Agency, Determinism,  
Focal Time Frames, and  
Processive Minimalist Music  

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In his 2004 essay “Continuous Time and Interrupted Time: Two-Timing in the Temporal Arts,” Peter Kivy argues that differences between how we experience time in music versus literature become apparent not from their continuities but from their interruptions. We tolerate interruptions in reading, whereas we do not tolerate them in musical listening. The reason, Kivy argues, is one of attitude toward what is being experienced: fictional stories have built-in contingency (a sequence of events determined as the story unfolds). Music, by contrast, is experienced as deterministic (a sequence of events determined in advance). Kivy argues that the differences arise partly because a person is often rehearing music, prompting determined expectations of what lies ahead; whereas with a work of literature, it is more likely a person is reading it for the first time. Kivy’s distinction is partly based on varying experiential habits and is thus not an absolute but a matter of degree.  

Nevertheless, note that this determinism is not just a matter of genre conventions or expectations, which can be manipulated. Anything that can be manipulated is not determined, so it must be explained differently, as I will do. Note also that this determinism is not just the quasi determinism of some events seeming to cause subsequent ones—a phenomenon prevalent in both literature and music—but rather the sense that the total sequence of events is determined in advance. It cannot be, however, that music is experienced generally
as totally deterministic, for this would make musical narrative impossible. Putting it differently: insofar as music is experienced as deterministic (in the sense of composed in advance), this is something musical narrativists ignore, suppress, or work around. Musical narrativity implicitly rejects the deterministic view. For instance, as Pasler writes, “musical narrative must . . . start with something which is incomplete and enticing so that the listener is interested in its future possibilities” (1989: 241). Lurking behind musical narrative is a simple premise: that which is inevitable is hardly worth mentioning in a narrative unless—and I’ll return to these caveats—it is caused by or causes something else that is not inevitable. Our narrative point of view about music seems to clash with the deterministic one asserted by Kivy.

Edward T. Cone (1977) explains how there can still be suspense in a rehearsal (rereading) of a musical work just as there can be with a detective story. Yet this does not quite address how twentieth- and twenty-first-century technologies have drastically expanded the tendency to reheat music, such that Kivy’s distinction seems to have more purchase than ever before. In the wake of a revolution in listening habits and compositional practices developed in the twentieth century, our musical narrative point of view cannot be taken for granted. This revolution arises partly from the advent of mechanical reproduction of sound. Arved Ashby (2010), inspired by Jacques Attali (1985), writes that composed music is a reliving, or experiencing, of an unreduced duration of time from the past, which has already “occurred” (lapsed). The listening experience is a “copy” of a previously elapsed duration of time. Thus, recorded music especially is distinctly temporal, compared to other forms of escapism, such as literature.

Since agency (volition, choice) seems the most distinctive trait that partitions time (past from future), music’s temporality problematizes agency. An original lapsing of time is partly contingent on agency, but the reliving of it cannot be contingent in any way if it is a copy. A duration of time copied from the past brings with it a paradox: on the one hand, a copy implies that every opportunity for choice (exercise of agency) in the original is duplicated with an opportunity for choice in the copy; on the other hand, a copy implies that exactly the same set of events in the original are necessarily duplicated in the copy: the two implications are mutually exclusive.

Yet, narrative interpretation of music may play a crucial role in negotiating this paradox because it promotes the fact that even when aware of how the compositional process determines the course of a piece of music, we nevertheless can experience its events as if they are being decided as we go.
That is narrative’s natural mode. By contrast, Kivy argues that with repeated hearings our focus moves toward anticipating what we know will happen next, which pushes the deterministic view into the foreground. But the paradox I just mentioned illustrates how this is not the case because the sense of agency apparent from an original duration of time is just as much part of that duration when copied as the events that occur in it. Thus, as long as the events in the original duration do not seem predetermined in the first place, they will not seem predetermined in the copy of that duration. This is one reason why narrative experience survives among the repeatable experiences of musical works afforded by the unprecedented modes of music’s mechanical reproduction in the twenty-first century.

The situation for musical narrative is more difficult when the events of the “original” duration seemed predetermined in the first place, as with music whose compositional modus operandi is strongly deterministic, arising from the same technologies that brought about changes of listening habits. With such music, narrative arises less obviously, so it provides an ideal context for exploring issues of narrativity. Specifically, the late twentieth-century surge of compositional approaches based on automated processes poses a significant challenge to musical narrativity because it hinders the listener from assigning agency to individual events within the unfolding of a musical work. Thus, approaches to narrative in twentieth-century music may differ significantly from those for common-practice repertoire.

Whether such music is narrative is not inherent but emerges from the interaction of the listener as interpreter (Almén 2003; Reyland 2007a, 2007b). Every narrative analysis depends on a critical metalanguage that arises from outside the sounds of the piece (Pearsall and Almén 2006). For Beethoven the critical metalanguage derives intertextually from normative practices of the surrounding repertoire; for less normative music, such as that of the twentieth century, a narrative cannot rely on an intertextually fueled conventional metalanguage and therefore must develop in a suitably particularized ad hoc fashion, which I demonstrate below, as I have with other repertoires (Mailman 2009, 2010a, 2010b).

The remainder of this essay considers the narrativity of processive minimalist music both as an instance of modernist developments in twentieth-century music and as an instance of the broader musical landscape to which the concept of narrativity applies. First, I distinguish between teleology and determinism, explaining how each relates to conventions of narrative and musical style. Then, I present diachronic decision trees as schematic models of
narrative, which, in terms of agency, distinguish between narrative in more conventional music and in twentieth-century processive music. From this I develop the concept of *narrative framing functions* and apply it to Alvin Lucier’s minimalist composition *Crossings* (1984). The last section suggests an interopus narrative interpretation of processive minimalist music as follows: contrary to dystopic visions of the oppressive role of computing machines, processively deterministic music exemplifies the empowerment of humans as creative agents, able to evoke new narrative contexts through the use of technology.

**TELEOLOGY, CONVENTION, AND DETERMINISM**

I mean *determinism* in the philosophical sense of *free will vs. determinism*. *Determinism* is beyond the control of *free will*. *Free will* is manifested as *agency*, which is present in inverse proportion to determinism. By *determinism* I do not mean the generic expectation of reaching a goal or being foiled from reaching it; but rather I mean something more severe and absolute. *Destiny*, by contrast, is narratively interesting insofar as it is less absolute than determinism. Destiny might or might not be fulfilled, which is why we care about it. Destiny may mean determinism or teleology, but the latter plays more of a role in narrative. Consider that destiny without agency is neither tragedy nor triumph; each requires agency for its narrative interest. This means that destiny in the strict sense of determinism seldom plays a role in narrative. Yet destiny in the sense of a goal, a teleology, often plays a role in narrative. What is sometimes called “destiny” in discourse about narrative is actually teleology. *Teleology* is not determinism. In fact, narrative involves at least some sort of indeterminacy to create suspense.¹ Suspense in a narrative is made possible by the combination of teleology and indeterminism in the form of agency.

In a narrative, various aspects of stylistic convention and normative practice serve either deterministically or teleologically. In musical narrative, it is the stylistic conventions and normative practices that are *at play* in a particular situation that serve teleologically, earning significant discursive attention. By contrast, those conventions and practices that serve deterministically in a particular narrative are the less alluring regulative features of stylistic decorum (such as tonal and contrapuntal practices) that do their job backstage and thus go unmentioned.

Sonata form is a good example of how stylistic convention and normative practice can serve teleologically. The restoration of originally off-
tonic thematic material to the tonic key serves as a deterministic feature in a sonata form, but it is more interesting narratively to treat it as a teleological feature, which is what is usually done, so that a sonata movement gains dramatic charge. Charles Rosen (1980) promoted this narrative-dramatic characterization of sonata form, which finds its more recent incarnation in the theory of James Hepokoski and Warren Darcy, who assert that “the broad trajectory of the sonata may be understood as an act of tonic-realization” (2006: 232). My point is that you cannot have it both ways; tonic attainment cannot be considered an act with narrative charge and at the same time be considered determined; to have narrative charge, it must have the possibility of being otherwise; it must be a goal whose fulfillment is within reach through the power of agency but that is not assured in advance.

Usually, the tonal-oriented narrative of a sonata is one of triumph, but it can be otherwise. An example, which parallels and amplifies one of the great mythic-tragic agential blunders is what Stravinsky called the “nearly sonata Allegro” of the pas de deux in his ballet Orpheus. The moment is during Orpheus and Eurydice’s attempted journey to the surface, which begins as a sonata-allegro form. During this, an abrupt silence commences when “Orpheus tears the bandage from his eyes and Eurydice falls dead”; the silence leaves the sonata form hanging in the dominant rather than returning to the tonic.² Of course, whether or not Eurydice’s second death is destiny (fate) depends on how one interprets the legend, but its tragedy requires the possibility that the goal might have been achieved if only Orpheus had kept his nerve. Stravinsky’s musical-dramatic strategy depends on the teleological (not deterministic) interpretation of sonata form, where the goal of the transgressive protagonist is mapped to the goal of tonic realization. An inverse situation can obtain when convention represents the will of established order rather than that of the transgressive protagonist, who bears a conflicting teleology. Here tragedy emerges from the failure to surmount convention, as shown in Robert Hatten’s (1994) analysis of the tragic expressive genre of the slow movement of Beethoven’s “Hammerklavier” Sonata. Its tragedy requires that the convention in question is not determined but could be surmounted through the power of agency. In this case, the protagonist’s agency strives heavenward, away from convention’s gravitational pull, only to be dragged back down into willing surrender. Again in this situation, convention acts teleologically (as the will of the established order) rather than deterministically. Such teleological uses of musical convention can act in both tragic and triumphal trajectories within a narrative. In the next section, I provide a schematic way to model tragic failure
and triumphal fulfillment as different trajectories within a partially deterministic context.

**A Schematic Model Addressing Issues of Narrativity**

*For All Music Including That since 1900*

What might help narrativists navigate the waters of postconventional music since 1900 is a schematic model of how narrative operates in conventional and unconventional contexts. These include the more deterministic musics of the twentieth century, such as processive minimalism and algorithmic composition, and less deterministic free-atonal and improvised music. In addition, the model addresses more conventional situations in music as well as the contexts of the real world in which most written narratives occur. Conventionally, narrative depends on some notion of contingency (what might or might not happen). The appropriate model, then, is based on Bergson’s (1889) theory of time, whereby “free action” occurs in the time that passes, which can be represented as a “fork in the road” or, as I depict it, a *diachronic decision tree*.

The decision tree model for musical narrative is shown in Example 6.1. It also models the physical and social actions of everyday life, such that musical narratives compatible with the model correlate to narratives of everyday life, that is, to the real world. In the real world, a descriptive stream (a *Dimension of Freedom*, the vertical axis in the diagram) might be what door to open, whom to invite to dinner, what joke to tell, and so on. In music, it might be harmony, voicing, key, texture, topic, phrase type, and so on. The nodes in the tree are decision points, representing a state (on the vertical axis) at a point in time (from left to right) at which a choice can be made, leading to branches extending to other nodes. Each slanted line between nodes is a short-term deterministic process. The background represents what cannot happen in the musical work; at any point in time, all states that do not have nodes are states that cannot occur at that time. Thus the background represents all those matters of the musical work we regard as precluded once the piece begins. (An eighteenth-century piano sonata in C major cannot end on an F♯ chord played by a trombone choir, just as Juliet cannot send Romeo an instant text message; these actions are precluded by stylistic context.) This off-limits area indirectly determines what is possible in the narrative: it is the *deterministic context* of the work.

A narrative may reference multiple agents. The narrative perspective depicted in the diachronic decision tree model collapses onto one plane the decision points of all the
EXAMPLE 6.1. Diachronic decision tree representation of narrativity.

agents (each of which has its own subset of decision points). Likewise, each state is global, encompassing the substates of all agents (and nonagential entities).

In the diachronic decision tree model, *cause* is expressed by the fact that each branching decision partly determines the future by setting out what options are open; it *causes* the next set of possibilities by precluding some events from happening. The idea of *plotting*—”a sense of direction, a sense of laying out a certain path which the reader can follow” (Meelberg 2006: 147)—is represented literally by the paths that can be traversed diachronically on the tree.

Annotations on the model depict various teleologies, and from these we determine the archetypical narrative trajectories of triumph (comedy and romance) and defeat (tragedy and irony/satire). In a victorious trajectory, the outcome is the goal state of the protagonist; in a trajectory of defeat, the outcome differs from the protagonist’s goal and is not even within the range of acceptable outcomes for the protagonist, who is worse off than at the beginning of the narrative. Example 6.2 depicts narrative trajectories of victory and defeat on diachronic decision trees. Example 6.2a shows the outcome as the protagonist’s goal state. Various scenarios can trigger such a trajectory, but in this example notice from the brackets along the right margin that the range of states acceptable to the protagonist and those acceptable to the antagonist can overlap. What distinguishes comedy from romance is whether the protagonist is the transgressor or the representative of the established order. Either way, a
Example of a Trajectory of Victory

Comedy, if protagonist = transgressor
Romance, if protagonist = established order

Example of a Trajectory of Defeat

Tragedy, if protagonist = transgressor
Irony/Satire, if protagonist = established order

EXAMPLE 6.2. Diachronic decision trees showing narrative trajectories, which reflect goal states, actual outcomes, and acceptable ranges.
narrative of victory can begin with a state that is acceptable to the antagonist but not the protagonist and end in a state that is satisfactory to all. Trajectories of defeat work in a quite different way, which illustrates the distinction between teleology and determinism. As Example 6.2b shows, the outcome can differ dramatically from the goal state. Tragedies, for instance, often begin in a state that is marginally acceptable to both the antagonist and protagonist, whose ambition drives toward a higher goal state; the goal-directed decisions (actions) of the protagonist lead instead to an outcome that is unfortunately not even within the range of acceptable states, neither for the protagonist nor even the antagonist. It remains to be seen to what extent these tendencies, which occur in literature, also occur in musical narrative, or whether music could even articulate them.

A case of seeming correspondence between literature (Goethe’s *Wilhelm Meister*) and music (Beethoven’s “Hammerklavier,” movt. 3) is what Hatten shows as the expressive genre of “tragic-to-transcendent” through abnegation (a transcendent inner state achieved by spiritual acceptance of a tragic situation) (1994: 1–28, 281–86). In two ways the proposed model could account for this expressive genre. One possibility is that it is a tragic narrative trajectory in which, during the course of the narrative, the range of acceptable states is expanded to include the once tragic outcome, even though it was not previously acceptable. Alternatively, the outcome, though not the original goal, falls within the original range of acceptable states, in which case the ultimate spiritual acceptance is toward the status quo, which the protagonist fails to exceed.

**Focal Time Frames and Narrative Framing Functions**

Although agency is important to narrative, the assertions of agency most important to a narrative need not occur within the time frame that the narrative focuses on. Consider biblical narratives like that of Noah’s ark. The assertions of agency within its focal time frame (God’s decision to cleanse the world and Noah obeying God’s edict to build the ark) subordinate themselves to future assertions of agency occurring in the postflood world. Such biblical stories serve as prefacing narratives, stories focusing on time frames that precede the assertions of agency that fuel their narrative power. Several instances of modernist literature focus on time frames after death, among them Nabokov’s novella *The Eye* (1930), Sartre’s play *No Exit* (1944), Carter’s opera *What Next?* (1997), and, with a time frame following the protagonist’s probable murder of
her lover, Schoenberg’s monodrama *Erwartung* (1909). All these are *consequential narratives*, in that their time frames follow the assertions of agency that fuel their narrative power.

The role of prevalent iterative processes in common-practice music suggests what narrative function similar processes evoke in other repertoires, such as those after 1900. Often they serve a prefacing or consequential function. The introductions to Beethoven’s Ninth Symphony, Wagner’s *Rheingold*, and Ferruccio Busoni’s *Doktor Faustus* project their dynamic forms processively as gradual surges of collective energy. In the Prelude to *Das Rheingold*, the inevitable process of the flowing river (depicted as a gradual increase in pitch range, rate of repetition, number of *ostinato* layers, orchestral thickness, and proportion of upward motion) prefaces Wagner’s entire *Ring* tetralogy, full of momentous decisions leading to both triumphant and ultimately tragic outcomes. Its narrative traction increases from the connections between its main motive, the nature motif, and that of *Erda* (mother earth), the Rainbow (which ends the opera), and the Norns (who weave time). As Darcy puts it, the processive *Rheingold* Prelude “serves as a metaphor for the creation of the world and depicts the gradual evolution of impersonal natural forces into human consciousness” (1993: 86).

When such *CollectiveEnergy* fluctuates in a monotonically increasing trajectory, it parallels the “rising crescendo pattern typical of *Gagaku* compositions, which proceed from slow to fast, by the *Jo-ha-kyu* principle—a cumulative increase in music and martial arts; rising speed, volume and inflection. . . . [S]teadily [rising] *CollectiveEnergy* has a rhetorical effect that builds interest in what is to follow (a symphony, an opera, or just an inevitable climax)” (Mailman 2010b: 501). In music, the progress of iterative processes seems inevitable (deterministic) such that they effectively lead to, from, or between junctures of volition, points at which choices are made, agency asserted. The deterministic nature of the processes contrasts with the freedom before or after them.

What can serve as preface can also serve as consequence. The title of Beethoven’s Piano Sonata op. 81a, “Das Lebewohl” (The farewell), evokes narrative. Like the introductions and preludes just discussed, the coda of Beethoven’s sonata (movt. 1) forges dynamic form by applying an iterative process to repetition. Its horn call motive $\hat{3}-\hat{2}-\hat{1}$ over $\hat{1}-\hat{5}-\hat{1}$ in the upper voices echoes slightly later in the lower voices. As Example 6.3 shows, the following process begins at m. 197. At first (mm. 197–213) the lower voice echo is offset from the upper voice by four measures, then (mm. 223-29) by two measures, then (mm. 227-38) by one measure, then (mm. 239-41) by half a measure. The

EchoRate serves as the primary vessel of form for the coda, which is heard as an iterative process of acceleration. The notion of EchoRate casts allusions to issues of motion and position in physical space, especially when suggesting a portable outdoor instrument such as a horn, and especially in a narrative context that suggests departure. The steadily surging EchoRate of the horn call motive
suggests the acceleration of a departing horse or carriage. Whatever decisions there were about leaving during the sonata movement are over by the time we reach the coda; departure is now inevitable but follows as a consequence of earlier decisions, before the time frame of the coda. The accelerating *EchoRate* of the farewell horn call in the coda evokes the inevitability that follows as a consequence of prior decisions from (or before) the main part of the movement.

It might be argued that such narrative allusion, from the time frame of a deterministic process backward or forward to a decision-filled time frame, requires that the two time frames be literally connected within the same work. Actually, there is no such requirement, if you consider, for instance, Reger’s half-hour long *Symphonic Prologue to a Tragedy*, pp. 108 (1908), a work unconnected to any specific tragical narrative, though its narrative function is quite clear from its title.Granted, Reger’s work is not processive like the preludes and codas just discussed. But the point is that a narrative serving a prefacing or consequential function need not include junctures of volition within its own time frame because it can draw its agential fuel from literal or imagined events leading to or from it. Such temporal elasticity of agency is a distinctive innovation of twentieth-century music and literature, such as the cited works of Sartre, Nabokov, Carter, Schoenberg, and Reger.
Where authorship cannot be assigned to events within the time frame of the piece of music, junctures of volition have to be located outside, before its process starts (or after it ends). Example 6.4 shows a corresponding diachronic decision tree; the states in the descriptive stream could be degrees of offset distortion (heard in Reich’s music) or the pitch of a pure sine wave oscillator (heard in Lucier’s). There are no nodes in the graph because within its time frame there are no junctures at which an event is volitional. Once the process starts, every event is determined. Positing junctures of volition outside a work’s time frame is an imaginative act of the listener-interpreter based on the facts of the music and facets external to it, as occurs—albeit differently—when narratives of Beethoven or Chopin evoke theories of topoi, *Formenlehre*, phrasing, or chord grammar, for instance.

**LUCIER’S CROSSINGS (1984): A VENETIAN BLINDS NARRATIVE**

The long-range form of Alvin Lucier’s *Crossings* (1984) is especially clear; it arises processively, in this case from a *glissando* of a pure sine tone that slowly (over sixteen minutes) ascends from infrasonic to ultrasonic. A discrete process combines with this *glissando*, creating a series of short-range continuous processes. A divided orchestra alternates in playing the consecutive pitches of a rising chromatic scale that interacts with the *glissando*. One ensemble initiates and sustains a pitch just higher than that of the *glissando* such that their mutual dissonance creates beats; as the *glissando* rises, the speed of the beats slows;
when it reaches a unison with the instruments, the beats momentarily cease; as the glissando ascends above the pitch of the instruments, the beats gradually accelerate. Eventually, the other ensemble enters and sustains a pitch a semitone higher, starting this short-range process again (the first ensemble stops its pitch before the glissando reaches the pitch of the second ensemble).

A representative fragment of Lucier’s Crossings appears in Example 6.5, a diagram that encapsulates its dynamic form arising through its processes. The diagonal line depicts the sine wave glissando. The horizontal lines depict the sustained pitches of the orchestra. The darkness of the shading corresponds to the speed of beats; the shading fades as each horizontal line approaches the rising diagonal and then darkens as the rising diagonal surpasses it. This fading-then-darkening process represents the short-range processes of decreasing-then-increasing beat speed that is repeated over and over while the glissando slowly rises to create the long-range form of the work. Thus a narration is depicted visually.

The transformational long-range process of Lucier’s Crossings might appear to be a vehicle for narrative transvaluation, James Liszka’s (1989) concept of a cultural hierarchy that shifts over time, cited by Byron Almén (2008) as a basis for reading narrative archetypes. For instance, Crossings could be like the triumph of the anthropomorphized “little engine that could.” Yet, to gain narrative traction, transvaluation would require agential action denied by the extreme processive nature of Lucier’s Crossings. Its engine is pure machine, without will.

At first hearing, Crossings evokes the revving of an airplane engine or perhaps something foreboding: ominous sirens or a nuclear explosion in slow motion. On their own, these are not narratives, and they reflect neither the short-range nor long-range formal trajectory of the work. Rather, the short-range and long-range aural effects suggest deterministic natural processes, perhaps as experienced slowly over time by a person able to make choices, or exercise volition, either prior to or after the process. In other words, as is the case for all processive minimalist music, the unfolding of each process is narratively restrictive; it suggests a deterministic process exclusive of human agency. For the sake of narrative, then, such agency is most plausibly relegated to points outside (before or after) the duration of the musical processes.

The combination of continuous (glissando) and discrete (chromatic scale) processes experienced both as one long-range process and as a series of short-range processes (beat acceleration and deceleration) is difficult to identify
in our perceptual experience, and still less obviously relatable to human affairs we’d find narratively interesting. Yet an appropriate scenario does come to mind: the morning sunrise as experienced through venetian blinds. Imagine our protagonist in bed with a headboard beneath an east-facing window. As the sun rises, a ray of its light peeks through the lowest pair of blinds, sweeping vertically across the protagonist’s eyes. As it sweeps, the direct light on the eyes gets clearer and then less clear, as the sun’s light passes increasingly and then decreasingly through the space between the pair of blinds. This process repeats over and over again as the sun rises, pushing its light through the gaps of successively higher pairs of blinds. Gradually, too, the overall ambient light of the room increases.

This is a narrative account, but not of the processes in isolation, for which there is a persuasive causal account, one that is entirely synoptic (nonnarrative): the earth rotates such that the sun appears to rise when viewed from the earth’s surface, and the venetian blinds systematically filter the sun’s light as it appears to rise. The rising-sun-seen-through-venetian-blinds processes are analogs to the psychoacoustic processes of Lucier’s piece, which also have a syntoptic causal account: the sine wave oscillator is programmed in advance to keep rising automatically. By contrast, the narrative account promotes the point of view of an agential observer experiencing deterministic processes as they elapse in time. The rising-sun-seen-through-venetian-blinds analogy suggests a context whereby junctures of volition may relate to deterministic processes of nature as observed by an agent.

Therein lies the narrative interest. It emerges from the interaction between deterministic processes and the undetermined choices we make before, after, or in the midst of them—think of Faust dreading the toll of midnight. We may imagine our protagonist in bed being awakened slowly by the rays of the sun through the venetian blinds on the morning of his execution, his last experience of a sunrise, after having made some inconvenient choices in the past. Or, more optimistically, it is the morning of an Olympic figure-skating competition or chess championship match. While listening to Lucier’s Crossings, we imagine our protagonist gradually waking, then lying in bed, anticipating the events of the big day, the decisions to be confronted, the crucial choices to be made; this imagined context occurs while we experience the musical processes signaling, through the inevitable elapsing of a natural process, the ever approaching events—all of which is rich with narrative potential because the possibility of choice, the exercise of volition, carries such narrative resonance. Although deterministic process music lacks narrative interest when
considered purely in isolation, through its role as preface to, consequence of, or transition between junctures of volition, it is infused with narrative interest similar to that of the deterministic processes in everyday life. Though it is more particularized and ad hoc, as appropriate to the idiosyncratic nature of much postconventional music since 1900, the discourse that creates such infusion is no more invasive than that which relies on an intertextual apparatus of terminologies and categories appropriate for Western art music of the common practice.

**TECHNOLOGY, AGENCY, AND OUR RELATION TO MACHINES AND NARRATIVE**

It is tempting to read the extreme determinism of some minimalist processive music as a sign or expression of a fatalistic view of humans as machines controlled by larger forces. This comes with the tendency in some humanistic discourse to see machines as dehumanizing or antihuman. Zaide Smith’s (2010) reactionary review of the film *The Social Network* in the *New York Review of Books* is a recent example that exaggerates the legitimate anxieties expressed by twentieth-century dystopic fiction, such as Aldous Huxley’s *Brave New World*, George Orwell’s *1984*, and Arthur C. Clark’s *2001: A Space Odyssey*. I hope it is possible to mind the warnings of such dystopic fiction while acknowledging the fact that computing machines are not solely the vehicles of corporate or government exploitation or control over people; nor do they necessarily reflect conformity or fatalistic defeat of humans to larger evolutionary forces.

The dystopic interpretation of processive music unnecessarily denarrativizes the listening experience of such works. Moreover, it fails to exploit the opportunities for the new kinds of narrative experiences that such music offers. Above, I discussed how processes in music often depict narratively significant natural forces or physical processes (such as the flow of a river or the motion of a horse and carriage) which lead to, follow from, or transition between one or more junctures of volition. For this reason, the initiation of a process is a significant exercise of agency. The creation of a process is even more significant. The use of artificial means (such as music) to depict natural processes in a narrative is an assertion of creative will, and the means by which it is achieved may be a triumph of human ingenuity taming natural materials and forces. The creation of such processes can take on a life of its own, independent of any specific narrative. And here is where the real ontological adventurousness begins. Now the composer ventures beyond the kinds of processes nature creates on its own and forges new processes that may allude to familiar natural processes in quite unfamiliar ways, thus accessing narrative possibilities
unavailable before. These may reveal new aspects of human perception of, and interaction with, nature. In this way, certain uses of technology (such as minimalist and algorithmic processive musical composition) help people assert an Enlightenment idea that humans are separate from nature and masters of their own destiny. Thus technology serves as a vehicle for the expressive ontological adventurousness of much modernist (and postmodernist) music, an adventurousness that compensates for the processive determinism of some of this repertoire. In addition to the intra-opus narrative function of deterministic processes (evoking possible junctures of volition situated just outside their time frames), they also have an inter-opus narrative function, which is that they emerge as an artifact of the ontological adventurousness afforded by technology, which in turn enriches the evocative potential of intra-opus narratives.

**Conclusion**

Narratives of processive minimalist music are feasible because deterministic processes play significant roles in verbal narratives and overtly narrative musical works by preceding, following, or connecting assertions of agency. The crucial difference is that since processive minimalist compositions often lack junctures of volition within their time frames and also lack stylistic conventions, the narrative interpretation of these works requires more ad hoc imaginative play, which cannot rely on stable symbolism (or semiosis) the way more conventional music can. It is hoped that such ad hoc imaginative play may enrich the narrative interpretative possibilities of more conventional music as well as enhance the aesthetic appreciation of processive minimalist music by infusing new narrative possibilities into the listening experience.

**Notes**

1. Narrative involves suspense even in its bare essence. If, as Hayden White (1980) declares, narrative translates knowing into telling, then at any given point before the end of a narrative, some of what is known has not yet been told: in this way narrative is inherently suspenseful.

2. As Maureen Carr explains: “Stravinsky’s tireless efforts to find the most suitable way of creating the musical setting for the ‘pas de deux’ show the care with which he was crystallizing his linear style for this scene. His own interpretation of Sonata-Allegro form evolved from the musical materials he chose and his effort to unite the musical argument with the story line. He had to allow for the death of Eurydice. As Orpheus and Eurydice began their journey
there was no hint of the imminent dangers that would surface” (2002: 264).

3. The vertical axis corresponds to different states in this dimension; no ordering or ranking is implied. This hypothetical decision tree shows only one dimension of freedom to be explored in a narrative, which may jump between multiple descriptive streams, describing physical actions, social actions, and so on. Each descriptive stream corresponds to a Dimension of Freedom of an agent, represented by its own decision tree.

4. Narratives assume such a decision tree (rather, a set of such trees, each corresponding to a descriptive stream exploited in the narrative) in that the tree models the sense of agency (freedom to act) to which we are drawn.

5. It is impossible to articulate this fully, since it includes everything we think of as the conventions of form, rhythm, harmony, counterpoint, and so on, whose theorizing continues. Nevertheless, every narrativist of common-practice repertoire has some idea of what the conventions are and are not; knowing these conventions is a basic conceit of narrative practice.

6. There are exceptions, such as in the quasi-heroic Magic Flute, where the antagonist, the Queen of the Night, is banished.

7. Reger’s stand-alone tragic prologue was not an isolated instance in turn-of-the-century Germany, as it follows Max Schillings’s Symphonic Prologue to King Oedipus, op. 11 (1900). We could interpret Messiaen’s Quartet for the End of Time (1941) as a consequential narrative, occurring in a postagential time frame; it happens to be full of deterministic processes such as isorhythm, although they are static, reflecting the title of the work.

8. This idea relates to an extended mind thesis articulated by George Theiner: “We engineer workspaces so that frequent tasks can be completed more rapidly and reliably” (2010: 20). This allows composers, for instance, to experiment in more daring ways. As Roger Reynolds explains: “Speed is not just a matter of convenience. It is the difference between guesswork—I’ll try this and hope I’m right—and interactive work in which constant adjustments are possible as one seeks a particular result” (quoted in Mailman 2004).

WORKS CITED

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