromatic cluster.²⁹

Thus the performer is required, among other things, to resolve the ambiguous deployment of clefs. To get a sense of how—and also of how performer and analyst might tread similar paths—let us examine two sample aggregates from this passage, identified as *x* and *y* in Example 3, and isolated for purposes of clarity in Figure 4a and 4b respectively. According to Cage's instructions, the pair of integers "2-2" floating above aggregate *x*, a four-note sonority, determines that two of the notes be read in treble clef and two in bass clef;

27 For a more extensive account, focusing on David Tudor's collaboration with Cage, see John Holzaepfel, "Cage and Tudor," in *The Cambridge Companion to John Cage*, ed. David Nicholls (Cambridge: Cambridge University Press, 2002), 169–85, doi:10.1017/CCOL9780521783484.011, and "David Tudor and the *Solo for Piano*," in *Writings through John Cage's Music, Poetry, and Art*, ed. David W. Bernstein and Christopher Hatch (Chicago: University of Chicago Press, 2001), 137–56, doi:10.7208/chicago/9780226044873.003.0007.

28 Pritchett, *The Music of John Cage*, 109–10.

29 John Cage, *Concert for Piano and Orchestra, Solo Piano* (New York: Henmar Press, 1960), Edition Peters No. 6705.

Example 3: John Cage, *Concert for Piano and Orchestra, Solo Piano*, 35, showing notation style B. Copyright 1960 by Henmar Press Inc., 373 Park Ave., New York 16, NY. Reproduced by kind permission of Peters Edition Limited, London on behalf of Henmar Press, Inc., New York.

analogously, “1-4” above aggregate *y* tells the performer to interpret one of the notes using the clef above the staff (here, bass clef) and four of the notes using the complementary clef below it (treble clef). Alongside each aggregate in Figure 4 I have numbered the constituent note heads in square brackets for purposes of cross-reference in the ensuing analysis. Next, all possible realizations of the two aggregates are shown and analyzed: in Figure 5 for aggregate *x*, and Figure 6 for aggregate *y*.³⁰ Let us now explore the content of these analyses.

Figure 4: Aggregates *x* and *y* (extracted from Example 3)

Jumping to Figure 6 (because aggregate *y* is the more straightforward to analyze in the first instance), the staff-notated portion shows two representations of each possible realization of aggregate *y* (I shall explain why presently); for reference purposes these are designated

30 Pritchett undertakes a similar exercise based on one of the aggregates in *Winter Music* (*The Music of John Cage*, 112, Example 4-2). However, he indicates more realizations than are technically permitted, ignoring the mapping of Cage's numbers above the aggregate onto the specific clefs above and below the staff—a condition that Cage stipulates no less for *Winter Music* than for *Solo for Piano*.

Figure 5: Realizations of aggregate *x*

(i)–(v) below the staff. Below this, the columns of integers cross-refer to the note heads so labeled in Figure 4b, showing which note heads are assigned to which clefs. Hence in the first realization, (i), of Figure 6, the single bass-clef pitch is to use note head 1 from Figure 4b, while the remaining four treble-clef pitches are to use note heads 2–5 (all shown in black note heads in Figure 6). This fulfills the requirement to represent one of the pitches of the aggregate in bass clef and four in treble clef; the resulting collection of pitches is shown in staff notation above. Subsequent columns of Figure 6 show how the remaining permutations are calculated: at (ii) the bass-clef pitch is note head 2 from Figure 4b, with treble clef applied to the remaining note heads; at (iii) it is note head 3, and so on.

In Figure 5, a similar procedure is followed for the aggregate *x* (from Figure 4a), only now the permutational procedure is slightly more complex. Following Cage’s indication “2-2,” each clef must take two notes from the original four-note aggregate. This leads to a

Figure 6: Realizations of aggregate y

greater number of permutations, labeled (i)–(vi) in Figure 5—even though the aggregate itself has fewer members than in Figure 6.

In each analysis, why show two versions of each permutation? The versions in solid note heads are *literal* notational realizations, preserving the ledger lines from the original score, no matter how idiosyncratic the resulting configuration. By contrast, the versions in open note heads are *practical* renotations, easier to read and perform. Where needed, individual note heads migrate to their complementary clefs (without actually changing pitch or register), and individual pitches may be re-spelled enharmonically (a step legitimated by the practice of David Tudor).³¹ These adjustments, then, are purely notational; the indicated pitches remain identical. Even so, the spacings of some aggregates render them unplayable; hence certain pitches are shown as theoretical harmonics of notes below them—one interpretation of Cage’s instruction. In these instances, arrows

31 See Holzaepfel, “David Tudor and the *Solo for Piano*,” 144.

connect fundamentals to overtones, and numbers in parentheses indicate the identity of the respective harmonic in the respective overtone series. (The actual audibility of such overtones remains moot, not least because when notation B manifests on some other pages of the score, the performer is also at liberty to play other material against it; additional performers may do the same if the *Solo* is being performed in the context of the *Concert for Piano and Orchestra*.)

In a move that goes beyond what is strictly the performer's responsibility, each possible realization of the aggregates is also subjected to a Forte-style set-theoretic analysis in subsequent levels of Figures 5 and 6. The set name, set class (prime form), and interval vector are indicated for each realization. The matrix below these annotations shows where sets are related by identity (shown with an asterisk), similarity (R relations), or inclusion (K and Kh relations).

What do the notational realizations combined with the set-class analysis tell us? The stories are somewhat different for each aggregate, suggesting that indeterminacy is farther-reaching in some cases than others.³² In the case of aggregate *x*, the picture is one of unrelatedness between the different possible realizations of the verticals. To some extent this can be judged empirically from the visual layout of the musical notation alone. Comparing realizations (i) and (vi) in Figure 5 immediately reveals strong dissimilarity with respect to pitch content, register, compass, and voicing. Coding more formally for pitch genus corroborates the dissimilarity. Realization (i) foregrounds post-tonal characteristics, where the interval vector shows entries for interval class 1 (semitones, major sevenths, and their octave compounds) and interval class 6 (tritones). Meanwhile, realization (vi) forms a diatonic cluster, manifesting interval classes 2 (whole tones) and 4 (in this case, major thirds).

Other realizations of the same aggregate, while less dramatically contrasted, remain relatively distinct from one another. One measure of difference is the fact that while all realizations have four pitches, some—numbers (v) and (vi) only have three pitch classes (that is, they manifest octave doublings of one pitch). Of the relationships described formally in the matrix beneath the staff notation, the most salient is that between realizations (ii) (set class [0,1,2,5]) and (iii) (set class [0,1,5,7]), which are Rp-related. In other words, they are maximally similar considered as pitch-class sets, sharing the common trichord [0,1,5]. While a similar relationship obtains between realizations (v) and (vi) (set classes [0,2,6] and [0,2,4]), the size of the set—only three members—precludes this connection from being considered as salient, a fact reinforced by the radically different spacings of the chords.

32 This point would seem to rehearse in miniature Thomas's analysis of a scale of indeterminacies operating across the

By contrast, aggregate y (Figure 6) shows somewhat less variation between its different possible realizations. This may be because the bass clef has only one note head assigned to it; hence, as its content permutes there remains strong commonality between the different versions of the treble-clef remainder. Indeed, three of the five realizations form the identical set class 4-19. Between these and the remaining realizations, however, there are no strong similarity or inclusion relations. Even here, then, not all realizations of an aggregate share invariant properties, and any potential connection with any other aggregate (the kind of thing a neutral-level approach such as set-class analysis would be well placed to pinpoint) becomes purely a matter of, well, chance, rather than syntactic significance.

IMPLICATIONS FOR ANALYSIS: A FANTASIA IN EIGHT EPISODES

I. Examining the possibilities of two chords hardly constitutes a fully fledged analysis of *Solo for Piano*, but, in a literally graphic way, the exercise points to some of the work's fundamental properties. In supplying knowledge of this kind, analysis functions in a familiar guise—except that, paradoxically, one of the things it reveals about the piece is how it can resist analysis. Given the evident difficulty of stabilizing the identity of even one tiny facet of the work, it would seem insurmountably difficult to say anything determinate about its musical language—unless by “language” one understands something without syntax or any apparent definable vocabulary. Analysis, which conventionally espouses metaphysical principles of unity (or pragmatic principles of invariance), here indicates the conditions of infinite possibility, where a multiplicity of particulars does not resolve into any larger structural manifold. ...

II. ... Unless that manifold be silence, into which any sonic possibility is welcomed. The spirit of 4'33"—the ultimate indeterminate piece—inhabits *Solo for Piano*, most literally in the license Cage gives performers to play nothing at all (while at the other extreme they may play everything),³³ and also in the content of page 15 of the score, which is blank. In these cases there is self-evidently nothing to analyze: we reach a vanishing point. There is simply *listening*. The discrete roles of composer, performer, audience member, and analyst and their associated behaviors collapse; poietic, neutral, and esthetic levels become one. Alternatively, everything is esthesic.

entirety of *Solo for Piano*, ranging from “mostly determined” to “radically indeterminate.” See Thomas, “Understanding Indeterminate Music,” 102–12.

33 See the very opening of Cage's prefatory instructions to the score.

III. Analysis traditionally involves a translation of a musical work into some alternative symbolic form, whether verbal or graphical, or some combination of these; it lives in a second-order world. But into what kind of analytical statement could a graphic such as notation AR (Example 2, discussed above) be translated? In envisaging Cage's instruction to "play in any way that is suggested by the drawing," one might imagine a translation process that proceeds directly into the performer's body. The motion inherent in the visual image suggests projections of mass across spaces (not points), first and foremost an analogue of physical action. The analyst here must think like a performer, in terms that are somatic and dynamic; formal particulars of content become secondary.

IV. Conversely, in coming to grips with some aspects of the notation, the performer must behave like an analyst, translating the work, as presented by the composer, into an alternative symbolic form. While some of the performer's sonic realizations could be achieved through improvising more or less directly from Cage's score (notation AR perhaps affords one such possibility), many of its notations preclude this. As we have seen in the case of notation B, ambiguities of cleffing; extreme, irrational uses of ledger lines; and unfeasible chord spacings together create significant impedance to on-the-spot realization: arriving at a final judgment about the execution of any notational feature may require several decisions. This presupposes activity outside the real time of the work in performance, activity involving some form of writing—both attributes of Western classical composition and analysis.

V. The significance of these activities is vouched for by the scale of the preparatory labor Cage requires from his performer/co-composer-analyst. As the above analysis has shown, deciphering and interpreting even just a couple of sonorities from one small element of the score requires time, commitment, and discipline (a favorite word of Cage's). Studies by John Holzaepfel and Isaac Schankler, which document some of the details of David Tudor's notebooks and notated realizations, show just how meticulously and extensively he prepared his performing versions of Cage's works, giving close attention to all necessary parameters including duration, down to the last second.³⁴ Thomas likewise discusses Tudor's creative input and provides examples from his own realization of *Solo for Piano* that evidence similar artistic commitment.³⁵ Implicit in these processes of co-creation is a notion of fidelity—which points, intriguingly, to a possible countervailing

34 See Holzaepfel, "David Tudor and the *Solo for Piano*," and "Cage and Tudor," which focuses on *Winter Music*. Isaac Schankler considers *Solo for Piano* in the context of a discussion of Tudor's 1992 recording of *Concert for Piano and Orchestra* in "Cage = 100: Tudor and the Performance Practice of *Concert for Piano and Orchestra*," *NewMusicBox* (2012), <http://www.newmusicbox.org/articles/cage-tudor-concert-for-piano-and-orchestra/> (accessed 14 March 2016).

35 Thomas, "Understanding Indeterminate Music"; notated examples from his own realizations can be found on pp. 99 (Example 1(b)), 107 (Example 7(b)), and 109 (Example 8(b)).

dynamic within the aesthetics and practice of indeterminacy. Not everything a performer might like to do is necessarily desirable, even if it is technically sanctioned by the score. Evidence for this comes from accounts of Cage's exasperation with performers who sought to sabotage performances of his works: "I'm tired of people who think that they could do whatever they want with my music!"³⁶ While Cage asserted that some of the most blatant transgressions—such as the inclusion of blues riffs and a tuba ostinato from *The Rite of Spring* in the 1958 premiere of *Concert for Piano and Orchestra*—were contradictory to his notations, the letter (or symbol) of his scores alone does not necessarily safeguard their authentic realization. As Schankler suggests, there is also a notion of the spirit of the work, and the need for an associated consciousness of a Cage performance practice (which would put Cage in the same position as any other conventional Western composer).³⁷ Yet, interestingly, even Tudor cuts an ambiguous figure here. Joe Panzner describes ways in which he departed from Cage's instructions in his realization of *Variations II*, even though the composer endorsed Tudor's performance "and hailed his attention to detail and inventiveness of interpretation."³⁸ Thomas characterizes Tudor's second realization of *Solo for Piano*—which admits only those notational styles of the score that allow for single, unconnected sonorities, as "an entirely surprising and disruptive one [...] paradoxically a subversion of the piece."³⁹ Tudor's "at times almost perverse approach" involves "wilfully stretching the parameters suggested by many of Cage's scores." Yet Thomas also argues that in present-day performances of Cage "notational limits should be tried and pushed against, and, *pace* Tudor, interpretations that opt complacently for a straightforward or face-value realization should be questioned."⁴⁰

VI. If one corollary of indeterminate scores is to transform the performer into a performer-composer, does this mean that analysis of music such as Cage's *Solo* can exist again—as performance analysis? This seems inevitable. Yet analysis here must contend with Cage's assertion that a recording "has no more value than a postcard; it provides a knowledge of something that happened, whereas the action [in performance] was non-knowledge of something that has not yet happened."⁴¹ Cage's caution, which alludes to the conditioning of consciousness by time, concerns what is lost when reflection after

36 Joe Panzner, "Crises of Authenticity," *Stylus*, 17 February 2003, http://www.stylusmagazine.com/articles/weekly_article/john-cage-crises-of-authenticity.htm (accessed 14 March 2016). Panzner cites Peter Gena, a student of Morton Feldman, as the source of this report of Cage's comment, also quoted in Schankler, "Cage = 100," and in Rob Haskins, *John Cage* (London: Reaktion, 2012), 119–20.

37 Schankler, "Cage = 100."

38 Panzner, "Crises of Authenticity."

39 Thomas, "Understanding Indeterminate Music," 94.

40 Ibid., 111.

41 Cage, "Indeterminacy," 39.

the event changes the music from a transient process into a concrete object. (Nattiez's neutral level in Cage's terms is evanescent—perhaps ideally void: silent or unconscious.) But analysis has always had to contend with the necessary reification of what it brings to consciousness, regardless of whether its object is compositionally determined or not. This does not necessarily invalidate its activity, as long as it remains conscious of the epistemic status of its claims—a consciousness that indeterminate works have the virtue of raising, just as analysis throws their ambiguous ontology into relief. Postcards too have their value.

VII. The analysis of indeterminate works in performance presupposes the activity of comparison. Along one axis, a comparison of different performers' realizations might suggest invariant qualities of a work or pinpoint what makes more or less stylistically appropriate realizations (the notion of fidelity again); in the same vein, analysis might determine a more or less authentic Cage sound through comparison of performances of a variety of works. Judy Lochhead takes some steps in the latter direction, offering the beginnings of an analysis of a Cage performance practice. She identifies the operation of a sound ideal within a community of performers in the 1950s and '60s who could be defined as "an authority for stylistic propriety" (her examples include Frances-Marie Uitti, Max Neuhaus, Tudor of course, and Cage himself).⁴² The parameters she selects for analysis are duration of performance, modes of opening and closing a performance, pacing of events, and types of musical idea. Lochhead's analysis is a collection of inventories—not particularly extensive, complex, or systematic, but rather indicative of a way of doing things. Her claim is to posit "an analytic access to the music through the sounds themselves, rather than through a score as in some sense a 'representation' of an ideal piece."⁴³ While this emphasis on the sonic is salutary, the score cannot be written out of the equation unless we want to do the same for the composer, of whose creative actions the score is the trace. Sometimes this may be what happens. Thomas questions whether the analyses by Holzaepfel and Pritchett of Tudor's versions of *Solo for Piano* may say more about Tudor than about Cage.⁴⁴ Perhaps, then, authorship becomes another ambiguity that the indeterminate work promotes. In analyzing a particular performer's realization of an indeterminate work, how do we know to what extent we are analyzing the product of the composer's agency, and to what extent that of the performer? This points to another axis of comparative analysis, in which the score (in the composer's case) and a sound recording (in the performer-composer's) are held up as alternative poles of knowledge—in

42 Judy Lochhead, "Performance Practice in the Indeterminate Works of John Cage," *Performance Practice Review* 7/2 (1994), 236 and 237–40, doi:10.5642/perfpr.199407.02.11.

43 Ibid., 241.

44 Thomas, "Understanding Indeterminate Music," 92.

Nattiezian terms, two traces of two moments of poiesis, affording a comparison between two articulations of the tripartition.

VIII. In this dialogue between the creative agency of composer and performer, the question of fidelity itself contains an ambiguity. Consider the options available to the performer in the case of notation style B. Performers may not need write out every possible realization, as in the formal analyses given in Figures 5 and 6, but these nonetheless illustrate the field of possibilities which they must formally or informally deduce, and from which they must determine what to play. In successive realizations of successive verticals the performer might promote some possibilities more than others: sonorities more widely or narrowly spaced, more or less resistant to being heard tonally, and so on. But on what basis are such decisions made? A performer who took every opportunity to privilege relatively diatonic sonorities in his or her realization of *Solo* might risk violating (in Lochhead's words) a sound ideal legitimized historically through performance practice. But more to the point would be the process through which such sounds were reached. Cage sought to free the performer, but not merely in order to exercise personal preference. He disapproved of "people who are not disciplined and who do not start [...] from zero (by zero I mean the absence of likes and dislikes)[,] who are not, in other words, changed individuals, but who remain people with particular likes and dislikes."⁴⁵ Tudor's decision to privilege sounds without connectivities, while being, in Thomas's words, "perverse" and "willful," was authorized by Cage because it conformed with his own predilection (or shall we call it preference?) for realizations that liberate "the sounds themselves" from the dictates of syntax. Tudor conformed to Cage's notion of Zen. So here is another corollary for analysis. The sounds and symbols with which the analyst gets to work are the outcome of a poietic position that is shaped at least as much aesthetically, philosophically, and spiritually as it is through the technical command of musical materials. Does this mean, then, that analysts, again like performers, must be party to yet another shift in the division of labor caused by indeterminacy—that the boundaries of music analysis must necessarily blur across those of philosophy and aesthetics?

THE TOTAL MUSICAL FACT REVISITED

The answer is probably "yes," and I would like to illustrate this with a final celebration of epistemological boundary-crossing that takes us back to the concept of "total music fact" in relation to the challenges posed by graphic notation. In his article "Hieroglyph, Gesture, Sign, Meaning," Paul Attinello considers the epistemological challenges posed

45 In Richard Kostelanetz, ed., *Conversing with Cage*, 2nd ed. (New York and London: Routledge, 2003), 72.

by the notational extremes in works by Bussotti. Referring to Bussotti's *Pièces de chair II* (dedicated to Cage), Attinello writes of the "visual allure of the score," and of how its "rhizomatic fusion of the linear and the holistic, the rational and surreal presents a distinctive problem in analysis and interpretation."⁴⁶ Reginald Smith Brindle is one such problematized commentator, troubled by composers who "obviously find it irresistible to turn a musical score into a work of art."⁴⁷ Smith Brindle does not intend this as a compliment. But Attinello challenges such a view: "What if the visual *is* the musical [...]" Invoking Nattiez's idea of "the total musical fact," he argues that

all of the activities, signs, and concepts that have been attached to music [...] must be considered as part of the musical universe, whatever distinctions or values are later applied. This suggests that attempts to define the musical versus the extramusical, whether considering movement, behavior, symbolism, narrative, or any possible kind of notation whether functional or not, is pointless—all of it *is*, indeed, music, and all of it *must* be seen as music.⁴⁸

As I will presently suggest, such a view might suppose a more radical reading of Nattiez than Nattiez himself intends. And Attinello's claims would certainly seem to challenge Ian Bent's and Anthony Pople's definition of music analysis, as presented in their *New Grove Dictionary* entry, where they characterize the discipline as motivated by a desire "to get to grips with something on its own terms, rather than in terms of other things"; analysis is an activity focused on "the music itself, rather than external factors."⁴⁹ But, as Attinello indicates, and as we have seen throughout the above discussion, indeterminate works question the very status of "the music itself." And if analysis runs up against fundamental questions of musical ontology, then this undermines a differential tactic which Bent and Pople further deploy to define analysis: its distinction from aesthetics.

The analyst, like the aesthete, is in part concerned with the nature of the musical work. [...] Where they differ is in the centres of gravity of their studies: the analyst focusses his attention on a musical structure (whether a chord, a phrase, a work, the output of composer or court etc.), and seeks to define its constituent elements and explain how they operate; but the aesthete focusses on the nature of music *per se* and its place among the arts, in life and reality.⁵⁰

⁴⁶ Paul Attinello, "Hieroglyph, Gesture, Sign, Meaning: Bussotti's *pièces de chair II*," in *Perspectives in Systematic Musicology*, ed. Roger Kendall and Roger Savage (Berkeley and Los Angeles: University of California Press, 2005), 219.

⁴⁷ Reginald Smith Brindle, *The New Music: The Avant-Garde since 1945*, 2nd ed. (Oxford: Oxford University Press, 1987), 87; quoted in Attinello, "Hieroglyph, Gesture, Sign, Meaning," 220.

⁴⁸ Attinello, "Hieroglyph, Gesture, Sign, Meaning," 221 and 222.

⁴⁹ Ian D. Bent and Anthony Pople, "Analysis," in *Grove Music Online*, Oxford Music Online (Oxford University Press), §2, accessed 17 March 2016, <http://www.oxfordmusiconline.com/subscriber/article/grove/music/41862pg1>.

⁵⁰ *Ibid.*, §1.

But, Attinello implies, in works like Bussotti's, analysts may themselves need to become aestheticians or theorists more generally—a trait borne out in Attinello's own praxis.⁵¹ And this is congruent with the way that, for Cage, composition shades over into philosophy.

CONCLUSIONS

It is clear from the above that one evident corollary of indeterminate works is that they effect a blurring of traditional divisions of labor within music and its discourses: between composer, performer, analyst, aesthetician, theorist, and listener. By forcing us to have regard for the “total musical fact,” such works suggest not that they are unanalyzable, but that we need to widen our concept of analysis in a manner commensurate with the ontological challenges posed by their open, indeterminate status.

But doesn't Nattiez say that *all* works, not just indeterminate ones, need to be considered in the light of “total musical fact”? Is there really anything new here? In *Music and Discourse* Nattiez seeks to refute Eco's claims regarding the ontological challenge that open-form works allegedly pose to the work concept. If we consider the *total* musical fact, Nattiez says, then the situation in open works is not an undermining of the work concept but simply a migration of the principle of ambiguity from the esthetic to the poietic level, attributable to the composer rather than the listener.⁵² The key question, then, is: Do the innovations of indeterminate music represent a difference of principle, or merely one of degree? A space is set up epistemologically between the more radical claims of Eco and the ultimately conservative ones of Nattiez, and also between the conservative tenor of Bent and Pople's definitions of analysis on the one hand, and Attinello's more deconstructive implications for the field on the other.

I am inclined to favor the more radical reading, on several grounds. To begin semiotically, Nattiez's critique of Eco is overly simplistic; furthermore, it incorrectly assumes that ambiguity, even in its “conventional” sense, obtains primarily at the esthetic level. As even a cursory analysis of *Prélude à l'après-midi d'un faune* has shown, ambiguity can be as strongly attributed to the immanent structure of the work as to the composer or listener; in short, it obtains across the entire tripartition. I have also argued that the situation of radically ambiguous (indeterminate) works assumes not so much a changed construal of the poietic level, but a second articulation of the entire tripartition, which takes account of the changed role of the performer in this new context—the requirement that he or

51 See Paul Attinello, “Signifying Chaos: A Semiotic Analysis of Sylvano Busotti's *Siciliano*,” *Repercussions* 1/2 (Fall 1992), 84–110.

52 Nattiez, *Music and Discourse*, 82–87.

she take a new and different share of the labor of composer and indeed analyst. It is certainly true that even in conventional classical performance situations the performer also engages creatively and analytically with the work (as John Rink has argued, performers “are continually engaged in a process of ‘analysis’”).⁵³ But the different situation here again involves a change in principle and not merely of degree—emblemized topographically by the horizontal dislocation of levels in Figure 2 (vector $E \rightarrow N \rightarrow P_1$). This represents a theoretical and empirical moment in which the performer must take time outside the real time of performance or practice to engage in intellectual ratiocination and, if necessary, to produce additional notated materials that differ in kind from those of the score.

Moreover, the situation for the analyst becomes commensurably more complex. He or she must also contend with the double articulation of the tripartition, not least with what goes on at the nexus between the performer and the work. Additionally, the usual epistemological assumptions of analysis can no longer necessarily be made—regarding, among other things, the ontological status of the work and the invariance of its contents, the principle that musical meaning inheres in syntax and relationality, that the immanent structure of the work (the neutral level) is the principal locus of analytical scrutiny.

And then there is this: Open-form works are a rebuke to our assumptions that meaning inheres in linear temporality. They would dissolve the Western alliance between succession and coherence—the hegemony of syntax and syllogism. Ferdinand de Saussure saw the dialectic between (linear) syntagmatic and (non-linear) associative connections between signs as the fundamental mechanism of language and a reflection of our psychological capacities.⁵⁴ He was right: every spoken sentence, every written text is the result of a tussle between our conscious efforts to put bits of language in a meaningful order and the unruly dynamics of an unconscious that would jump-cut between signs and ideas, across myriad synaptic connections. Daniel Dennett and other philosophers of consciousness insist that the sense we have of our selves as something continuous is illusory—a narrative we seem to have evolved in order to navigate a path through our world, but that in fact occludes a pandemonium of neural activity processing many parallel possibilities.⁵⁵ Such a fabrication of self, consciousness, and reality is perhaps a necessary condition for the apprehension of time as linear. But other apprehensions are possible, as

53 John Rink, review of Wallace Berry, *Musical Structure and Performance*, *Music Analysis* 9/3 (1990), 323, doi:10.2307/853982.

54 Ferdinand de Saussure, *Course in General Linguistics*, ed. Charles Bally and Albert Sechehaye, trans. Wade Baskin (New York: Philosophical Library, 1959), 122–34. For a discussion of how these principles might pertain musically (to compositionally determinate works), see David Clarke, “Language Games,” *The Musical Times* 1835 (January 1996), 5–10, doi:10.2307/1003378.

55 See Daniel Dennett, *Consciousness Explained* (London: Penguin, 1991), especially chapters 8 and 9. Dennett’s coining of the term “Joycean machine” to describe these processes is of obvious relevance to the present context.

philosophies and practices from cultures outside the West have long made clear. Cage turned to Zen Buddhism (at least as mediated by Suzuki) in his quest for an alternative order of consciousness and an alternative order of musical composition, with an alternative temporality through which to effect it. What might be expressed negatively as a denial of syntax, a repudiation of the notion of connection between sounds, was for him a positive openness to the possibility of grasping the connectedness of everything to everything else, once the desire to determine connection through an authorial ego had been released.

In other words, while the open or indeterminate work clearly is based on historical principles that it shares with its compositionally more determined forebears, we should nonetheless remain alert to how it parts company from them. We do no favors to the aesthetic motivation behind musical indeterminacy if we claim through our analyses—however construed—that everything is really business as usual. And as ever, there is a political dimension to the debate. Musical indeterminacy appeared at a historical moment in which possibilities for cultural and social change were in the air. If that moment has now passed and the composition of Western art music—in some way commensurately with a prevailing and deepening neoliberal polity—has returned to something altogether more conventional, we would do well not to reduce the experimental scores of Cage and others to a principle of sameness.

Abstract

Ambiguity, a quality inherent in many artworks, acquired a radical dimension in the indeterminate musical works of the post-1950 avant-garde. Such music challenges the ontological status of the work and consequently the activity of musical analysis in relation to it. One model for an epistemological exploration of these issues is the semiological tripartition of Jean-Jacques Nattiez, influenced by Jean Molino, together with its associated notion of the “total musical fact.”

Investigation of a work such as Cage’s *Solo for Piano* (1957–58) illustrates how indeterminate music fosters a redrawing of the conventional division of labor among composer, performer, and analyst. It also suggests that analysis might need to become not only more flexible and capacious regarding its own concept, but also open to a further blurring between itself and music aesthetics and theory—just as Cage’s output opened itself up to Zen philosophy.

While these altered conditions do not entail a total dislocation from those surrounding more “conventionally” ambiguous musical works (e.g., Debussy’s *Prélude à l’après-midi d’un faune*), they arguably do represent, *pace* Nattiez, a difference in principle as well as in degree. They are, we might say, radically ambiguous, and this needs to be reflected in the epistemological framework within which we consider them. To argue otherwise would be to fail to keep faith with what is radical about indeterminacy.

About the author

David Clarke is Professor of Music at Newcastle University. He is a music theorist with a wide range of research interests, encompassing analytical, philosophical, cultural, and critical approaches to music. With Eric Clarke he is the co-editor of and a contributor to *Music and Consciousness: Philosophical, Psychological, and Cultural Perspectives* (Oxford University Press, 2011). He has published widely on the composer Michael Tippett, including a monograph, *The Music and Thought of Michael Tippett: Modern Times and Metaphysics* (Cambridge University Press, 2001). He has also investigated issues around cultural pluralism, one aspect of which is his study of North Indian classical music, in both theory and practice.