

# Becoming in the Practice of Acoustic Arts

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This paper situates the practice of acoustic arts in a broad social perspective, examining process and agency as primary motivators in the creation of a living sonic art system. It argues that the agency of the field itself requires a re-conception of the field as a social system, with the sustainability of that system becoming a central concern. It also argues for a shift in the practical imperative from the question of how to make acoustic art to that of how to 'make a living' as an acoustic artist, and how the acoustic arts might hope to 'stay alive'. The paper leverages the ideas of German sociologist Niklas Luhmann's social systems theory, and aims to reconcile a systemic view of practice with lived experience as a researcher investigating the sonic arts from both a theoretical and practical perspective.

## What Kind of Systems Theory?

A significant difficulty with utilizing a concept that is both abstract and over-applied is that it stands to lose meaning. The notion of "systems" is both. It is not, however, a conceptual tool without merit. A recent increase in popular science literature on the subject is useful if only for providing clear and generalized descriptions that can be later re-specified for acoustic phenomenon. Fritjof Capra provides such a general idea in *The Web of Life*:

The biochemist Lawrence Henderson was influential through his early use of the term "system" to denote both living organisms and social systems. From that time on, a system has come to mean an integrated whole whose essential properties arise from the relationships between its parts, and "systems thinking" the understanding of a phenomenon within

the context of a larger whole. This is, in fact, the root meaning of the word "system," which derives from the Greek *synhistanai* ("to place together"). To understand things systemically literally means to put them into a context, to establish the nature of their relationships. (Capra, 1997: 27)

Luhmann, initially influenced by the work of sociologist Talcot Parsons, drew more heavily in his later works on the concept of autopoiesis, a term coined by Chilean biologists Humberto Maturana and Francesco Varela for the sole purpose of describing the organization of life, and hence the distinction of living from non-living systems.<sup>1</sup> In Maturana and Varela's terms, a living system is distinguished by the fact that "it is able to produce itself by reproducing its elements while maintaining an organization of these elements that is characteristic of it". Hence, "the way to obtain a 'true' understanding of such a system is by focusing on this very process of self-production and self-organization". (Viskovatoff, 1999: 484-485) Essentially, for Maturana and Varela, a living system is one which produces itself. At first glance this appears either redundantly obvious or fallaciously circular, but Luhmann in particular is able to take the idea and apply it, for example, to the differentiation of social systems. Briefly, society is differentiated into functionally distinct subsystems, and the process of differentiation is marked by the internal organization of those sub-systems along lines of self-reference. Luhmann informs us:

*“The theory of self-referential systems maintains that systems can differentiate only by self-reference, which is to say, only insofar as systems refer to themselves (be this elements of the same system, to operations of the same system, or to the unity of the same system) in constituting their elements and their elemental operations. To make this possible, systems must create and employ a description of themselves; they must at least be able to use the difference between system and environment within themselves, for orientation and as a principle for creating information. Therefore self-referential closure is possible only in an environment, only under ecological conditions.”*

(Luhmann, 1995: 9)

An oscillation becomes apparent here between social systems formation and biological thinking, and a potential hook into the field of acoustic ecology emerges. Applying systems analysis to acoustic ecology is, in my opinion, a key methodological development required to overcome some of the problems of the nature/culture dualism that continues to dog research in the area. This, however, is largely outside of the scope of the current paper. What is important is the coupling, if only through analogy, between social and biological systems formation. Returning to the task of this paper, I proposed a discussion of the manner in which acoustic artists could "make a living". It is here I must interject an admission of taking a metaphor perhaps too far, but again, without excuse. The contention is simple; that to make a living, artists must, as part of the environment of the social systems of acoustic arts, produce communications that refer back to the production of acoustic arts systems. Making a living, then, refers solely to this production of life, the autopoietic organization of a system, within a given social-system.

## What Kind of Systems Practice?

Luhmann also provides definitions of a number of key concepts of systems analysis, and his Social Systems makes a claim of epistemological foundations. Of general use for now are the distinctions he provides of different kinds of systems analysis:

*“[...] there are two different possibilities for viewing the decomposition of a system. One aims to form subsystems (or, more precisely, internal system/environment relations) within the system. The other decomposes systems into elements and relations [...].”*

*The first kind of decomposition is carried out as a theory of system differentiation. The other ends up in a theory of system complexity.”*

(Luhmann, 1995: 21)

Here we see the beginnings of both practical and theoretical ends to systems theory. First, a concern with differentiation leads to an undertaking of modular analysis. The concern with complexity mirrors a concern for the “gestalt”; the environment. Either the harmony of the spheres or acoustic ecology could fit such a drive, both having emerged as ideas pertaining to the greater or "other than" world of sound beyond the given observer, the system beyond the system. The oscillation between the module, the differentiated unit or the observer, and the environment, the soundscape, places and spaces of production, drives acoustic becoming. Our technical systems, be it analogue synthesizers or digital audio synthesis patching environments, present an analysis of acoustic phenomena in a broader sense of sound systems nested in sound systems, coupled via acoustic communications, with an environment of meaning production. This is not far from Luhmann's approach to social systems, and nor is it far from the concerns of contemporary acoustic arts practices.

Alex Viskovatoff provides a further epistemological clue to the use of systems theory:

*“[...] the role of system theory is rather like that of mathematics: by working in a purely conjectural abstract realm, it is left free to explore conceptual models without concern for their immediate applicability and may thus come across ideas that would not otherwise have been found that may be of explanatory value in the empirical sciences... The role of system theory is hence to look for analogies across disciplinary boundaries in case such analogies lead to models that can be of use in particular empirical sciences.”*

(Viskovatoff, 1999: 493)

Comparing systems, allows, for example, to think of composing text and composing sound as structurally differentiated manifestations of the same systemic organization. For my own purposes I've always approached text, the written word, in a systematically cut and paste manner, almost akin to tape splicing. On numerous occasions nothing short of physically cutting and taping small snippets of paper together has allowed me to comprehend what I'm attempted to write. Should I "sample" an author directly, remixing multiple samples into a composited stream, or should I spin the author, filter and distort via the application

of effect, in order to fit an entirely imagined composition, an emergent meaning perhaps guided by dialectic relations? It seems not much of a stretch to imagine a singular recombinant poetics that encompasses these repetitive and associative operations.<sup>ii</sup>

In systems theory we find the potential to describe both the theoretical and practical aspects of acoustic arts research. In dealing with the well-documented tensions between academic and creative practice, it soon becomes apparent that one cannot escape systems. I would argue that this is true of any higher order, institutionalized practice, but simply more so when attempted to merge two domains of practice, under a single institutional framework.<sup>iii</sup> Gilles Deleuze in dialogue with Michel Foucault talked of theory and practice as "a system of relays within a larger sphere, within a multiplicity of parts that are both theoretical and practical". (Lycouris, 2000: 1) Even the general demands of dissertation research and writing require systems of note taking, brainstorming, progress reporting; the scale of a dissertation is such that progress is untenable without constraints on action, where constraints suggest not only limitations but an opening to succinct further possibilities that allow progress to, well, progress. Likewise, the communication between academic actors within institutional social moors occurs systemically according to institutional codes. These are fundamental academic practices that I suspect would be well served by analysis via Pierre Bourdieu's concept of habitus, essentially systems of disposition. This is again a task outside of this paper's scope. It is enough to say that academia is systemic and indeed systematic.

Artistic practice, wonderfully characterized as "research at the edge of chaos" by Carole Gray and Ian Pirie (Gray and Pirie, 1995), seems less immediately so. The immediate question is of course, "why is this a problem?". By inviting sonic arts into the academy we expose them to systematization - we do so similarly to the artists themselves. In devising academic systems for the management of research of acoustic arts we need to place this artist centrally - unlike the physical sciences which rely on empirical observation and hypotheses construction, the arts rely on sensual transformation via the psyche, a psyche fed and developed by its surroundings. In this sense, artistic becoming is doubly sensitive to environmental emergence. The living art system produces communication via the medium of meaning, but also requires a selectivity of appropriate meaning couplings in order to successfully instigate this process of distinction. Art systems require an inspirational environment to

perform their own system/environment distinctions. In Luhmann's terms, art "is a 'playful' doubling of reality; this is both the result and the condition of its evolution." (Luhmann, 2000: 243)

## What Kind of Sound Systems?

For an artist working with sound, systems are inescapable, whether one considers acoustic systems as technical artifacts, social systems of dispersion and production, the bio-acoustic systems of listening or the psychic systems of musical perception and understanding. There have been attempts to herd minimalist composition into a genre of 'systems music'. Jacques Attali, amongst others, goes further and equates the introduction of sound recording systems with the simultaneous introduction of a new social regime:

*"[...] [recording] emerged as a technology imposing a new social system, completing the deritualization of music and heralding a new network, a new economy, and a new politics--in music as in other social relations ... Recording expresses itself in an overturning of the whole of understanding. Science would no longer be the study of conflicts between representations, but rather the analysis of processes of repetition. After music, the biological sciences were the first to tackle this problem; the study of the conditions of the replication of life has led to a new scientific paradigm which ... goes to the essence of the problems surrounding Western technology's transition from representation to repetition. Biology replaces mechanics."*

(Attali, 1985: 89)

Attali clearly lays out the need for a systems thinking approach to the complexity of sound production in his description of the shift to "the analysis of processes of repetition", a task mirrored in Lefebvre's Rhythmanalysis. English artist Trevor Wishart certainly similarly recognizes the significance of the emergence of acoustic systems, claiming recording to have augmented our understanding and perception of the phenomenon of sound itself:

From the final quarter century of the twentieth century, it now seems clear that the central watershed in changing our view of what constitutes music has more to do with the invention of sound recording and then sound processing and synthesis than with any specific development within the language of music itself. These latter developments have vastly expanded our knowledge of the nature of sounds and our perception of them and contradicted many nineteenth century preconceptions about the nature

of pitch and its relationship to timbre. (Wishart, 1996: 5)

R. Murray Schafer, in the forward to *Sonic Effects*, furthers the call for a systemic view of the relationships inherent to acoustic experience and likewise drags phenomenology into the game:

*"The oscillation between apprehensive and relaxed listening is discussed .. [and] .. the instability of the soundscape is dramatized by an apt quote from Merleau-Ponty: "The perceptual 'something' is always in the middle of something else." This is a welcome discussion because of the tendency of researchers to think of the soundscape as static data, like a photograph or a diagram."*

(Augoyard, 2006: xiv)

Although Schafer, Wishart and Attali arguably no more than hint at the possibility of a unified systems approach to acoustic phenomena, they provide that hint from three different directions, the ecological, the compositional and socio-biological respectively. And while creativity itself is yet to have been encountered in strictly systematic framing, its environment most certainly has been demonstrated so. As Iannis Xenakis states, "the worlds of classical, contemporary, pop, folk, traditional, avant-garde, etc., music seem to form unities unto themselves; sometimes closed, sometimes intersecting." (Xenakis, 1985: 1) Further verification of the role of systems can be found in a brief search of the *Organised Sound* journal, revealing a wide range of results from technical system implementations to direct applications of systems ideas to musical forms. Likewise, we find the Australian Sound Design Project lists Systems Developer as the practical orientation of a number of people listed in the biographical database including Alan Lamb. (Bandt et al, 2001) And within acoustic ecology itself, Barry Truax in *Acoustic Communication* provides a discussion of the system of sound production as a social apparatus, but also touches on ideas that could be extended by systems theory in his notion of acoustic communities. (Truax, 2001) This will have to suffice as impetus for future inquiry. From now, though, we have an invitation to engage with both living and social systems theory, to investigate the coupling of acoustic arts practices with our understanding of acoustic consciousness and the interaction of sentient and observant beings within their environment.

## But is it a Sound Environment?

Brandon LaBelle (LaBelle, 2006: 207) makes it clear that "the realness of place .. partially relies upon the actuality of the person." Any environment needs subjects to give it meaning, if only as agents of communication. Yet communication is by many reports a great weakness within the experimental acoustic arts community. Leigh Landy goes to great lengths to spell out such criticisms. Nonetheless, as Landy himself proffers, the situation is not entirely bleak. There are numerous productive and sensitive engagements with self-referential communicative becoming, whereby the art of sound sounds out its own artful evolution. LaBelle relates of Hildegard Westerkamp's work that .. "acoustic feedback .. finds its parallel, for Westerkamp's musical work situates the composer within a communicational model in which recording means looping self and environment in a weave of the found and the compositional." The composer circulates between the observed and composed, or rather, builds loops of representation, oscillations, between the created and the found. When we listen to Westerkamp oscillating, we hear her circulating in a broader acoustic context than the one in which she oscillates in the act of composition. She spins a world for us, that is both her world and our world, yet neither in between This is the emerging repetition of acoustic becoming - a becoming that we are drawn into. LaBelle takes it further, and in reference to Westerkamp's "Kits Beach Soundwalk" we find him taking up the "reflective invitation" into a soundscape that "wears two faces, one being the simulation of presence, as in the city's noise, the other the simulating of poetic drifts toward mythological origins". (208) Here, acoustic art becomes becoming itself.

To me this is a primary prerogative for the continued survival of acoustic arts. Leigh Landy rightly calls for communications to lead the way. Luhmann tells us that communications are the building blocks of social systems. For practice of any kind to become socially relevant, to be functionally significant, it must be social practice. Practice must serve the goals of social emergence precisely by allowing social systems to self-refer. Practice should become a communicative nexus through which practical oriented social systems can emerge. For artists, making a living means observing their interactions within and emergence from the social systems that give them meaning. And they must communicate these observations in the form of documentation of practice. This is not an option; it is functional imperative for continuing social systems of any kind. The imperative is to self-refer or perish. We should

be less concerned with networking ourselves or our ideas, but our practices as documentary communications in order that the life of practice itself is ensured<sup>iv</sup>. As such, the demands are placed on an environment that enables such selectivity, an environment for both the development of and sharing of practices in a structurally open manner. What is needed is an environment that makes it easier for artists and researchers to work together, for artists to conduct research, and for researchers to be creative. This requires the emergence of systems that augment practice to perform observation. Conferences, workshops and journals disappear from view and hence cease becoming socially operative communications without systems to enforce their ongoing circulation. The question of course remains how this can be achieved, and this is where the abstraction of system theory allows a decoupling of subjectivity from agency - observation and documentation can be undertaken by systems - subjects can be augmented by other systems.

One example of such an open and documented environment for acoustic systems research is found in the Center for Computer Research in Music and Acoustics at Stanford University. In particular, the online resources hosted by CCRMA, including the freely available *Planet CCRMA at Home* software repository and online learning materials ranging from DSP theory to code examples, offer an extended support network for both students at the institute and members of the general public. Likewise, the Institute of Electronic Music and Acoustics at the Graz University of Technology has for a number of years actively supported communities of producers beyond the institution through its provision of resources for the open source programming environment Pure Data.<sup>v</sup> These efforts are more than simple outreach. They provide both the structural and organizational means for a broader public to become involved in electronic music production and appreciation. Code is freely available, in both the computational and communicative sense, and public channels are made available for the dissemination of communications in a broader environment, hence maintaining at least the possibility for continued emergence of a functionally distinct, self-referential sub-system. Capra informs us that the "...pattern of organization ... common to all living systems ... is a network pattern. Whenever we encounter living systems—organisms, parts of organisms, or communities of organisms—we can observe that their components are arranged in a network fashion. Whenever we look at life, we look at networks." (82) Institutional programs coupled to non-institutional social networks via online interfaces instantiate the

networks of practice required to sustain "living practice." By networking acoustic practice in such an open environment, we contribute to the ongoing and sustained life of practices and practitioners in the acoustic arts, and hence aid the becoming of future acoustic artists.

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## Notes

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i There is always a danger in assimilating scientific ideas and terms in conjectural metaphysical or theoretical ventures, but as a preliminary investigation into the application of systems theory, we will have to content ourselves with raising the ire of Alan Sokal. At this time, a working approximation of the concept of autopoiesis should suffice.

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ii There is in fact both active research and historical precedent in this area. See Fink for a discussion of recombinant poetics in minimalist composition, Burroughs and Gysin for early textual practices, or Bill Seaman's writing, which outlines a recombinant poetics for intermedia composition. Finally, Johson-Eilola and Selber provide a pseudo textuality of functional differentiation along systems lines in their theory of textual assemblages, further opening interdisciplinary possibilities in the process.

iii Theory is counted here as the second practice.

iv An astute reader might rightfully ask what exactly is threatening the aforementioned life of practice. The recent Australian Research Council's 2009 ERA trial and results for the Humanities and Creative Arts in particular provide a clear indication of the diminishing trend in the strength of Australian art and practice based research. More generally, however, this paper is a reaction to the writer's perceived and experienced problems in encountering practice based research and the general field of academic writing interrogating this nexus. In short, the experience of and literature describing art practice as undertaken under the heading of academic research portends a foreboding set of challenges that systems theory may hope to resolve, however partially.

v The author's own work with online self publishing and internet-based documentation of acoustic art practice is available at <http://looplog.org>. It should be noted that the resources available at this site stand humble in comparison to the depth of resources provided by the two examples provided above.