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Author(s): Ed Sarath

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A NEW LOOK AT IMPROVISATION

Ed Sarath

While conventional music analysis has been largely concerned with composed-notated music, very little investigation has been made in the area of improvisation. This disparity is likely due to the challenges in studying an extemporaneous process compared to the accessibility of a finished score. Yet the very spontaneity which renders improvisation an elusive analytical topic may yield unique expressive and aesthetic principles which spawn new angles of musical inquiry. In this article, I shall consider improvisation from the standpoint of temporal perception in seeking to locate such principles.

My central premise is that the improviser experiences time in an inner-directed, or “vertical” manner, where the present is heightened and the past and future are perceptually subordinated.¹ I contrast inner-directed conception with the “expanding” temporality of the composer, where temporal projections may be conceived from any moment in a work to past and future time coordinates. I challenge the common notion that improvisation is an instantaneous or accelerated version of the composition process,² proposing instead that the two processes differ in their contrasting temporal directionalities. This is not to necessarily rule out all possible points where improvisation and composition might intersect, but to identify fundamental distinctions in the directionality of temporal

conception—rather than in the speed at which the respective processes are undertaken—as the criteria by which differentiations between large classes of improvising and composing activity may be made. In revealing the two processes to be driven by unique mechanisms and expressive goals, a new analytical and aesthetic framework emerges for improvised music.

Some mention of the challenges inherent in this discussion is in order. Aside from the difficulties in capturing a creative process in prose, invention-based analysis departs from the prevailing concerns in theoretical circles with listener perception of musical structure. Thus, given the dearth of theoretical models for creating music, I have redirected ideas originally intended to explicate listener experience—aspects of Narmour's (1979, 1990) and Meyer's (1967, 1973) implication-realization theory, Kramer's (1988) temporal nonlinearity, and Clifton's (1983) work in phenomenology—toward the realm of the creating artist. I hope that my somewhat unusual appropriation of these ideas will not distract readers from the purpose at hand, which is not to comment on existing theoretical literature, but rather to seek ways of illuminating the improviser's experience.

Moreover, I diverge perhaps even further from convention in exploring the relationship of consciousness to the creative process. In particular, the notion that the creating artist invokes a heightened or transcendent awareness state, or to use Maslow's (1971) terminology, "peak experience," may suggest mystical leanings which, to some, dispel any hopes for a systematic inquiry. I hope that my attempts at bridging such considerations with more mainstream aspects of analytical thought will invite an openness from skeptics. Transformations in consciousness are commonly cited by improvisers, and have been studied by psychologists, and even mapped neurologically. Furthermore, in light of the inherent proximity of temporality and consciousness, it is difficult to imagine a comprehensive look at the improvisation process which does not at least touch upon these connections.

I. Temporal directionality in improvisation and composition processes

I will begin by clarifying some terminology and outlining general similarities and differences between improvisation and composition. By "composition," I am referring to the discontinuous process of creation and iteration (usually through notation) of musical ideas. In other words, the composer generates materials in one time frame and encodes them in a work in another. This is not to say that these phases of the composing process are necessarily discrete, and that creation ceases while notation or some form of iteration or reflection takes place, but rather that a key char-

acteristic of composition is its multi-layered temporality. The composer enters the “timescape” of a work, and yet may also step back to isolate, reflect upon, and possibly revise any given moment, all toward fashioning a structure for performance at a time other than that at which it is created. Within this highly generalized definition, a wide array of approaches to composing may be found, ranging from Beethoven’s extensive reworking of materials, to Schubert’s more rapid style, and on through recent methods involving aleatoric or indeterminate strategies.³ While various approaches to composition may appear to have an improvisational quality, the discontinuity of the process will be seen as an important temporality-defining factor when contrasting composition with improvisation.

By “improvisation” I mean the spontaneous creation and performance of musical materials in a real-time format, where the reworking of ideas is not possible. Although improvisation is often associated primarily with jazz, I will begin this analysis by viewing the improvising process apart from any particular stylistic parameters. Thus, for instance, in considering how the improviser deals with the future, I do not assume—unless otherwise specified as in part III below—the existence of pitch or rhythmic parameters particular to jazz, raga, or various types of “concert” improvisation. Also, for reasons which will soon become apparent, I begin by looking at improvisation in a collective rather than solo or unaccompanied format. Solo improvisation will be taken up in part IV.

I define “event” as the perception of a musical object (sound or silence) and the inference of implications (if any) from that object-perception. The “present” is understood as having two aspects, localized and overarching, which correspond to states of consciousness or awareness. The localized present is the time frame embracing the realization of an event, whereby any given present-event is experienced as sequentially distinct from its past and future. The perception of the localized present prevails in what I define later as “ordinary” consciousness. “Heightened” consciousness is characterized by experiencing the present both as a localized point in a past-present-future sequence, and as an overarching span, in which the sense of past-present-future is subsumed within an eternal sense of presence. Localized present and event are therefore closely linked, as are temporal conception and awareness state.

Perhaps the primary reason for assuming improvisation and composition to be the same process undertaken at different speeds is that both involve the structuring of musical ideas in a temporal sequence. One event is placed after another, and from each idea created, a field of implications is generated, containing one or more possible successors to the realized idea. With each realization of what was previously an implied successor, an additional link is added to the accumulating chain of events in a piece. However, when we probe the various ways events may be con-

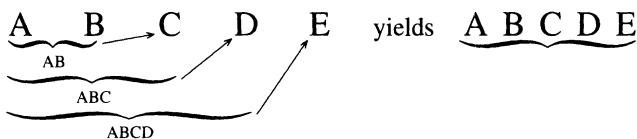


Figure 1

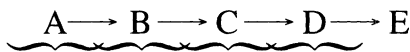


Figure 2

ceived in relationship to the entire sequence, significant differences in temporal perception emerge which yield a framework for distinguishing between types of creative processes.

In the event sequence in figure 1, the prime determinant for selection of event E is the aggregate of its predecessors, ABCD. That is to say, when the creating artist completes D, he or she infers an implication field shaped by the cumulative conception of materials ABCD. In figure 2, on the other hand, the artist proceeds in a more moment-to-moment manner, generating an implication field at each time point, not based in an aggregate conception, but one in which each moment is perceived as self-contained and autonomous. Therefore event E in figure 2 is not a result of ABCD, but only of its most recent predecessor D. This type of perception might be equated with what Kramer (1988) terms a “nonlinear” or “vertical” conception, where “each event is understood as independent of preceding events”.⁴

Expanding temporality

Two distinct temporal directionalities have emerged here. In figure 1, temporal conception projects backward in time; in 2, it unfolds recursively toward the localized present. Since the composer has the capacity to stop and review what has already been created and preserved through notation, he or she is able to reflect upon the past in a way not possible in improvisation. In other words, while the improviser can recall past ideas, this must be done while creating in the present, whereas the composer can practically “freeze” time and contemplate the past at length. We can thus correlate figure 1 more directly to composition, and figure 2, to improvisation. That the composer may also, at any specific moment, attend to all moments with respect to what follows brings further aspects of tem-

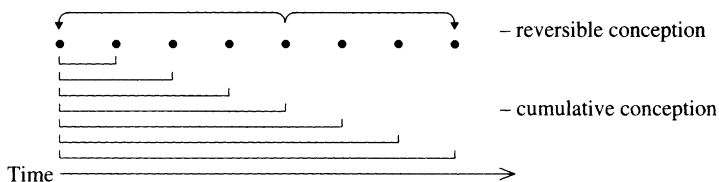


Figure 3

poral directionality into the picture. The composer may enter and freely traverse the past-present-future continuum of a work, assuming the vantage point of the future to review and possibly alter the past, or that of the past to view and rework the future. The temporality of the composer thus has both *cumulative* and *reversible* qualities, whereby relationships between events and their pasts and futures may be conceived (figure 3). Such a conception is manifest in the large-scale symmetries of, for example, the sonata-allegro movement of a classical symphony, or in works Kramer (1988, 52) categorizes as “moment” forms, where “the order of moments is seemingly arbitrary,” and yet events are bound together by a kind of overall “logic.” Thus, even when the sense of overt relationship, through motivic development, or recapitulation of ideas, between materials in a sequence is consciously inhibited, the cumulative and reversible aspects of an expanding temporality may be essential to a composer’s conceiving of such logic (save for instances where stochastic processes are involved). In fact, the greater the discontinuity in a piece, and the more a composer steps back to reflect on the evolution of a work, the more difficult it is to attend to each moment as uninfluenced by an ever-growing cumulative awareness of materials.

Inner-directed temporality

While the temporal conception of figure 1 is more readily invoked by the composer, and that of figure 3 is unique to composition, the temporality of figure 2, where the localized present is intensified, is more apt to occur in improvisation. One reason is that, because the future in improvisation is unmanifest, awareness is more intensely directed toward the present as the last manifest point in the creative process. The fact that the past is unchangeable within a continuous stream of ideas also magnifies the moment at hand as the locus of attention. Moreover, in any given moment, the possible implications one artist may infer from available musical data—that is, what else is happening at the time—may be incompatible with what his or her improvising colleagues perceive. Thus in

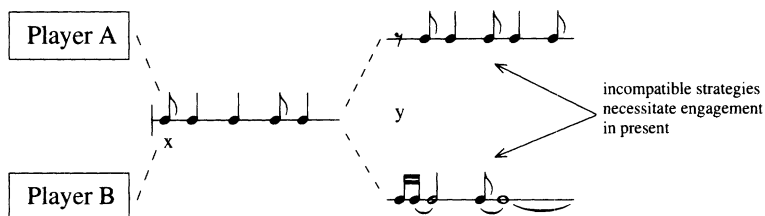


Figure 4

order to reconcile possibly *interfering* implications, the temporal awareness of ensemble improvisers tends to be directed to the vantage point most conducive to adaptive measures—the localized present (figure 4). Improvisation is thus driven by an inner-directed or vertical temporality.⁵

Retensive-Protensive temporality

While expanding and inner-directed conceptions involve contrasting directionalities, a third temporal category exists which combines aspects of both improvisation and composition. Retensive-protensive,⁶ or *RP*, conception involves the projection of awareness in past and future directions, thus sharing some similarity to the expanding conception of the composer, and yet occurs in the same continuous framework as does improvisation. *RP* conception may therefore be invoked as a subordinate temporality by improvisers, manifesting itself when past ideas are recalled and developed, or when future-directed strategies are implemented. Even when perception is predominantly inner-directed, involving minimal strategies to call upon past materials, the general sense of proportions or length in an improvisation (as felt when a particular improvisation approaches its end) involves some degree of *RP* conception. In fact, the greater the inner-directedness, which we will see as synonymous with more heightened awareness, the greater the capacity for *RP* conception. Recalling the definition proposed above, the experience of an overarching or eternal present subsumes the past-present-future sequences characterizing retensive-protensive temporality.

Retensive-protensive conception is also a subordinate temporality within discontinuous-time composition formats, invoked when composers work out ideas through spontaneous performance. Furthermore, *RP* conception is the dominant temporality of what I term “extemporaneous” composition, which is the creation of a composition in a single real-time attempt. Extemporaneous composition may appear identical to improvisation, but I propose that distinctions may still be drawn between

	Improvisation	Discontinuous composition	Extemporaneous composition
Primary Conception:	Inner-directed	Expanding	RP
Subordinate Conception:	RP	RP	Inner-directed

Figure 5

the processes, based on the idea that RP conception prevails in, and is thus a defining feature of, extemporaneous composition, while it is subordinate in improvisation. In fact, while the three temporalities may occur in a number of combinations, it is upon which one dominates that categorization of the creative format depends (figure 5).

We turn next to a more in-depth look at inner-directed temporality as a unique and central feature of the improvisation process.

II. Inner-directed temporality: the key to spontaneity

Deconstructing temporal bonds

Although the conditions of real-time creating—temporal continuity, unmanifest future, and interfering implications—are conducive to inner-directed conception, in order to optimally realize that conception, the improviser must resolve a paradox inherent in all creative endeavors. This paradox involves on one hand the internal repository of concepts, techniques and tendencies underlying all artistic and other behavior, and on the other hand the need for artists to be free from the temporal projections of these internal contents. Berliner (1994, 202) asserts that this “reservoir” of inner content comprises not only musical influences but reflects “a distillation of one’s experiences with life.” When improvisers infer implication schemes, those schemes are formed by the interplay of the internal reservoir, what is happening musically at the moment, and what I consider below as the awareness state of the improviser. While implication schemes are necessary for each inventive strategy, they also entail temporal associations which induce a binding relationship between one temporal coordinate and another, whereby the inner-directedness of temporal conception is inhibited. When this happens, interactive (and, as we will shortly consider, inventive) capacity is compromised. The solution to the paradox is not to repress or discard implications or internal imagery (I doubt that this is possible in any case), but to invoke a conceptual state where both freedom from and simultaneous access to such imagery are

possible. This occurs through the deconstruction⁷ or neutralization of the temporal associations of the internal reservoir. A heightened awareness state results where both localized and overarching present consciousnesses, with their corresponding properties of freedom from and access to creative resources, coexist. Examination of what happens within a cross-section of a creative episode sheds light on how this state is invoked.

Cognitive event cycles

The improvisation process is driven by inward and outward movements in awareness occurring within some given time frame. Inward movement involves the initial impulse to create, in which the conscious mind connects with realms of internal imagery in the internal reservoir. Outward movement is the expression of such imagery in the materials and gestures of one's discipline. These inward and outward strokes are not necessarily discrete phases of creative activity, but can overlap and even coexist, so that physical actions may occur within an internally-oriented movement of temporal consciousness.

The transformation from inward to outward strokes in the awareness of the improviser is mediated by three cognitive tendencies: actuality, possibility and probability conceptions. The actuality phase is the perception of a musical idea sounding in the localized present. Possibilities are the field of implications generated from each actuality. Within this field of possibilities exist one or more probable successors, which are potential events more likely to occur due to tendencies shaped by the background of the artist and the musical environment of the moment. While individual and environmental factors make some degree of probability here inherent in any creative activity, "probable" in the preceding sentence refers to instances where conception is driven by strongly conditioned patterns which bind the awareness in one time coordinate to a future coordinate. In such instances, awareness may be seen to be dominated by the outward stroke. A cognitive event cycle is thus comprised of an actuality conception (inward stroke), the inference of possible or probable successors (outward), and the neutralization of probability relationships enabling a new actuality phase. The more rapidly the cycle proceeds from one actuality to the next, the more cycles can elapse in any given time frame. The frequency of such cycles is significant, in that the actuality phase is the point in the cycle where awareness can penetrate into the internal reservoir, upon which invention and adaptation are dependent. Consequently, the more cycles per time frame (by the clock), the greater the interactive and creative potential in music making. Conversely, when the outer movement of awareness dominates in probability conception, the lower the event-cycle frequency is, and the less the inter-

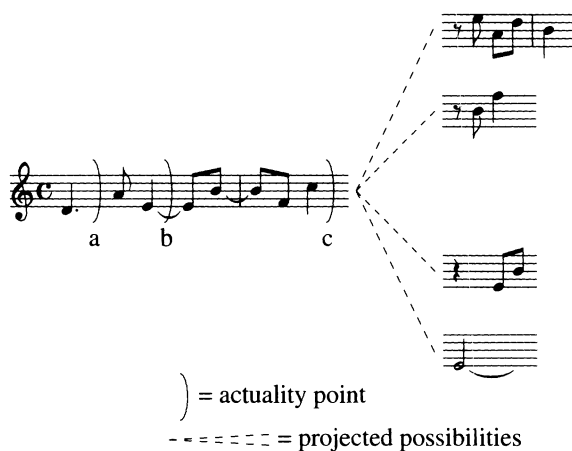


Figure 6

active and inventive capacity. Neutralization of the probability factor is thus the key to high frequency event cycles, inner-directed conception, and the creative goals of the improviser. The following sequence of diagrams illustrate.⁸

Figure 6 shows the awareness at actuality point *c* generating several possible continuations. The solution chosen results in the passage in figure 7, from which further possibilities are generated at the new actuality point *d*. At actuality point *c* in figure 8, the frequency of event cycles established is inhibited by probability conception, where a longer time frame elapses between actuality moments *c* and *d*. During the time required by the probability conception to run its course, any actuality phases which might have taken place—points of interaction and creation—are denied, thus weakening inner-directed conception.

If the artist is able to deconstruct such probability tendencies, more cognitive event cycles per time frame may result, and thus greater inner-directedness, interaction, and inventiveness. Figure 9 illustrates another treatment of the same musical circumstance which elicited the probability response in figure 8. But this time, neutralization of the probability tendency shown before at time coordinate *c* enables awareness to loop back to a new actuality phase and, in restoring event cycle frequency and inner-directedness, invoke a strategy better informed by the musical needs of the moment.

Thus:



Figure 7



Figure 8

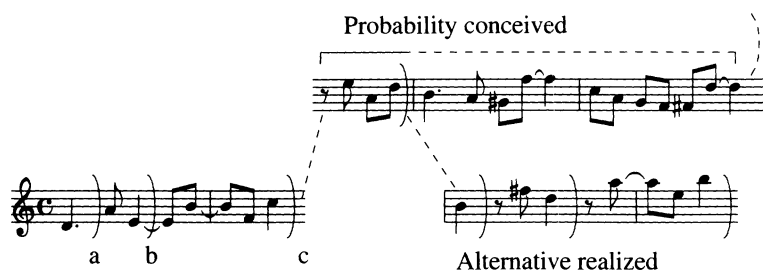


Figure 9

Two points should be emphasized here. First, although the probability conception illustrated in figure 8 may be recognizable as a jazz cliché,⁹ probability functioning can emerge in virtually any context, ranging from free jazz or concert improvisation formats, involving no previously ordained constraints, to rock, bebop, or even polka music based on highly specific formats. Certainly, the more detailed the formats, the stronger the tendency for probabilities to become manifest as precise formulae. In more open contexts, probability conception might become manifest in textural schemata, nebulous ascending gestures, or sustained multiphonic playing. The overattachment to an improvised section or piece assuming a certain length is another example of probability functioning, where the improviser is oblivious to the possibility of a piece ending after, say, only 45 or 90 seconds of play, despite the fact that numerous points may have arisen during that time span which would have provided highly effective endings or transitions. If an artist at any temporal coordinate is bound to

Slow ($\text{♩} = 60$)



Figure 10



Figure 11

a future coordinate to the extent that he or she is oblivious to interim developments, probability functioning prevails.

Second, it is important to not confuse event cycle frequency with speed of note activity. In other words, fewer or more notes per measure do not indicate, respectively, slower or faster event cycle frequency; event cycle frequency is determined in awareness, not resultant materials. Figure 10 illustrates a passage with slow note movement and relatively high event cycle frequency. In the course of sustaining a tone, the improviser reflects back on the present and chooses, based on criteria of each respective moment, to further sustain the tone at the designated time points. Figure 11 shows a passage with relatively large spaces of silence involving multiple high frequency event cycles during those silences, further illustrating the cognitive rather than sonic origins of event cycles. In this regard, it is important to realize the limits of notated examples in depicting creative processes, for the tendency to draw absolute correlations between external manifestations and cognitive activity can be misleading. Figure 12 illustrates a phrase which previously (figure 8) was depicted as the result of probability conception, but now is cast as the result of high-frequency event cycles, indicating a more inner-directed temporal conception. Here, the improviser is functioning from a state of greater freedom and awareness of surroundings, and the solutions indicated result, not from conditioned patterning precluding other options, but from an informed choice made amidst other options.

While all artists have personal, stylistic traits which recur from one work to another, the conceptual state underlying the expression of such traits is what distinguishes regurgitated clichés from inspired expressions. What might be a cliché in one instance, due to low-frequency con-

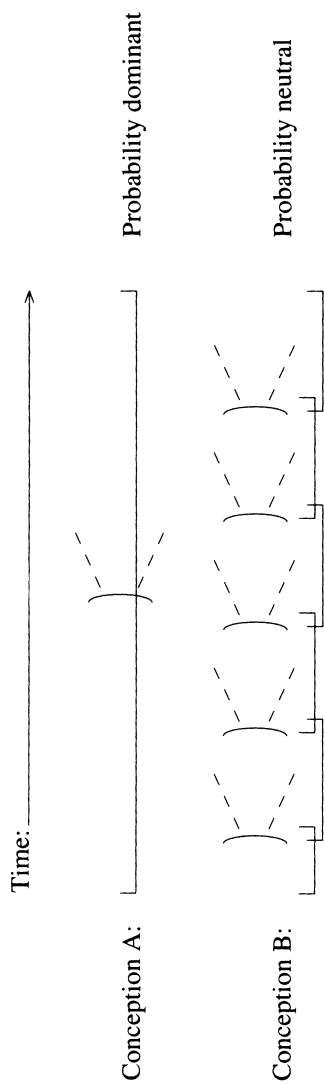


Figure 13

through a “second-degree reflexion” (193), a philosophy of science and art. Laszlo further surmises the purest or most localized instance of reflexive activity may involve the “meditating subject in *samadhi* aware of only his own self-referential nature” (195). In the *Bhagavad Gita*, Lord Krishna instructs Arjuna that the solution to the warrior’s dilemma on the battlefield is in attaining spiritual illumination through increased self-awareness: “Curving back on my own nature, I create again and again” (Dillbeck 1991, 130). It is difficult to imagine a more striking metaphor for the activity of the improviser. The process of neutralizing probability tendencies and breaking down time frames into constituent event cycles, intensifies the localized present, placing the improviser in a self-referral awareness, triggering a heightened awareness state in which interactive and inventive potential, as illustrated in figure 13, is enhanced. Improvisers’ descriptions of heightened awareness are cited in part V below (also see Berliner 1994, 393; Nachmanovitch 1990, 100). Our task now is to briefly consider the mechanics of how such states may be invoked.

The self may be thought of as having two aspects, personal and unbounded, whose integration is characteristic of heightened or transcendent states of awareness. The personal aspect of the self involves the awareness of one’s personal identity, the sense of “I” as distinct from other individuals which prevails in most everyday activity. While the sense of personal self predominates in ordinary consciousness, in heightened states the personal self is subsumed within an unbounded or universal self. Alfred Lord Tennyson’s description of “a kind of waking trance” where “individuality itself seemed to dissolve into boundless being” (Stace 1970, 121) seems to refer to such heightened awareness. In that the personal self is the organ of perception, self-reference is the condition where the self is aware of its intrinsic connection to a field of “boundless being.”¹² When in ordinary awareness the personal self is severed from its unbounded foundations, consciousness assumes an object-referral condition. Rather than identifying with its unbounded nature, the self becomes overshadowed by objects of perception.¹³ A musical manifestation of this state is clearly evident in the improviser being overshadowed by conditioned patterns. Having lost access to the dual qualities of freedom from and access to temporal relationships inherent in heightened event cycle frequency (heightened consciousness), the object-referral improviser is bound by patterns encoded in his physical-conceptual apparatus which shroud his or her creative and interactive potential.

By deconstructing the temporal associations of such object-referral patterns, the improviser sheds the bonds which confine awareness to localized, ordinary present-consciousness and invokes a self-referral, heightened conception. The link between temporal conception and state of consciousness is critical in this regard. Temporal associations may be thought of as indicators of awareness state. In ordinary consciousness as

we have considered, time is experienced largely as a localized past-present-future sequence; consequently, objects are perceived as inextricably bound to their temporal surroundings (past and future). When the improviser deconstructs such relationships, he or she neutralizes the logic patterns which bind awareness to its ordinary state. If an object's meaning derives from the context of its surroundings, a new meaning will result when the object is perceived as no longer dependent upon those surroundings. When temporally binding relationships are deconstructed, a more heightened state of awareness ensues, where temporal sequences are subsumed within an overarching present.¹⁴ Artists in such states have simultaneous access to two layers of localized present perception: that involving sequential-causal relationships between events, and that treating events as autonomous from their temporal surroundings. In terms of information theory, the artist in heightened awareness may conceive event chains as both higher- and lower-order Markov processes.

A key element of this transformation resides in the intrinsically integrative nature of the self. Transcendence, while less frequently invoked than ordinary consciousness, does not require the alteration of ordinary consciousness, as might be induced through some mind-altering drug, but rather results from the reuniting of two aspects of a singular, unbroken wholeness (the personal and unbounded self) which have become disjoined. Heightened consciousness is therefore more a matter of clearing away obstacles—object-referral attachments which shroud the union of the personal and unbounded self—and revealing a relationship which was always there, than it is of attaining some abnormal state of functioning through external means. The Zen practitioner ruminates over non-sensical ideas, or *koans*, and in so doing shatters the logic patterns which bind consciousness to its ordinary state and allows union with the unbounded. In much the same way, the improviser shatters the logic patterns embodied in temporal associations of ordinary, object-referral consciousness, and in so doing reintegrates the personal self with its unbounded source in a state of heightened awareness. Figure 14 illustrates the interconnection of various aspects of consciousness and temporality involved in this transformation.

The notion that transcendence is the realization of an inherent linkage which simply needs to be uncovered is also significant in light of questions which may have arisen earlier in this paper. The first has to do with frequency of cognitive event cycles. If higher event cycle frequency triggers, via inner-directed conception, heightened consciousness, is there a particular frequency which must be attained for this transformation to take place? In other words, how fast is fast? The fact that the transformation is a relativistic one, involving an individual deconstructing his or her own particular logic patterns as defined by temporal associations, is more

Awareness State	Temporal features	Aspect of self experienced	Nature of object perception
Ordinary Consciousness	time as past-future sequence	Personal sense of self as distinct from others	Object-reference; objects of perception overshadow awareness of unbounded self; objects bound to temporal sequence
Heightened Consciousness	past-future sequence subsumed within "eternal" presence	personal self subsumed within unbounded self	object perception subsumed within heightened self-awareness; objects perceived both as components of and autonomous from temporal sequence

Figure 14

relevant to the discussion than whether or not some absolute frequency exists. Any degree of liberation from the associations which bind consciousness to its ordinary level will enable some degree of heightened perception. Transcendence is a matter of degree, and our concern is with the process of transformation rather than with the extent to which transcendence occurs. Therefore, while research has dealt with absolute parameters of present-conception,¹⁵ our concern is with the subjectively-defined parameters of “present” and “event,” based in the dynamic relationship between self-referential and object-referential activity of consciousness. The deconstruction of temporal associations at any moment delineates the experience of present and event as phenomena shaped by one’s own personal experience, the meaning and logic imbued in such associations being the product of one’s cumulative experience.

Another question likely to have arisen involves whether deconstruction on a localized level triggers heightened present-consciousness, or whether heightened present-consciousness conversely triggers localized deconstruction. The former may seem attractive from an analytical standpoint. After all, theory tends to proceed from the part (a given discipline) to the whole (interdisciplinary relationships). Thus, the idea that transformations in musical processes motivate transformations in consciousness—the scenario I have portrayed so far—fits nicely into this scheme. However, the relationship is more reciprocal in reality, where an overall awareness state informs local autonomies (lower-order chains) as much as such autonomies serve as self-referral catalysts for global transformations. Moreover, those extraordinary artists habituated to heightened awareness will likely function more from the global to the local realms, where familiarity with transcendence motivates, rather than requires, moment-to-moment inner-directedness.¹⁶

We next consider how transcendence occurs in the composition process.

Heightened consciousness in discontinuous composition

The idea that inner-directed temporal conception serves as a self-referral mechanism triggering heightened consciousness, and so enhances the interactive abilities of the improviser, reveals a goal for the improvisation enterprise—transcendence—and a means for its attainment—inner-directed conception. One might now question whether and how heightened consciousness may be experienced during the composition process. If inner-directed conception is a self-referral mechanism for transcendence in improvisation, would not the expanding temporality of the composer thwart self-referral movement in awareness?

The fact that composers report transcendent states (Abell, 1964) leads us to conclude this is not the case. The inherent temporal dynamics of

expanding conception may in fact provide the mechanism through which such states occur. A brief consideration of this will not only illumine aspects of composition but the temporality and consciousness relationship in improvisation as well. The central principle is the close linkage between temporal directionality and the deconstruction process.

When the improviser deconstructs temporal projections, it is the inner boundaries of the localized present which are transformed. A probability-dominant time frame will occupy a greater temporal expanse in the improviser's awareness than a probability-neutral time frame because, in the quest for constituent present moments in the latter, the interior delineations of the present are neutralized. In that present conceptions may be uncovered within what were previously larger present conceptions, improvisation may thus be said to be driven by a quest for the smallest localized present moments conceivable.

The composer, on the other hand, deconstructs temporal associations in an expanding temporal framework, where it is the *outer* boundaries of the present from which liberation is continually sought. Whereas the improviser's conditioned patterns bind him or her to past-future temporal projections from any given moment, conditioned patterns in composition inhibit the composer's ability to extend such past-future projections beyond what may be conceived in ordinary consciousness. By deconstructing the conceptual patterns which confine temporal awareness to the relatively small expanse of ordinary present-awareness, the composer is able to more freely structure temporal projections from any given point in a work.¹⁷ As the resultant work takes on larger and larger dimensions, the ever-accumulating form mediates a transformation from ordinary to heightened consciousness by placing ever-increasing demands for temporal unification upon the awareness of the composer. In its efforts to grasp the whole, awareness seeks recourse in planes of consciousness allowing greater past-future unity.

The relationship between temporal directionality and transcendence thus provides further parameters by which improvisation and composition may be distinguished: the improviser deconstructs the inner boundaries of the present, while the composer deconstructs the outer boundaries through heightened presence-consciousness. The temporality-consciousness link also suggests ontological parameters for the musical present and event which support a phenomenological perspective.¹⁸ Within both the inner-directed and expanding conceptions, the present-event is revealed to be a dynamic rather than discrete parcel of time, whose boundaries are continually being redefined according to subjective criteria. Yet, because it is the outer boundaries which are transformed in composition, a present-event in one compositional time frame is subsumed as a constituent moment of a larger present-event as the piece unfolds. The ever-accumulating resultant structure mediates the movement toward an overarching

present-consciousness by continually confronting awareness with greater spans of information. In improvisation, moments are broken down into constituent present-events, involving a very different kind of collapse in temporal awareness, one which is inner-directed, and yet leads toward an overarching present-consciousness. From this perspective, transcendence in composition may be thought of as structure-mediated, in that the cumulative form leads ordinary awareness to a heightened self-referral state; in improvisation it is process-mediated because the deconstruction of cumulative gesture is what transforms consciousness.

The ramifications of these considerations are significant. Identifying mechanisms leading to transcendence in improvisation which may be distinguished from those motivating transcendence in composition supports the idea that analytical-aesthetic perspectives for composed music are ill-suited to fathom issues regarding artistic value in improvisation. Before reflecting further upon these issues, however, additional analytical concerns remain to be addressed.

III. Improvisation within pre-established formats: jazz and beyond

Much improvised music involves the use of an underlying format, which Pressing (1988) calls the “referent.” Jazz artists improvise on the harmonic-rhythmic framework of the composition they play.¹⁹ Nettl (1974) compares improvising formats in various world musics including Indian *ragas*, the *maqam* and *dastagh* modal structures of the Arabic world, and various musics of native North Americans. While vast differences in improvised performance practice must be acknowledged from one culture and idiom to another, there may be aspects common to all or much improvised music which use an underlying format. One such aspect may involve the challenge of adhering to the constraints of the format while maintaining spontaneity and interactiveness.

Here an apparent contradiction may seem evident, however, between the improviser’s quest to neutralize rigid commitments to future points (i.e. conditioned patterns such as in figure 8), and the past-future temporal constraints of the format. The jazz improviser playing in bar 1 must have some awareness of a harmonic shift in bar 4, and in fact must have some awareness of the harmonic sequence as a whole in order to most fully create within this context. Would not awareness of the past-future dimensions of the improvising structure conflict with the intensification of the present?

The key to addressing this question is the capacity for the improviser to conceive of the referent both in a moment-to-moment manner, and as a teleological (past-present-future) structure. The interplay of inner-directed and retentive-protensive temporalities, as optimally enabled in

heightened awareness states, allows these contrasting yet complementary conceptions to occur. I shall look at how this works largely from a jazz perspective, and then reflect upon how the principles delineated might apply to other improvisation formats.

Deconstruction within referent-based improvisation

Inner-directed conception within a referent occurs in three ways. The first involves the deconstruction of implications exactly as occurs when the improviser plays without previously established parameters, as has been outlined up to this point. The only difference now is that the implication fields inferred from each realized event will include the constraints of the referent. However, within such constraints—for example, an approaching harmonic shift—the artist may still deconstruct temporal associations, and so conceive of constituent presents and events and adapt to spontaneous developments. Thus when a jazz or rock improviser approaches the IV chord on a blues, or the Hindustani sitarist approaches *sam*, the all-important first beat of the tala cycle, the slate of implications generated will include the respective constraints of the referent, as well as the artist's predispositions in dealing with such constraints. Despite the apparent likelihood that more challenging constraints promote greater tendency toward probability functioning, improvisers creating within the context of a referent are in no way limited in the extent to which they may project and deconstruct implications and thus invoke inner-directed conception.

A second aspect of inner-directed conception in improvisation over a referent involves the deconstruction of the referent itself. The harmonic-rhythmic formats of jazz, for instance, are both precise and at the same time ambiguous, lending themselves to continual transformation while still providing the improviser strong syntactic underpinnings. In other words, while the jazz format specifies that particular rhythmic and harmonic parameters shall hold at certain times, any given parameter may be realized in a virtually infinite variety of ways. Consider the variety of ways any given chord in a progression might be realized. A pianist may let a single harmonic structure sustain throughout the time frame designated for that chord to sound, or play the chord rhythmically, or not at all, or use a three-note cluster voicing, or a ten-note voicing with extensions and chromatic alterations, or a melodic fragment, and so forth. The possible choices of the bassist are similarly wide-ranging. Furthermore, within a time-feel many interpretive layers exist; for example, playing 4/4 with a "2" beat, "broken swing feel," or other approaches and their infinite combinations. Moreover, the rhythm section can lay out and let a saxophonist play unaccompanied, the ensuing single melodic line (as-

suming a competent player) being capable of clearly reflecting the underlying harmony. Thus the possibilities for invention while still upholding a chord sequence are virtually unlimited. In addition to deconstructing personal inferences as does the “free” improviser, the referent-improviser also deconstructs the constraints of the referent itself in uncovering new layers of temporality and consciousness within a given improvising format.

When looking at other improvising formats from this perspective, the nature of the referent becomes an important factor in the degree to which referent-deconstruction occurs. In this regard, jazz and North Indian improvisation might be examples of highly malleable referents which could undergo significant transformations while still clearly delineating syntactic parameters. A less malleable referent might be found in much rock music, where the improvisational component is smaller and the acceptable inventive options open to the performer are generally more confined. Various forms of concert music improvisation using entirely different sorts of referents also involve differing degrees of deconstructive potential, either in the artists’ implications or in the format itself. Cope (1989, 142) contrasts Lucas Foss’s UCLA Improvisation Chamber Ensemble of 1957, which “worked primarily from charts indicating only initial ideas (e.g. motive, rhythm, pattern) needed to create a work” with formats such as the “improvisation boxes” of Berio’s *Circles* (1960) or Duckworth’s *Pitch City* (1969), which provided improvisational latitude of a different and more constricted nature. In the first movement of Foss’s *Etudes for Organ*, the performer “varies an exactly-notated motor-rhythm single-line melody by freely repeating note groups” (Cope 1989, 144), representing yet another degree of improvisational constraint. Improvised ornaments in Baroque performance might represent an even smaller realm of creative possibilities.

A continuum thus emerges, where at one end total improvisation with little or nothing planned in advance is found, while the other end describes musics with greater compositional content.²⁰ At the latter extreme, even interpretive performance of repertory, moreover, might be considered as a species of improvisation. For even in works entirely composed, performers will have some degree of creative options through volume dynamics, inflection, tempo, frequency of vibrato and other expressive nuances. While interpretive performers do not change the pitches or rhythms delineated by the composer, they certainly do deconstruct personal interpretive patterns in seeking spontaneous renditions of pieces they have already played countless times. Interpretive performance might then be seen to involve temporal principles similar to those defining improvisation within a highly detailed referent.

The cyclical nature of the referent

One important distinction between improvisation as it occurs in jazz, raga and much indigenous or popular music, as compared to various forms of concert improvisation, is the use of a repeating referent in the former and the general absence of such cyclical structures in the latter. The harmonic-rhythmic format of jazz, for example, or the Hindustani *raga* or Arabic *maqam*, repeat throughout a performance. Inherent in referents which are cyclical in nature is the third aspect of importance to inner-directed conception. This has to do with the way repetitive structures can obliterate the sense of cumulative structure and, in fact, intensify the experience of the present. This effect may be somewhat similar to the “flattened hierarchies” perceived in repeating ostinato patterns as suggested by Simon (1962, 106), or those musics cited by Kramer (1988, 56) which, because they have “no changes of structural import,” direct awareness toward the “vertical time of the work.” However, as considered above, the jazz format may undergo dramatic changes within the context of extensive repetitions, and so it is important to distinguish improvised music with cyclical referents from compositions which engender vertical conception through repetition or other strategies. In fact, it is the coexistence of (possibly great) change and cyclical repetition which imbues such improvised music with unique, transcendence-inducing temporal mechanisms. Therefore, inner-directedness may result not only from moment-to-moment deconstruction, both of internally-generated implications and the referent itself, but also from the cyclical nature of the referent. Furthermore, that transcendence-inducing properties are thought in some musics to be inherent in the structure of the referent (the intervallic makeup of the *raga* being one example, various African drum patterns being another) may suggest further parameters for transformations in consciousness inherent in improvised music.²¹

Heightened present awareness and inner-directed conception are therefore possible not only in improvising formats with past-present-future dimensions; certain formats may in fact have inherent properties which further promote such conceptual states. A key principle in this regard is the dual capacity in heightened consciousness for the present to be experienced as both a point and an overarching span, with the corresponding RP strategies that heightened states enable. One is the enhanced ability to conceive of the referent as a teleological structure within any given iteration of the cycle, so that for example an idea stated in bar 4 of a 32-bar form can be sustained, or recalled in bar 24. Heightened consciousness also enables the RP capacities to develop a motive over multiple choruses (repetitions of the referent), or the capacity to attend to the overall shape of a solo by, say, consciously employing contrasting textures in relation-

ship to what was played several choruses earlier.²² Thus, heightened RP conception is a by-product of heightened inner-directed conception; by penetrating into the point value of the present, the improviser gains access not only to liberated point-present conception, but also to temporal expanse.

However, it is important to emphasize various points here. One is that the demands of moment-to-moment information processing in a dynamic, collective setting, will tend to inhibit sustained RP conception, since not only the malleability of the referent but also interfering implications necessitate attending to the localized present. Inner-directedness will tend to prevail instead. Moreover, such collective referent-improvising conditions are conducive to less- rather than more-detailed RP conception. An example of the former is in attending to the overall shape of a solo, its general evolution from sparse to dense, soft to loud, sense of length, and climatic points. A highly-detailed RP strategy is found in non-adjacent motivic development, where the improviser recalls ideas from the distant past after having introduced contrasting materials. While certainly possible, highly-detailed RP conception is not as readily promoted in collective referent-based improvisation. Still, inner-directed attention to the streams of data in the localized present can be as sophisticated a mode of information-processing as RP conception. That advanced improvisers may access both through heightened awareness indicates the wide array of creative options possible in referent-based improvisation.

IV. Solo (unaccompanied) improvisation

So far, I have looked at improvisation in a collective format. An important principle in this regard has been that of interfering implications (review figure 4), where the possibility of incompatible strategies among ensemble members necessitates directing awareness toward the localized present. Due to interfering implications, the conditions of group improvisation will therefore tend to promote temporary rather than sustained RP past-future strategies. What about the unaccompanied improviser who is unencumbered by interfering implications? Would not he or she be able to invoke sustained RP conception? And recalling that RP conception is the dominant temporality of extemporaneous composing, might not solo improvisation and extemporaneous composing then be considered indistinguishable processes? I shall first examine this issue by looking at extemporaneous composing as it occurs within discontinuous (stop-time) and continuous (real-time) formats, and then compare these formats with unaccompanied improvisation.

Extemporaneous composing in discontinuous formats

Consider first the discontinuous composer who, over the course of several weeks, spontaneously generates and develops ideas at a keyboard, part of the time, within the context of creating and notating a work.²³ Here RP conception becomes a microcosm of the discontinuous composing process, where each moment is conceived with some awareness of its relationship to the entirety. If the composer is in the early stages of a work, his or her extemporaneous performing may be done with only vague notions of what might follow. However, consider the case where much of a work has been completed, yet a passage toward the middle still needs development. The composer seeking to rework this passage extemporaneously so it best fits into the whole does so having highly detailed notions of what precedes and follows the passage.²⁴

While the improviser may generalize schemes for the future, the more distant the future point, the less detailed is the knowledge of what might happen at that point. Thus RP conception may be of a different nature when composers (within discontinuous formats) extemporize, compared to when improvisers do. Composers invoke RP as an extension of the prevailing, expanding temporality, improvisers do so as a reversal in directionality. Only strong RP strategies—previously ordained or spontaneously invoked—could enable RP conception to take on a sustained nature in solo inventing. Thus, solo improvisation and extemporaneous composing within a discontinuous format may be distinguished by the prevalence of RP conception in the latter, and the subordinate role such conception plays to inner-directed conception in the former (figure 15).

Extemporaneous composition in continuous formats

Whether RP or inner-directed awareness prevails may also provide criteria for differentiating between two process most likely to intersect: solo improvisation and extemporaneous composing in continuous formats. In the latter case, the composer creates a work in a single real-time attempt. In recent times, technology has bridged the gap between creation and performance, as Kramer (1988, 79) points out, enabling or encouraging composers to turn out complete pieces through the “immediacy of electronic improvisation.” But if one accepts the possibility that discrete temporal conceptions exist, perhaps parameters emerge by which improvising and composing processes may be distinguished, even in such apparently similar contexts, according to whether either RP or inner-directed conceptions prevail. The following scenarios illustrate how these distinctions might hold.

In scenario 1, artist A begins with no prior plan, and engages in a kind of moment-to-moment generation and performance of materials. From

Collective improvisation— cyclical referents (i.e. jazz, raga-tala, etc.)	Collective improvisation— non-cyclical referents (various concert music and “free” formats)	Solo improvisation	Extemporaneous composition	Discontinuous composition
Primary: — Inner-directed	—	—	— RP —	— Expanding —
Subordinate: — RP —	—	—	— Inner-directed —	— RP —

Figure 15

each event, a next move occurs with no conscious attempt at reflection upon or reference to things in the past. Similarly, no attempt to formulate even the most general of future strategies is made. Past/future relationships are neither resisted nor embraced; simply, the conception of each event as self-contained is sufficiently engaging and fulfilling. Indeed, events perceived as autonomous will yield different perceptual data than those perceived as bound to their temporal surroundings. At some point, as often happens in improvised music, an idea emerges which is initially conceived as a possible catalyst for further development, but in the execution of the idea a possible ending is suddenly perceived and, with perhaps almost as much surprise to the artist as the listener, executed. This is clearly an instance of inner-directed conception, and thus improvisation.

The second scenario involves an artist B who, in contrast to artist A, implements a preordained strategy to begin with a motive, introduce a contrasting motive to establish a *b* section, and then return to the first idea to produce an *aba* form. Retensive-Protensive awareness is dominant in this instance as artist B sustains an awareness of how each move relates to the overall strategy. Although some “surprises” occur, originating in glimpses of inner-directed conception, none undermine the development of the piece as originally conceived.

The artist in the second scenario functioned as an extemporaneous composer because, in seeking to recall what had transpired and to employ future strategies, awareness was projected to past and future coordinates. While there may have been moments of inner-directed conception, RP temporality was clearly dominant and thus we have a hypothetical example of extemporaneous composition.

Now consider a third scenario, which in terms of final result is somewhat similar to the extemporaneous composer, but in terms of temporal conception, falls into the realm of the improviser. Artist C proceeds just as improvising artist A did, with no preordained strategy. Artist C happens upon a compelling motivic idea and ends up developing it extensively, with no over-arching notion of how long the idea might be sustained, but rather deciding only after each iteration to continue the motivic chain. Eventually, artist C moves on to contrasting material. After developing this contrasting material, it occurs to artist C that by restating the opening material, some semblance of rounded form might be achieved. Artist C restates opening material and ends up with what turns out to be roughly an *aba* form.

What began as, and was largely driven by, inner-directed conception ended with a glimpse of RP temporality. Nonetheless, the dominance of inner-directed temporality would define artist C’s work, according to the model proposed, as improvisation. And although artist C’s result may, in

retrospect, appear to reveal some pre-ordained strategy (or one invoked early on in the process) to construct the same large-scale relationships as artist B, on a moment-to-moment basis artist C directed awareness toward the present, not to the whole, and thus arrived at large scale relationships via a very different cognitive route. It is important to emphasize that either strategy might have involved extensive attention to detail. (I mention this to counter persistent notions of improvisation as an indeterminate and perhaps even undisciplined sort of activity.) But the strategies differ in the *directionality* of their respective conceptions. And it is from such distinctions in directionality, and thus in the type of information-processing, that differing expressive results emerge. The perception of events as components in a cumulative structure generates very different implication fields—from which succeeding events are realized—than the perception of events independent of antecedents.

One may well wonder what purpose is served in attempting to distinguish, even in these thought experiments, whether a piece is improvised or composed. Given the seemingly infinite combinatorial possibilities of temporalities within any given piece, identifying one or another as dominant would likely be difficult if not sometimes impossible. One reason for contemplating such differences, however, is that one temporality or another will generally tend to prevail over a free or random mixture. In other words, artists disposed in a given creative episode toward either inner-directedness or RP conception might tend to maintain whichever conception has been established at the outset, due to a kind of inertia inherent in the respective strategies.

A second reason for considering distinctions between unaccompanied improvising and extemporaneous composing is the light this consideration sheds on those large categories of improvising and composing activity which clearly are distinct: collective improvisation and discontinuous composition. Thus, while Keith Jarrett's solo improvising and composing may at times be indistinguishable along the parameters of temporal conception, these same parameters still support perceptual distinctions between his composing and his jazz trio improvisations.²⁵ Not only does the need to attend to interfering implications motivate inner-directedness in the latter, the use of a cyclical jazz referent further brings temporality-inducing parameters to the creative process. In considering distinctions, however subtle and problematic, between the solo improviser and extemporaneous composer, differences between those creative formats at the extreme ends of the scale in figure 15 become all the more clear.

From these different conceptual strategies emerge differing expressive goals, and thus contrasting aesthetic and analytical frameworks.

V. Closing thoughts: toward a systems view of the improvisation process

The orientation in music theory toward study of composed-notated works, while giving rise to a rich tradition of analytical thought, has also engendered a deeply-rooted tendency to view all modes of musical expression through the formal and architectonic perspective of resultant structure. Elliott (1995, 26) writes that “since the late 1700’s, the aesthetic concept of music as a work- or object-centered art has become so familiar that many people [. . .] fail to recognize its historicity, let alone its force. They then proceed to analyze and evaluate [. . .] all music making” from this standpoint. And thus assertions such as Berio’s (1985, 81), that improvisation lacks the capacity inherent in notated composition for “coherent discourse that unfolds and develops simultaneously on different levels,” represent a perspective unreceptive to the unique analytical dimensions of improvised music.²⁶ Until such dimensions are identified, the notion that something thought up on the spot is of inherently lesser value than a work fashioned over a period of time, where the composer had the opportunity to ‘really get it right’, will prevail.

I see two lines of response to these sorts of notions. The first involves a view of improvisation as a process, or what Alpers (1984) calls an “activity,” rather than a resultant structure. My attempts in this discussion to delineate temporality and consciousness as a foundation for such a process-based perspective may provide a much-needed angle in light of existing literature on the subject. The handful of historical treatises and the recent flood of jazz methodologies are largely confined to formulaic approaches particular to their respective styles, while largely ignoring the creative process and related cognitive areas.²⁷ Moreover, Gioia’s (1988) “aesthetics of imperfection,” based on the idea that improvisation is limited by deficiencies inherent in spontaneous conception and execution, and so must be measured not by some Platonic ideal but in comparison to what other improvisers might do in similar situations, hardly offers compelling aesthetic and analytical grounding. Nor does Berio’s concession that improvisation may, his above comments aside, be of “therapeutic value” to uptight interpretive performers. My hope is that the cognitive terrain of the present discussion has helped identify viable parameters for a process-based rationale. In shifting the locus of investigation from resultant work to the realm of the creative process, an “aesthetics of spontaneity” emerges where transformations in consciousness shed new light of the issue of artistic worth.

A second line of response to the above notions has to do with the structural manifestations of the various transformations occurring in the improvisation process. Here we might briefly delve into the realm of resultant improvised structure, emphasizing that our focus so far on the

inventive and interactive aspects of improvisation as opposed to the structural goals of the composer need not be construed as an absence of structural principles in improvisation. In deconstructing materials, the improviser does not obliterate “information,” or engage in some sort of indeterminate process where control over creative strategies is relinquished, but in fact attends with great detail to what follows what. The nature of this detail, however, and how it is perceived and transformed in the creative act is what differentiates improvisation from composition. Whereas the composer freezes through notation connections between temporally adjacent (and often disparate) ideas, the improviser seeks finer and finer strands of proximity, such that within any initial causal relationship conceived between two adjacent ideas constituent relationships may be discovered in another. Because zero-order Markov processes are neither likely nor necessary to invoking inner-directed temporality, there will always be some degree of connecting information in improvised event chains. Composers’ cumulative and reversible strategies yield expansive and overarching connections between events in sequence—in effect, local connections being reinforced through expanding temporal relationships. But in improvisation, subsequent events are closely stitched together, yielding a chain, each of whose links is bound only to its most adjacent surroundings. Improvised conception is thus optimally suited to rendering the effect of the vertical structures to which Kramer attributes unique expressive effects in composed music. For in order to create such forms the discontinuous composer must consciously repress awareness of relationships which naturally occur between an event and its surroundings; such awareness is superseded in improvisation by the temporal movement toward the localized present.²⁸

Perhaps the formal element most distinguishing resultant composed and improvised structures is hierarchy, where a moment in a piece is subsumed within larger sections progressively nested within even larger sections, culminating in a grasp of the whole. Meyer (1967, 123) states that “notation makes possible [...] complex, arched hierarchic structures [...] by enabling the composer to relate parts, sections and procedures through the work to one another.” While the moment-to-moment conception of the improviser yields, precisely in its nonhierarchical mode of information-processing, a different expressive effect regarding organization of materials, improvisation may in fact involve hierarchical stratification along very different parameters. Here I am referring to the prospects for transformations in the artist-cognition realm to trigger a hierarchical integration of additional aspects—listeners and environment—of the improvisation phenomenon. A view of improvisation as a system emerges when Nachmanovitch (1990,101) writes that, in peak performances, “the audience, the environment and the players link into a self-organizing whole.” That the key to this integrated state is the height-

ened awareness of the improviser suggests that the properties of hierarchy and complexity located in composed structure may also be manifest in improvisation through the real-time factors bound with improvised performance.

Within this scheme the primary level of the improvising system is that of artist cognition. When improvisers experience inner-directed temporality, an enhanced flow of information is motivated between components of the system. "Information" in this context may include any aspect of the system which is perceived as a musical stimulus. Thus, a motivic idea generated by one player and echoed by another may be an example of information. The novelty or humor perceived by an ensemble when one of its members plays something unusual might be another. Yet other examples of information might include the mood of the audience, or the ambience of the hall, or even the effect of economic or political conditions of the region on artists and listeners.

The system is quasi-hierarchical²⁹ in that transformations at the artist level motivate integration at other levels. As improvisers transcend conditioned patterns, they are better able, through more frequent event cognition, to respond to their fellow musicians. Heightened artists' interplay provides more perceptual data for interaction with listeners. Artist-listener interaction occurs in two ways. First, listener behaviors in the form of overt gestures of affirmation (such as applause) and more subtle responses (absence of coughing and other audience behaviors typifying listener captivation) are mediated by performers' interactive and expressive behaviors. Listeners familiar with the musical language at hand likely share, at least to a degree, in implication-realization perceptions similar to those of the performers. In fact, just as a composed work whose implication-realization cycles are overly predictable may diffuse listener captivation, improvised performances whose spontaneous interactions are weak—even among competent players—may similarly compromise listener engagement. When such engagement is enlivened, however, "performers and listeners form a communication loop in which the actions of each continuously affect the other" (Berliner 1994, 459). This communication loop leads to, and is motivated by a second type of artist-listener integration, involving a field effect of consciousness noted in literature on heightened awareness states (Goswami 1994; Hagelin 1987). Here the awareness of each artist and listener is affected by the collective consciousness, so that the enlivenment of the collective promotes heightened individual consciousness, and vice versa. Zeitlin describes experiencing an "altered state of consciousness" and as a result the sense that "I'm really part of an audience and that we're all listening to the music" (Milano, 1984, 25).

Might the enlivenment of collective properties of consciousness enhance individual and collective receptivity to subtle influences, ranging

from climate, geography and political-social events to more abstract archetypal impulses? While such considerations decidedly stretch the boundaries of music analysis, they are not entirely foreign to modern thought. Jung (1961) theorized that the “collective unconscious”³⁰ might function as a repository for archetypal impulses, an idea correlating to the “spirit of the times” advanced by various thinkers. Heisenberg (1958, 109) reminds us that “the spirit of the times is probably a fact as objective as any in natural science.” Thus, when Evan Parker attributes to “the precise emotional and atmospheric conditions” (Bailey, 1980) of the moment a role in what is created, he may be referring to something which, as problematic as it is to quantify, bears considerable analytical importance. Moreover, that improvisers respond through “heightened trance states” to the “quality of energy in the room which is particular to those people, that room and that moment” (Nachmanovitch 1990, 101) further supports a hierarchical view of the improvising system. Collective sensitivity to a wide spectrum of environmental information may be traced to transformations in temporality and consciousness on the primary level of artist cognition and to the ensuing artist-listener awareness.

Whether or not one is inclined to accept the total range of these ideas, their contemplation should help illuminate the sharply contrasting circumstances, and differing ontological models, of composed and improvised music. Improvisation involves a singularity of performance and creation, of playing and listening, and of a range of environmental forces at a particular time and place affecting both artist and audience behaviors. Composition occurs in a discontinuous temporal framework; creation is not only temporally but also spatially separate from performance, and a piece is often created by one individual and played by another. While the composer certainly responds to environmental influences during the creative process, feedback from fellow inventors and listeners, the properties of collective consciousness at the time of listener-reception, are absent. This is not to deny the expressive qualities in the composed work, but to contrast these qualities with those stemming from the strategies of the improviser, who by deconstructing the present and accessing expanded realms of information and interactive levels, attends not to resultant structure but to a complex array of components beyond, and yet affecting, the resultant work during the creative act.

While the transcendent function of the art object underlies the conventional musicological orientation toward the composed literature, the concept of transcendence mediated by the creative process may be significant in suggesting a paradigm of music research appropriate for improvised music. I hope that this discussion will stimulate further thought along these lines.

NOTES

1. I am using the term “vertical” somewhat similarly to Kramer (1988), though his temporal investigation is concerned not “with the actual process of composition” but with time “as perceived by listeners” (22).
2. Nettl (1974, 6), for instance, suggests that improvisation and composition might be considered as “rapid and slow” versions of composition, rather than as fundamentally contrasting processes. Berliner’s chapter in his seminal book *Thinking in Jazz* (1994), entitled “Composing in the Moment”, suggests similar comparisons: “Few experiences are more deeply fulfilling for improvisers than the compelling, all-absorbing nature of composing music in performance.” Elsewhere in the book, however, Berliner contemplates that the “compositional conditions” of jazz improvisation may differ by degree from those of notated composition due to the “multiple tasks” (497)—split-second decisions, interactive variables, irreversibility of the process—of spontaneous creation/performance. These observations point toward, and yet fall short of, delineating fundamental distinctions between the two processes which transcend the speeds of the operations. Elliott (1995) and Alpers (1984) follow similar paths of inquiry. Schoenberg’s (ed. 1975) description of composition as “slowed-down improvisation” suggests from the opposite angle that improvisation and composition differ only in speed of operation.
3. Such aleatoric methods can involve both composer and performer indeterminacy. Exemplifying the former is John Cage’s use of the I Ching in composing *Music of Changes* (1951), where musical materials were determined through the throwing of dice. Stockhausen’s or Earle Brown’s strategies of giving latitude to performers in determining structural dimensions of a piece provide examples of the latter. The temporality involved in either compositional approach may differ greatly from that of conventional, determinate composition, but if the process involves discontinuity and some degree of reflection on what will or might follow, then the conditions of the proposed definition, and their purpose of distinguishing improvisation and composition, are satisfied.
4. Kramer (1988) models distinctions between linear and nonlinear temporality with the Markov chain from information theory (see also Meyer, 1967). Lower-order Markov processes involve relationships between fewer antecedent events and are thus more nonlinear; higher order processes are more linear due to their linkage with more predecessors. While a zero-order Markov relationship is theoretically possible, which would involve the conception of an event with absolutely no connection to its predecessors, generally there will be some degree of relationship in improvised event chains between a moment and its near past. Thus in figure 2, there is some overlap between each event and temporally adjacent events, consistent with Clifton’s (1983) idea of the present as a “horizon” which fades into the past and future.

I should mention that Kramer’s use of the term nonlinear, in addition to its localized perspective (from lower-order Markov relationships) also has a global aspect where nonlinearity arises through implications generated from “principles governing an entire piece or section” (1988, 22). As this discussion develops, I shall propose that vertically-conceived improvised events may also be influenced by global features, but these features in improvisation will tend not to be confined to the cumulative musical structure. Rather, they will extend to the various aspects—

artists, listeners, and environment—of the time and place of performance, of which cumulative musical structure may be but one small component.

5. The terms “inner-directed” and “vertical” are largely interchangeable, but inner-directed more strongly conveys a sense of motion, while verticality suggests stasis. Consequently I favor the former to better reflect the improviser’s transformation from one temporal-conceptual state to another.
6. The terms *rentension* and *protension* originate in Husserl’s (1964) phenomenology of time conception. See also Lewin (1986) and Miller (1984).
7. My use of the term “deconstruct” departs from the conventional poststructural context in two ways. First, whereas literary theorists deal with the deconstructive activity of the reader, where meaning is not inherent in the structure of a work but derives from readers’ inferences triggered by such structure, my concern is with the inventor’s deconstruction of personal inferences triggered by the musical situation at hand. Moreover, whereas the deconstructive activity of readers is thought to undermine the transcendent function of a text, I propose that by deconstructing inner content, and thus temporal projections, the improviser invokes transcendence.
8. In these examples the designation of where and how often event cycles are conceived is arbitrary and not intended to suggest that a uniform temporality would be experienced by all artists in the creation of any of the notated passages. Rather, the main point is that personal inferences shaping event cycles may be deconstructed to reveal more event cycles within a given time frame. It is important to keep in mind the limitations of notation in depicting moment-to-moment cognitive processes.
9. The line in figure 8 is perhaps reminiscent of the sort of formulaic cliché Steve Lacy laments had become widespread in the 1950’s, as jazz improvisers sought formulaic approaches to deal with ever-increasing harmonic and rhythmic (tempo) challenges emerging in the music:

... the patterns [were] well-known and everybody [was] playing them ... I knew what it took to learn them but I just couldn’t stomach it ... When Bud Powell made them, fifteen years earlier, they weren’t patterns ... Jazz got so it wasn’t improvised anymore. (Bailey, 1980, 72)

Jost (1994) also observes the tendency toward formulaic devices at extreme tempi due to technical and conceptual challenges. Still, the advanced improviser is able to transcend such challenges and attain high levels of inventive capacity regardless of constraints.

10. See Becker (1994), Maslow (1972), Ornstein (1974), and James (ed. 1985) for features commonly cited in transcendent states.
11. See also Hooper (1992), Goswami (1994), Orme-Johnson et al. (1982), and Ornstein (1974) for scientific research into transcendent experiences.
12. The various possible interpretations of this experience point to widely divergent views about the nature of consciousness. Hooper (1992) and Goswami (1994), for example, provide a glimpse of this spectrum by juxtaposing the tendency evident in part of the scientific community to confine consciousness to the physiology of the brain with the contrasting view—evident in Plato, Jung and much Eastern thought—of consciousness as a universal field. While the experience of heightened consciousness may be accommodated by either perspective, the analysis I propose, whereby personal consciousness is integrated within an unbounded field,

presumes what has been termed an “idealist” stance. Readers will of course come to their own conclusions about these issues.

13. An example of object-reference in everyday life is the seeking of inner fulfillment through accumulation of material possessions. Just as the object-referral improviser is overshadowed by conditioned musical behaviors, the object-referral individual looks to and is overshadowed by attachment to possessions.

Here it is important to differentiate self-reference and what might be called self-absorption, the latter pertaining to someone so preoccupied with their personal concerns that they become oblivious to their environment. Self-absorption is, in fact, an object-referral condition because awareness is not engaged or moving toward the totality of an integrated personal and unbounded self, but locked into the personal level.

I should also add that the enhanced perception of detail possible in heightened states is not simply a matter of paying greater attention to one's surroundings, musical or otherwise, but requires the expansion of the organ of perception into a larger field of experience. Conscious focus is an intellectual object-referral activity; heightened awareness involves the integration of intellect and intuition, thus enabling a wider spectrum of perception to occur.

14. Music theorists have also touched upon the temporality-consciousness link. Barry (1990, 250) equates transcendence of time with “heightened state(s) of consciousness,” where in other words, the everyday experience of localized past-present-future delineations are subsumed within an overarching or eternal presence. See also Kramer's chapter “Time and Timelessness” in his *The Time of Music* (1988).
15. See Clarke (1989) for instance. It is curious to note that the research into the length of the present which Clarke cites delineates outer but not inner limits of present conception. Similarly, Kramer (1988) and Clifton (1983) treat the present as a span or horizon, not as a point. Might the orientation of theorists toward the larger dimensions of the present be rooted in the expanding temporality of composed music? Inquiry into the smallest limitations of present conception seems to be an area which has attracted less investigation; however, see James (ed. 1962).
16. Yet another likely question involves heightened consciousness as it occurs in meditative and non-meditative practices. Whereas meditative practice generally involves withdrawal from, or reduction of, mental and physical activity, how might transcendence occur in an intensive activity such as improvisation? Literature on heightened states suggests that transformations in consciousness are possible in a wide array of activities. Maslow's taxonomy of “peak experiences” (1971), moreover, was based on experiences individuals had while engaged in a wide range of pursuits, as does Csikszentmihalyi's (1990) idea of “flow.” Hagelin (1987) outlines characteristics for four discrete higher states of consciousness, in three of which transcendence is integrated with waking state activity. These observations are significant not only in suggesting confirmation of what improvisers (and practitioners of virtually any discipline) commonly report, but also in suggesting parameters by which the creativity-craft paradox posited at the outset of this section may be resolved. Recall that this paradox is based in the need for the improviser to have simultaneous access to, yet freedom from, inner content. If a mode of consciousness enabling simultaneous transcendence of, yet full awareness of, objects of perception is possible, the improviser invoking this consciousness shall have full

access to and liberation from the temporal associations of his or her internal reservoir.

17. While ordinary consciousness is bound by temporal relationships between one event and another, these conditioned relationships are confined to a kind of temporal middle-ground, promoting neither the temporal expanse necessary for the composer nor the point-value of time sought by the improviser. The role of the artist is then, through the temporal directionality respective to his or her discipline, to transform consciousness through collapse of the temporal norms of ordinary present awareness.
18. The main phenomenological principle here is the ontological necessity of both consciousness (perceiver) and object (perceived) in defining any musical event. See Clifton's (1983) and Lewin's (1989) appropriations of Husserl's phenomenology in music perception.
19. I am assuming here a conventional approach to jazz improvisation, in full recognition of the work of Ornette Coleman, late-period John Coltrane, Cecil Taylor and many others who have explored improvising approaches within the jazz idiom, but not based on harmonic-rhythmic sequences.
20. I direct a 20-member improvising ensemble at The University of Michigan whose terrain, ranging from entirely free-form (no referent) improvisation to jazz to the use of graphic scores, covers much of the continuum mentioned. As one might imagine with an ensemble of this size, the closer the group ventures toward the completely improvisational end of the spectrum, the more critical it is for each member to have an understanding of temporal concerns and how they are linked to interactive capacity.
21. Rouget's (1985) work is seminal in revealing how widespread the transcendence-music linkage is around the globe. Although Rouget challenges the notion that transformed consciousness might consistently result from particular musical structures, he does consider this relationship to be among an array of factors (another important one being the disposition of the practitioner toward transcendence) leading to such experiences.
22. A plan to sustain a motivic chain throughout an entire section could entail either RP or nonlinear conception. If this strategy is conceived beforehand, RP conception is involved. However, it is possible that a motivic chain results from inner-directed conception, where only on a moment-to-moment basis does the artist decide to play yet another iteration of the sequence.

Here it is important to point out that inner-directedness, where improvisers seek the smallest constituent present moments, does not require fragmented conception of ideas but rather enables the improviser to invoke a heightened present awareness which ultimately provides the freedom to work with large phrases. Whereas composers can step back to review and contemplate a large phrase as a whole, the improviser, possibly glimpsing the whole, generally proceeds in a moment-to-moment manner, at each juncture assessing the situation and deciding, based on information of the moment, whether or not to proceed with the sequence at hand.

An excellent example of extended motivic development is found in John Coltrane's tenor saxophone solo on his composition "Impressions" on the recording *Impressions* (Impulse AS-42, 1962).

23. In the case of the composer improvisationally generating ideas from which compositions are later made, the creative process may indeed be defined to begin, due

- to the predominance of inner-directed conception, as an improvisation. If, after an idea is arrived upon, the composer continues to extemporize with RP conception, the improvisation may fade into extemporaneous composition.
24. While one may be inclined to liken this situation to that of the jazz improviser, unaccompanied or not, one important difference is that the compositional backdrop is not cyclical. That the extemporaneous composer creates within a fully manifest future, and the improviser's future is unknown, is another.
 25. See for instance, the Keith Jarrett recording *Standards, Vol. 1*. (ECM 1255, 1983.)
 26. It should be acknowledged that Berio's comments are aimed primarily at the concert, or what he calls "highbrow improviser," who he doubts "can articulate a discourse of a complexity and interest comparable to that of a baroque or even a jazz musician" (Berio 1985, 82).
 27. See for instance, C.P.E. Bach (ed. 1949), Quantz (ed. 1966), Czerny (ed. 1983) for Baroque and Classical treatises; and in the jazz realm Nelson (1966), Baker (1974), and Reeves (1989).
 28. The fact that recorded improvisations often warrant repeated listenings might indicate strong structural principles of a moment-to-moment variety resulting from interactive processes of performance. At this point, various questions arise regarding listener experience which are to be taken up elsewhere. Do listeners perceive the temporal cognition of the improviser? If so, do they hear improvised music differently than that composed? What about when listeners develop familiarity with a recorded improvised piece—do they hear the piece differently (perhaps more hierarchically, as they infer structural levels) after subsequent hearings?
 29. The stratification of artists, listeners, and environment in the improvisation system is an example of what Hofstadter (1980) calls a "tangled hierarchy," where emergent collective properties supersede the foundational roles components may have played in earlier stages of a system's evolution.
 30. The collective consciousness I refer to may be thought of as a localized facet of what Jung termed "collective unconscious." Enlivened improviser-listener consciousness yields receptivity to the collective unconscious and its undifferentiated content (pure archetype) and differentiated content (impulses unique to a time and place).

LIST OF WORKS CITED

- Abell, Arthur. 1964. *Talks With the Great Composers*. Garmisch-Partenkirchen, Germany: G.E. Schroeder Verlag.
- Alperson, Phillip. 1984. "Thoughts on Improvisation" *Journal of Aesthetics and Art Criticism* 43: 17–29.
- Bach, Carl Phillip Immanuel. 1949. *Essay on the True Art of Playing Keyboard Instruments*. trans. W.J. Mitchell. New York: W.W. Norton. (original edition, 1759. Berlin: G.L. Winter).
- Bailey, Derek. 1980. *Musical Improvisation*. New York: Prentiss Hall.
- Baker, David. 1974. *Advanced Improvisation*. Chicago: Maher.
- Barry, Barbara. 1990. *Musical Time*. Stuyvesant, N.Y.: Pendragon.
- Becker, Judith. 1994. "Music and Trance". *Leonardo Music Journal* 4: 41–51.
- Berio, Luciano. 1985. *Two Interviews*. New York: Marion Boyars.

- Berliner, Paul. 1994. *Thinking in Jazz*. Chicago: University of Chicago.
- Carr, Ian. 1992. *Keith Jarrett*. London: Paladin.
- Csikszentmihalyi, Mihalyi. 1990. *Flow: The Psychology of Optimal Experience*. New York: Harper and Row.
- Clarke, David. 1989. "Structural, Cognitive and Semiotic Aspects of the Musical Present". *Contemporary Music Review* 3:111–131.
- Clifton, Thomas. 1983. *Music as Heard*. New Haven: Yale University Press.
- Cope, David. 1989. *New Directions in Music*. Dubuque: WC Brown.
- Czerny, Carl. 1836. *A Systematic Introduction to Improvisation on the Pianoforte*. trans. A.L.Mitchell. New York: Longman. (Original edition: 1836. Vienna, Cas- sel.)
- Dillbeck, Michael. 1991. "The Bhagavad Gita: A Case Study in Vedic Psychology." *Modern Science and Vedic Science* 4/2:96–134.
- Elliott, David. 1995. *Music Matters*. New York: Oxford.
- Gioia, Ted. 1988. *The Imperfect Art*. New York: Oxford.
- Goswami, Anit. 1994. *The Self-Aware Universe*. Los Angeles: Tarcher.
- Hagelin, John. 1987. "Is Consciousness the Unified Field? A Field Theorist's Perspective". *Modern Science and Vedic Science* 1/1: 29–87.
- Heisenberg, Werner. 1958. *Physics and Philosophy*. New York: Harper and Row.
- Hofstadter, Douglas. 1980. *Godel, Escher and Bach: An Eternal Golden Braid*. New York: Basic Books.
- Hooper, Judith. 1992. *The Three-pound Universe*. Los Angeles: Tarcher.
- Husserl, Edmund. 1964. *The Phenomenology of Internal Time Consciousness*. (J.S. Churchill, Trans.). Bloomington: Indiana University Press.
- Jaffe, Anelia. 1964. "Symbolism in the Visual Arts". *Man and His Symbols*. (Ed. C.G. Jung.) New York: Dell.
- James, William. 1962. *Psychology*. New York: Penguin. (original edition, 1892. New York: Henry Holt).
- James, William. 1985. *The Varieties of Religious Experience*. Cambridge, Mass.: Har- vard University Press. (first edition, 1902. New York: Longman, Green and Co.)
- Jost, Ekkehard. 1994. *Free Jazz*. New York: Da Capo.
- Jung, C.G. 1961. *The Spirit in Man, Art and Literature*. Princeton: Princeton Univer- sity/Bollingen Foundation.
- Kramer, Jonathan. 1988. *The Time of Music*. New York: Schirmer.
- Laszlo, Ervin. 1972. *Introduction to Systems Philosophy*. New York: Torchbook.
- Lewin, David. 1986. "Music Theory, Phenomenology, and Modes of Perception". *Music Perception* 3/4:327–392.
- Maslow, Abraham. 1971. *The Farther Reaches of Human Nature*. New York: Penguin.
- Meyer, Leonard. 1967. *Music, the Arts and Ideas*. Chicago: University of Chicago.
- Meyer, Leonard. 1973. *Explaining Music*. Berkeley: The University of California.
- Milano, Dominic. 1984. "The Psychology of Improvisation." *Keyboard Magazine* 10/10: 30–35.
- Miller, Izchak. 1984. *Husserl, Perception, and Temporal Awareness*. Cambridge, MA: MIT.
- Nachmanovitch, Stephen. 1990. *Free Play: The Power of Improvisation in Life and the Arts*. Los Angeles: Tarcher.
- Narmour, Eugene. 1979. *Beyond Schenkerism*. Chicago: The University of Chicago.

- Narmour, Eugene. 1990. *The Analysis and Cognition of Basic Melodic Structures*. Chicago: The University of Chicago.
- Nelson, Oliver. 1966. *Patterns for Improvisation*. New Albany, IN: J. Aebersold.
- Nettl, Bruno. 1974. "Thoughts on Improvisation: A Comparative Approach." *The Musical Quarterly* 60/1:1-19.
- Orme-Johnson, David; and Dillbeck, M; Wallace, R.K.; and Landrith, G. 1982. "Inter-subject EEG Coherence: Is Consciousness a Field?" *International Journal of Neuroscience* 16: 203-209.
- Ornstein, Robert (ed). 1974. *The Nature of Human Consciousness*. New York: Viking.
- Pressing, Jeff. 1988. "Cognitive Processes in Improvisation" *Cognitive Processes in the Perception of Art*. ed. W.R. Crozier. Holland: Elsevier Science Publications.
- Quantz, Johann Joachim. 1966. *On Playing the Flute*. (Trans. E.R. Reilly.) New York: Schirmer. (original edition, 1752. Berlin: Johann Frederick Voss).
- Reeves, Scott. 1989. *Creative Jazz Improvisation*. Englewood Cliffs, N.J.: Prentice Hall.
- Rouget, Gilbert. 1985. *Music and Trance*. Chicago: University of Chicago.
- Schoenberg, Arnold. 1975. *Style and Idea*. London: Faben and Faben. (original edition, 1950).
- Simon, Herbert. 1962. "The Architecture of Complexity" *Proceedings of the American Philosophical Society*. 106.
- Stace, William. 1970. *Mysticism and Philosophy*. London: Macmillan.

The image shows handwritten musical notation on a five-line staff. At the top left, there is a key signature of one flat (B-flat) and a time signature of 4/4. The notation includes a series of notes and rests, with some notes marked with plus signs. Below the staff, there are several lines of handwritten text in all caps, which appear to be improvisation instructions. The text is written in a cursive, somewhat messy style. The first line of text says "2ND TIME REPEAT TILL QUE, ADD SOME". The second line says "AD LIB ON THROUGH 4 BAR DRUM SOL". The third line says "CUE AFTER TEMPO SPEEDS UP". The fourth line says "WE RETARD...".

E \flat 4/4 A7b5+12 [K1]

2ND TIME REPEAT TILL QUE, ADD SOME

AD LIB ON THROUGH 4 BAR DRUM SOL

CUE AFTER TEMPO SPEEDS UP

WE RETARD...