## Distributed Listening in Electroacoustic Improvisation

**DOUG VAN NORT** 

This article considers the distributed role that listening plays for both performer and audience in the process of discovering musical meaning in the context of electroacoustic improvisation through examination of particular emergent practices.

This article identifies emergent practices in the context of electroacoustic improvisation (EAI) and considers how they have the potential to invite performer and audience alike to locate themselves within the sound field through listening for relationships that manifest across players, mediated by systems of technological and performative engagement. I refer to this collective performance of attention as a process of distributed listening in order to highlight the particular reception-centric nature of co-constructing musical meaning that occurs in certain forms of EAI. The term distributed listening is meant to serve as a dual of the concept of distributed creativity [1] that arguably underpins all musical improvisation. In the context of this article, the complex concept of musical meaning therefore relates to one's perceptions of intentionality and the interrelationship of sonic events within the sound field, as directed toward audience and among performers. In this sense, the term distributed listening is invoked in accordance with the ecological view on listening taken by E.F. Clarke [2].

Much has been written in the post-Schaefferian world of electroacoustic music regarding the challenges surrounding listening and the construction of meaning, both from the point of view of audience as well as that of composer/ performer in their desire to effectively express a given set of musical codes. This includes discussion of perceived sonicgestural intentionality [3], the meanings contained within timbral forms [4] and acts of moving "outward" toward examining contingencies of the presentation context such as spatial composition [5] in order to understand and influence the reception of electroacoustic music by listeners.

In the world of musical improvisation, we can trace a historical narrative that, in a sense, flows in the opposite direction from the electroacoustic compositional context in that it begins from the "outside" and works inward toward the sonic material of the music in order to find meaning. In the case of jazz improvisation, many scholars have examined the cultural and political dimensions of the music and how these have informed musical structure as well its reception by an audience [6]. Moving into the world of free improvisation, an approach that avoids any externally defined a priori rules or logic, we arrive at a music that Derek Bailey has deemed "non-idiomatic" [7]-meaning that any musical or sonic signature is a product of the player or ensemble rather than of the form of music-making itself. Just as with electroacoustic music, we once again see a movement away from commonly held assumptions of musical structure and organization, leading to a sense of freedom but also one of potential challenges to reception by the listener. While freely improvised forms arguably move further from the specific cultural situatedness that underpins the jazz tradition, for many practitioners free improvisation maintains strong political overtones in its challenging of accepted notions of the division of musical labor and in the models of sociality that this in turn engenders. For example, Edwin Prévost has differentiated composition from improvisation by calling the former a "subtle prescription for a network of power relations," relating composition to property ownership and possessive individualism [8]. The question of whether free improvisation is inherently political is beyond the scope of this article, but Prévost's point is that even the freest forms of improvisation maintain some notion that each performer equally brings something "into" the music through his or her sonic identity, which helps to weave larger musical meaning through elements of intersubjective negotiation. Where electroacoustic music has looked to aspects such as spatial presentation that extend from the work to the specificity of the performance context, the inherent spatiality of free improvisation instead resides in the distributed network of performers who inject the sonic flow

Doug Van Nort (composer, improviser, researcher), York University, Goldfarb Centre for Fine Arts, York University, Toronto, ON, M3J 1P3, Canada. Email: <vannort@yorku.ca>.

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with musical gestures whose meanings and importance are spontaneously modulated, reinforced or subverted through this inter-performer dialogue. In both of these musical contexts there is more than just an invitation to participate, but rather there is a demand on the listener, whether performer or audience member, to become an active participant in this construction of meaning.

Located at the intersection between these two worlds, EAI presents a unique and particularly interesting situation that affords similar problems and prospects for performer and audience member alike in terms of meaning creation. The spatial, sonic and social contingencies of electroacoustics and free improvisation, augmented by the technical contingencies of new instrumentation, together have the potential to act to create layers of mediation and networks of interaction that place both performer and audience in a similar space of musical discovery. Moving toward specific practices in the world of EAI, I turn attention to situations wherein contingencies of technological mediation augment the potentials for inter-performer dialogue and influence while at the same time creating distance between performer and sonic result. This distancing leads to a shift in perceptions of causality and time scales, moving the performative act into the realm of listening-as-composition and discovery as much as in the physicality of gestural excitation. Such listening-as-composition certainly arises in solo contexts (e.g. David Tudor bringing to life his composed electronic systems), yet the dialogic power of distributing this process is made manifest in ensemble contexts such as in the music of AMM, as articulated by its members. Prévost, in discussion with Bailey, notes that "when the musical situation seems chaotic, when we are caught up in the maelstrom of sound, in which at times it is almost impossible to tell who or what is going on, that is the point when you have to 'distinguish' yourself, delineate your contribution, or else the enterprise is a meaningless cacophony. And, in the final analysis, it is up to each musician that this does not occur" [9].

Meaning is thus understood as a product of each player sonically defining their position in the community of the sound field. For his part in this collective exploration, Cornelius Cardew notes that the artfulness found in such improvisation is in the "searching for sounds and for responses that attach to them, rather than thinking them up, preparing and producing them. The search is conducted in the medium of sound and the musician himself is at the heart of the experiment" [10]. Prévost extends this process to include the audience, noting that "regular AMM listeners developed an almost proprietorial relationship to AMM music. It began somehow to exist outside of the persons who actually made the music" [11].

While I agree that this listening-in-search is necessitated by the freeness of the musical form, I would argue that more central are two distinct elements:

- The nonhierarchical and collectivist mindset that AMM has adopted since its inception
- The technological extensions and mediation of amplification that integrated electronic/acoustic sonic

## qualities while obscuring sound source locations and the temporality of their initiating gestures

The second element is evident in AMM via the integration of radio/tape sources as well as exploration of found sounds, perhaps most palpable in the prepared guitar-and-object playing of Keith Rowe. It speaks to what Michael T. Bullock [12] has referred to as "Self-Idiomatic Music"—music that delineates emergent practices of the individual in the process of inventing a sonic-gestural vocabulary through invention of instrumental apparatuses (as well as interventions into existing instrumentation).

The first element, I would argue, is an important determinant of a sound that AMM has described as "laminal": focused on overlapping textured layers that coexist and coevolve new meaning. This stands in contrast to "atomic" improvisatory styles based on turn-taking and sequential presentations of brief sonic ideas. Certainly an atomic approach to improvisation can be collectivist and nonhierarchical as well, but with AMM the laminal style is reflective of the collective modulation of the sound fields as a means of discovering one's voice as it sits in concurrent relation to the ensemble sound. Whereas self-idiomatic music-making focuses attention on creating a sonic-gestural language on the system-as-instrument (whether acoustic or electronic) and a developed negotiation of this, there is a unique musical listening context that arises when one extends such a collectivist stance to the shared technological mediation of a performing group, moving toward the ensemble-as-system. Just as self-idiomatic practices distance the player from traditional techniques of instrumentation through a desire for extension of sonic-gestural potential, the practices articulated here seek to distance singular authorship or a clear source of gestural intention in favor of the process of sonic structures forming through the sharing of musical expressions among performers. I argue that herein lies the potential to situate both performer and audience in a shared space of meaning construction.

In particular I would identify two kinds of emergent practices in EAI:

- Practices that assume a distributed approach to the act of compositional structures
- Practices that share sonic gestural actions as they propagate through shared signals in the moment of performance

The first kind of practice extends the self-idiomatic ethos to the collective act of composing the performative system. A canonical example of this approach is found in the music of the Hub [13]. Speaking about the group, Scot Gresham-Lancaster notes,

The intent to detach ego from the process of music making we inherited from Cage. To refine that impulse and to make it a living machine that both incorporates our participation and lets the breath of these new processes out into the moment: that is the unique contribution of the Hub [14].



Fig. 1 Oliveros/Van Nort/Arner Trio listens for meaning in a network of shared sonic gestures. (© Roulette Intermedium, Inc. Photo: Doron Sadja.)

The music thus resides nowhere and everywhere, distributed in its authorship and inviting a multiplicity of pathways toward coherent musical meaning. The audience resides on a similar plane of agency as the performers in constructing this meaning, precisely and paradoxically as a product of this interconnectedness and removal from causality. This can be seen across the group's repertoire: For example, a performer generates some initiating gesture (an amplitude waveform, a melodic riff, etc.), which can then be given over to a shared machine memory (literally "the hub") to be taken up by members of the group and applied to their own unique instrumentation, subject to compositional constraints. While the movement of musical gestures across performers is quite common in various forms (e.g. musical canons), in the case of The Hub's "computer network music," one is confronted with a living network of relations that is constrained yet not fully knowable by either performer or audience. One must negotiate the emergent sonic form through listening for individual intentions that are characterized by timbral and gestural identities and develop an understanding of how they help shape and in turn are altered by the network itself. This demands a form of distributed listening that regards sonic structure and larger formal structures as inseparable, as well as continual examination of the agency of the players in relation to that of the network. To my mind, the most interesting of laptop orchestra compositions have taken up this project and are carrying it into our musical future.

The second kind of practice I have highlighted here is similar to the distributed composition of networks found in the music of The Hub; however, distributed listening in this case is more focused on the continuous reimagining of sonic intentionality. The listener must negotiate the concept of singular versus shared voice that arises through the artfulness of playing with sonic identity, through a dialogue founded on temporal causality, transformation and convergence within the sonic gestures themselves. This can be heard within ensembles such as Triple Point [15], the Arner/Oliveros/Van Nort trio (Fig. 1), and the Evan Parker Electro-Acoustic Ensemble (EPEAE). Within EPEAE we encounter a distributed set of self-idiomatic practices via extended acoustic technique, as well as electronicists composing their instrumental system, yet it is the distributed sonic gestural actions, propagating in the moment of performance, from which musical meaning emerges. As producer Steve Lake notes,

There are more unknowables than in "normal" improvising. The players have to see the whole soundscape unfolding and contribute to it tellingly, while having no idea of what may happen to the notes and phrases they are generating. Those phrases might be returned to them immediately, back-to-front or upside down, or come back to haunt them half an hour later [16].

With ensembles like EPEAE or Triple Point, there is a spatial and temporal sharing of musical ideas that at once collapses the distance among players and distances everyone equally from the nonlinear systems through which they propagate, so that all performers are exciting the network while listening for emergent forms, often without any sense of causality (be it theirs or another performer's). This engenders an approach not unlike that articulated by Cardew, yet challenges one to reconsider "how to play inside this dream-scape of sensory impressions, how to react?" [17].

If the early listeners to AMM indeed found avenues of ownership and meaning creation, as Prévost suggests, and if this is indeed a product of the collective ethos and attentions of the members combined with technological mediation of instrumental self-invention, as I have argued, then these two distinct forms of EAI performance serve as dipoles on a spectrum of practices that can extend this endeavor. They do this by distributing the compositional structuring of instrumental invention as well as by propagating sonic-gestural actions in a network of shared influence, where listener-performer dichotomies in the composition of meaning become ever more blurred, a fact that should be exploited and celebrated rather than suppressed or managed.

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**DOUG VAN NORT** is a composer, improviser and researcher whose work is concerned with issues surrounding performance and sensorial immersion in technologically mediated environments. He is currently Canada Research Chair in Digital Performance at York University in Toronto.