

Noise in a Silent Field:

speculative engagement with noise in ecological contexts.

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Abstract

Through an epistemological association with ecology, biological philosophy and post-modern theory in general there exists the scope to re-examine the city soundscape and its inherent character of noise from alternate perspectives that incorporate noise as an element of ecological significance. This includes the theorization of alternate modes of listening relevant to differences in biological media. The following paper attempts to present the city soundscape and urban ecology as a field for speculative reasoning and constructive inquiry whilst simultaneously considering acoustic ecology as an ontological pursuit in its own right.

1 A Question of Ecologies

There is no question that ecology remains vitally important to the problems of our current epoch, and that envisioning of a post-modern condition beyond the problems of our present is inextricably linked to ecology. Frederick Ferré, cofounder of the Faculty of Environmental Ethics at the University of Georgia states:

Stressing complexities of relationships rather than simplicities in isolation, studying significant wholes rather than concentrating on parts, requiring long timespans rather than quick payoffs, necessitating interdisciplinarity and teamwork rather than specialization and competition, involving the human phenomenon (values and all) rather than isolating the knower and the known – these are some of the key features of ecology that mark it post-modern. (1996 p.312)

Yet, when approaching the question of urban dynamics, acoustic or otherwise, from an ecological viewpoint, one must ask a broader question – are urban systems capable of being adequately understood, theorised or even experienced from a purely ecological perspective? As the organisational operations of urban systems differ markedly from

those of living systems, does the direct representation of urban problems using ecological frameworks constitute an error in application? One of the specific concepts of ecology utilised within the literature of acoustic ecology is that of harmony or balance¹. For Frank B. Golley, such a conception of an ecosystem as balanced, or as having achieved a natural climactic state of harmony, is a mischaracterization.

Rather than equilibrium, this system is better described as a response system, that is in a dynamic relation with its environment. That state at any particular time is contingent upon its history and the environment ... Ecosystems are loose systems, we could call them weak wholes, as compared to a strong whole such as an individual or a city. (1993 p.195-96)

Whilst the problem of harmony is one example of applying ecological principles without adequate contextual reference, it is not presented to deny the possibility of using ecosystems as models for extracting ethical patterns of behaviour. More importantly, we clearly see the fission between the city and the ecosystem made apparent. Attempting to map the biological processes constituting ecosystems directly onto the mechanistic processes informing cities without a significant theory of translation commits a fundamental epistemological flaw. Ferré invokes “the hoary truism that one cannot derive prescriptive from purely descriptive statements” (p.302). This is in fact a major problem for acoustic ecology – ecology itself is largely a descriptive science whose results are then utilised by accompanying fields such as environmental management and conservation. Acoustic ecology, in its application to constructive fields of cultural production and theorisation creates a problem of affiliation and praxis. Is acoustic ecology a subset of the governing field of ecology, existing as a descriptive endeavour devoted to recording ecologically observed acoustic phenomena, or does it incorporate in its self definition a set of cultural

¹ See Wrightson for an example (2000).

praxis derived from its own observations? Finally, is acoustic ecology a field in its own right at all or a set of particular political motivations designed to generate inter-disciplinary dialog? Is acoustic ecology merely a rhetorical statement?

In order to answer this I find it helpful to conceive a type of diagram of the associated fields to discover if there are in fact grounds to generate a new discipline. Whilst the problem of exactly what defines a discipline is no doubt beyond the scope of the present paper such a diagram is still useful. We can consult Karlsson for a sufficient representation of such a diagram (2000, figure 3). Whilst for Karlsson ecology is placed at the periphery of soundscape studies in general, this still provides us with a general perspective with which to frame ecological acoustics. Hence, one can listen in ways other than framed as ecologically, and the city soundscape might best be served by an investigation of a mechanical rather than biological system for the proliferation and moderation of sounds. What this suggests is that acoustic ecology is not in fact a unified disciplinary approach to soundscape studies in general but more so a temporal interdisciplinary position emerging from these problems.

What does this mean for our current enquiry into urban acoustics and their relation to ecology? Here is where we employ a little theoretical license to posit a hypothesis. What this delineation of the field of acoustic ecology shows is that academically and institutionally speaking, it is more prudently pragmatic at this point in time to approach acoustic problems from a specifically grounded discipline than the other way around. In other words, the interests of sound are sublimated to interests of ecology, design, ethics, politics and aesthetics, at least rhetorically. For instance, for a soundscape artist to be adherent to the ideals of acoustic ecology one must first deprioritise the study of sound so as to not vulgarise these other fields and hence de-legitimate ones academic standing. Yet what is more interesting here is that through such a diagrammatic association, sound, whilst made passive, is privileged as the very agent of cohesion amongst these fields. Sound, through acoustic communication such as that occurring at this very conference, through acoustic cognition and the voice of the self, through acoustic identity and the knowing of one's place in the world, is the very structural and environmental foundation for knowledge itself. While the lexical content of knowledge in broader society may be primarily visually oriented, its transmission and cultural generation, modification and concretisation occurs according to principles generating from acoustics – feedback, resonance and dissonance, echo, harmony and signal to noise ratio are some examples of this. Further, the binary system underlying the global Internet is itself a machinic rhythm generator, a synthesis based on the oscillation of the simplest

materialist principle of presence and non-presence. Whilst the delivery of our media is one of predominantly visual bombardment (even radio tends to exist as advertising for images) the very bombers that carry this payload are supersonic frequencies. In short, sound, in the manner of material vibration, interpenetrates cognition and corporeality. The state of the global soundscape is something akin to a state of global corporeal intelligence – the dynamism underlying the two is one and the same. What one can observe in the city soundscape are the cognitive operations of an emerging machinic intelligence and also an inverse of the biological norm. The organism is growing inside out with its autopoietic unity exposed, its cognitive functioning laid bare for any willing and able to listen without being subsumed. Whilst the image interrogates imagination, the sound interrogates cognition and consciousness itself. Returning to ecology, I would argue that the global soundscape is something akin to the organismic level of compositional unity whilst the organismic level of sound generation is something best understood through the ecological model of acoustic interrelations. A collection of organisms in an environment, forming a culture, invariably produces something more aligned with an assemblage of ecological machinations.

We shall return to this metaphoric examination of cityscapes later. For now, we need to recognise a primary basis from which acoustic ecology seems to operate - that we can utilise some form of pre-human (or at least pre-industrial and hence prior to our current human condition) ecology whose acoustic properties should be used as the model for sound design. In other words, the human should be made to conform to the non-human. What this lacks is a formulation of human activity as an ongoing agent of sound production. It also fixes an understanding of ecology as pre-industrial environmental dynamics. In this regard however, acoustic ecology is about the active generation of the human soundscape, using as a model of composition some notion of a pre-human ecology of natural sounds. In other words it is an attempt at explaining the human perception, cognition or understanding of sounds in terms of a system of relations emerging from a non-human set of acoustic phenomena/conditions.

Clearly the question needs to be asked - why is this non-human/pre-human condition emphasised? Is it that the pre-human condition is that precisely responsible for the emergence of humanity and acoustic ecology is effectively mirroring a general trend of valorising birth over death, beginnings as positive, and endings as negative. Or is it merely that the prejudice inherent in considering the city and hence paradigmatically speaking, human soundscape as aesthetically tainted has brought the acoustic ecologist to dismiss human environments as a source

of acoustic design inspiration². Do we more simply desire the sounds of waterfalls or long for a pseudo biblical return to the Garden of Eden?

As a field of study acoustic ecology's strength lies in asking questions of a number of solidified fields that have not as yet identified the problems of sound to be important to their pursuits (the main question being – why aren't you listening, and if you are, why aren't you making observations about what you listen to?). To this extent, acoustic ecology also acts as a safe haven of sorts for those members of these parent fields who do take the problem of acoustic composition seriously but find little support in their respective disciplines. Yet acoustic ecology needs to be questioning which is more important: to advocate a return to some theoretical pre-modern environmental condition where everything was in harmonious unity or to interrogate the failure of modernity to improve the human condition from an acoustic perspective. Did earthquakes, meteorites, volcanoes, trees falling or bushfires not have unbalancing effects on the acoustic surroundings of their circumstance? After all, balance and harmony is arguably a condition observable only in the cognitive sphere retroactive in consideration of all elements comprising the circumstance of that instance of harmonic observation.

It remains then that that acoustic ecology is on the right track but needs to re-examine not whether it is interested in ecology but what notion of ecology it is interested in. Is there a model of biology or systems theory or dynamics that allows the interrogation of interrelations of organisms and their environment from an acoustic perspective but doesn't portray human activity as generally destructive? For instance one might take the view that the end result of all systemic activity is the trend towards entropy and hence read the drone of the city as systemic climax. Alternately, is the point precisely that we as humans are confined to the role of ecological vandals until we cease all noise producing activity and learn to merely sit still and listen.

2 The Adaptation of Listening

The point has been made that ecology as a field of study cannot incorporate the first person perspective inherent and necessary for a phenomenological examination of ecologically based acoustic

conditions.³ Whilst this is true to an extent it fails to consider the possibility that subjectified experiences - identity and inter-subjectivity - are themselves contingent to ecological and biological processes and that the peculiar process of listening can be biologically examined in a theoretical sense. In other words, the subjective experience of listening can be theorised through biology, but importantly, that biology itself can be opened to the subjective experience of listening.

Whilst acoustic ecology at times moves in the direction of being a representative political body or an organization of conservation activism, if one approaches acoustic ecology as a field of learning, and a direct ontological experiment, a further distinct possibility arises that places acoustic ecology as a vehicle to theorise and enact both a way of understanding our acoustic place and a method of directly approaching our lived experience in an acoustically constructive and cognitively incisive manner.

A most important point needs raising here; ecology in its epistemological makeup exhibits a tendency towards materialism, objectivism and positivism and more importantly of retaining the scientific observer in the role of objective observer⁴. The real challenge facing acoustic ecology is to find a model of observation that includes the observer in the ecological relationship being studied. If this is not done then acoustic ecology, both as a practice of enquiry and a direct ontology, fails to bridge the mind/body dualism as the standard relationship between organism and environment i.e.: mind as vehicle of observation, body as object of study. We can find a model of dualism navigation through circulation in the study of autopoiesis and the closely associated Santa Fe school of cognitive science⁵. The role of observer theorised therein offers a model for direct translation to our investigation of the listener/environment relationship and the ecology that constructs and informs this complexity.

The urban soundscape at this point provides us a coherent window to the consideration of the human role in specifying its biological medium. The city is the environment in and through which human endeavour is principally invested. The cityscape is not just a product of our thinking but an expression

² It should be noted that since the initial drafting of this paper further research has shown this be a simplified representation of Acoustic Ecology. I retain such characterisations to show that from an outsider's perspective such issues appear the primary concerns of acoustic ecology as initially encountered in literature.

³ See Johan Redström's paper from the Stockholm Conference, for instance (1998).

⁴ Although ecology includes the human organism as part of the ecological chain, it does not account for the performance of observation.

⁵ The associated studies of enactive cognitive science and the biology of cognition are formulated in separate fields but remain closely associated by conceptual similarities and a common scholar in Francisco J. Varela.

and extension of that thinking; it is the junction at which the natural intelligence of environment most coherently expresses our cultural and spatial embodiment of our cognitive understandings. Through the collective assemblage of our urban creationist project we can come closest to recognition of the complexity of ecological intelligence. The anthropocentric understanding of intelligence that guides these constructions, however, forbids the inverse understanding required to make such recognition. From within the machine, all aspects of the machine seem collated to functionally extend the machine but in a colonial sense (without the machine; the naturists retreat). The machine itself serves only to construct itself and to construct all else only in its understanding of itself. We shy away from notions of determined subjectivity - it is through subjectivity we define our power of creativity, our connection to life and a universal mechanics - yet we retain self-determination to enshrine the anthropological importance of our being. We are important because we are human and we are human because we are important. What is a way out of this self-valorising circularity if only for resisting exclusion of an other? We can utilise here a notion of acoustic ecology as a project of autopoietic listening - enactive listening to not just "our" environment but the manner in which we actively construct our world through cognitively observed phenomena such as sound events.

To continue this line of thought we need to diverge and provide explanation of the concept of autopoiesis and its general relation to ecology as a science of living systems. To thoroughly achieve this is beyond the scope of this paper. It is enough for now to state that autopoiesis (literally self-generation) is the precise quality of living systems that differentiates them from non-living systems. It is also precisely the biological concept to formulate a theory of translation between living systems such as ecosystems and non-living systems such as cities, and is therefore of great potential use to the concerns of acoustic ecology. By utilising the concept of autopoiesis to conduct a bio-centric re-evaluation of the field of acoustic ecology one can tie together biological, cognitive, literary (sound meaning through textual interpretation) and systems-based approaches to the same set of problems in a broad theory of spatio-acoustic aesthetics. This not only provides a bridge between disparate disciplines but also recognises a potential for synthesis of a new disciplinary approach to acoustic ecology in its own right.

It should be noted that what we have in autopoietic theory is a biological philosophy that takes count, amongst other things, of the capacity for linguistic behaviour by certain living systems; in other words, a biological interpretation of the anthropocentric experience of phenomena. Yet is the concept of the observer, so central to the Santa Fe

approach and autopoietic systems theory, congruent to any notion of the listener? Observing for Maturana and Varela is in fact the very act of differentiation, of generating and defining difference, between phenomena and the human perception of those phenomena (1980). Given that phenomena themselves cannot exist unmediated by human perception (unless they are taken to exist only as events of consciousness) observation becomes the inter-determination of a theory of unmediated phenomena with our perception of those phenomena. Observant listening in this sense becomes defined as a circularity encompassing the conscious perception of sound and the environment with and on which it is observed; the oscillation between the perceptual act of listening and the cognitive/linguistic act of theorising that which is listened to as independent to this perceptive act. An observant listener then must re-theorise the act of listening with each performance of that act.

In this regard, R. Murray Schafer is accurate in stating that the city soundscape diminishes our human listening potential in so far as its tendency to envelop reduces our capacity to consider that which is listened to as being independent of the listening act. In other words, observant listening as a capacity is abated in sound environments that encroach on a listener's ability to generate difference between their listening activities and the environment to which they listen (such as in very loud or acoustically intense situations). Oppressive listening environments are so as they in effect extend themselves into the autopoietic unity of the listener, disrupting the cognitive life of a listener by reducing the listener's ability to define itself as a separate living entity from its environment.

This overlooks one important point: that observant listening itself generates alienation from an environment by continually resurrecting difference to it. In the concept of structural coupling Maturana makes explicit the structural relations between observer and environment necessary for an organism to adapt to its environment⁶. By taking listening as an act of structural coupling, the process of observant listening is made intense - a tension established between listening as differentiation and listening as adaptation is established. The lo-fi soundscape may be said to inhibit a close knit structural coupling with a single sound and its source yet it does not prevent a broader coupling between listeners, sounds and the general processes of sound production, dissemination and utilisation enacted in the listener's environment. Structural coupling then is useful for the clarity with which it can reverse the structural significance of noise in an ecosystem. That is, noise must be seen not so much as a problem in so far as our individual response to it may be subjectively labelled as

⁶ Maturana and Varela 1988, p.xvi.

'dislike', or even a threat to the individual health of organisms. The problem arises when the changing structural characteristics of a biological medium (in this case the acoustic environment) outweigh the collective organismic capacity for adaptation to that environment. Whilst this might appear as merely a restatement of the notion that noise presents a threat to the health of ecosystems it is a restatement that permits the political inverse. In other words the problem can be further restated as a problem of achieving the structural plasticity of cognition such that our listening behaviour can be allowed to change with the structural characteristics of our changing listening environment. Hence, to what extent can existing noise practises be considered ecological adaptations to the structural mechanisation of our biological medium? From this perspective noise art can be seen as a practice of environmental becoming for the urban dweller as there is no opportunity given to observe the listening process: whilst immersed in a noise performance one simply cannot hear oneself think and must instead listen in continuity of the sound itself. It also points to the possibility that if natural ecosystems aid the becoming of natural beings then machinic ecosystems aid the becoming of machinic beings. In a sense the machinic environment requires a similarly machinic augmentation of being in order for evolution adequacy to be retained. What however would these altered structural couplings represent? They require us in effect to switch off our bodily capacity for listening and allow the environment to do it for us, through external recording apparatus. In this way, observant listening is still possible, but only via a double mediation. This listening to an other's act of listening introduces a subsequent latency between the act of sounding and the act of listening: improvisation becomes eliminated as long as the distance between the mechanism of listening and the biological site of observation prohibits the simultaneous observation and performance of composition. The urban environment alienates human perceptual mechanisms (our biological mediators of environment) by having its own mechanisms for perception placed between our perception of phenomena and the phenomena themselves. This can be taken as either the reduction of the human capacity for spontaneous action or, interestingly, as the magnification of the mechanical environment's capacity to act as autopoietic unity and hence cognitive organism. If the city is accepted as an exposed organismic unity, the individual exists as an agency of migration of biomass, and the conglomeration of the city becomes a multiplicity of migrations from a microscopic to a macroscopic level. If bacteria could hear it is doubtless the sound of the large bodied multicellular organism would be a deafening environment.

3 A Return to Personality

I shall now return to the problem of negotiating my personal experience of sound within the scope of extant methods of acoustic ecology. In particular, I wish to examine a difference between what I perceive as the focus of Acoustic Ecology and my personal experience of being an inner city dweller. This then leaves me with a puzzle. I feel compelled by the literature of acoustic ecology to think of the sounds of the city as ugly, of the urban listening experience as somehow impoverished. At the same time, my personal ethical predispositions coupled with my personal experiences of sound compel me to disagree. Whilst the urban soundscape is certainly different to a rural or arguably largely imagined pre-modern soundscape, I find the value judgements inherent to an assumption of superiority of one over the other to be a retreat to prejudicial dualism. I will admit it plainly – I generally enjoy the city soundscape. Is my listening experience wrong? Am I a poor acoustic ecologist? Is my acoustic health so severely deteriorated by my city experiences that I am unable to make sound judgements on the issue?⁷ What I think needs to be emphasised is the personal capacity to choose a path, to purposefully variate ones range of listening experiences. To this extent I write from a position of privilege in that I have the freedom of both urban and rural travel at my disposal. I am not, for instance, prepared to desire the advantages of mechanisation without admitting to its acoustic consequences. Our human biosphere, by due of its population concentrations, geographical dispersion and ecological requirements for dynamic response ability, requires that the biological be supplemented by an other. This other has become the electromechanical appendage and control of biomass circulation.

Yet my personal objections to acoustic classification do not form a representation of personal acoustic experiences. Here it is indeed still necessary to return to applying basic ecological principles to acoustic events in a way exemplified by the pursuits of acoustic ecology. The contradiction is duly noted, as I have spent a considerable effort in this paper thus far to problematise the traditions of acoustic ecology as they stand only to now embrace them. It is with great humility that I suggest that all enterprise require a starting point and that all of us would do well to embrace John Cage when he states, "start from scratch" (Morábito 1999)!

As stated previously, I come to acoustic ecology from an outside perspective and as such try to understand the pursuits of the project through practical experience garnered from external fields. It is almost automatic, therefore, that when I encounter

⁷ Certainly, at times I find my satisfying experience of extractor fans to be a little strange!

a concept such as Schafer's sound imperialism that I contextually place it within other theories to which I have been exposed (1977). To this extent, the concept resonates strongly with that of Gilles Deleuze and Felix Guattari's use of territorialisation and deterritorialisation (1987). I find it similarly useful to adopt other elements of the schizo-analytic lexicon contained in this work. For instance, the suburban streets of many districts of Perth and no doubt numerous post industrial cities have their night time rest punctuated by the ritualistic marking of territory – the young in street machines routinely burning rubber in a blending of throaty V8's and squealing tyres. To define personal territory in a technologically mediated expression of character and personality, many go to great length to find that elusive tone of combustion and mechanics. Witness even the purchase of exhaust systems designed specifically to enhance the acoustic depth and interestingly the organic qualities of the machines. The cybernetic ideal is evident in this extension of corporeality, this expression of territorial ambition through technically augmented biology. The fact that this noise practice is a disturbance of the peace for the sleeping and resting workaday commuters takes nothing from the ecological significance of the activity. For many these rituals and biomechanical couplings form parts of coming of age routines, and can even be construed as demonstrations of sexual capability to potential mates. It is of course easy to be facetious about this and get carried away, but the significance should nonetheless be duly noted as an example of noise serving a useful ecological function to some parts of an ecosystem whilst being a competitive disadvantage to other organisms.

Note also that the increasing shift from rural settlement to the urban has created an aural vacuum; the din of the city concentrates, the still of the rural multiplies of course only at night, when the mechanics of agriculture lie dormant. Yet such a representation of acoustic dynamics slips back to an apparent polarisation – silence, calm and stillness become associated with non-human landscape features, noise as the necessary result of human activity. It is only when we permit the machine as part of the biosphere that we hear noise for what it is – the performance of biological mechanisation. The alarm clock has replaced the rising sun in darkened habitats; a corporeal sense impression has become an acoustic one. At this point the habitual migration of the worker begins across vast tracts of land impassable in a day by foot but navigated rapidly by extensions of feet. Traffic as the sound of migration, signals the quickening of pulse of the urban organism, the waking of the machine. The punctuations in traffic noise by a police siren here, a fire engine there and now an ambulance bring news of disaster, of law-breaking and the frequency of these punctuations tell us of good days and bad days. The sound of a near-by traffic accident summons

onlookers like members of a herd inspecting the carnage of a kill from a safe distance.

It is similarly intriguing to note the sound rhythms imposed on the urban dweller by the institutes of childhood education. The school siren has replaced the church bell as the punctuator of the suburban village. It in many ways begins the early programming of our body clocks for the working day, and the school siren can heard resounding through the suburb at numerous intervals throughout the day. Again the theme of migration emerges in the mass exodus from the urban to the rural that occurs in the school vacation period. One can note the tendrils of the city extending along 'lines of flight' into popular vacation spots throughout the country (Deleuze and Guattari 1987). Small towns expand and become acoustic replicants of urban din as noise herds of family 4wds loaded with hi tech noise making gadgets make annual pilgrimages in the ironic search for a little peace and quiet. Of course if this were the real purpose of the trip then like any wise traveller these temporary nomads would choose out of the way locations and probably leave the kids behind – in actuality it seems all to be a parade, a travelling sideshow of performing families each intent on asserting its own unique territorial sound mark on the landscape. The calendar is dotted with similar noise migrations; alterations in the standard traffic cycles of day-to-day transportation and rituals of territory. In the same way that the seasonal emergence of a particular species fluctuates with its mating veracity and hence the frequency of its calls, these urban fluctuations belie an implicit political and cultural purpose. Not only do these nomads serve as an advertisement for the sensual and perceptive intensity of the city, an attempt to encourage rural dwellers to migrate and experience what all the fuss is about, they carry with them potential defectors, those who view the pandemonium with dread and hence seek out an aural peace in their time in the country. These lines of flight are primary routes of the transference of noise making practices, and specifically, one could no doubt trace the transferral of vernaculars and peculiar speech patterns between rural and urban children who seem to have a far more natural tendency for lingual experimentation.

Retaining the ecological imperative, it is in the work of Manuel DeLanda we find a tracing of the homogenous character of European urban ecologies through a network of inter-institutional and politically determined processes. For DeLanda, the urban ecology is characterised as a control system for the flows of biomass that characterise ecosystems in general. As such, recognition of the link between noise and power is only one part of a much larger problem – that noise itself is institutionally bound and hence ecologically significant. Noise habits in themselves cannot be broached as merely a problem of design and need be taken in respect to their

generating activities of economics as well as their sociological and political functions. It is not improbable to argue that noise and the freedom from noise is a specific socio-economic privilege in a technocratic urban soundscape. If the association between silence and ability for contemplation holds true, then noise serves as a tangible economic barrier of entry to those who cannot afford the silence of deep reflection. Silence remains a highly valued organic refinery utilised by the privileged for the capacity to reflect on the knowledge mined from raw sound. As such, the functionality of noise is in itself secondary to the functionality of the processes of control underpinning its creation. Again, one can further speculate that the process of urbanisation is part of a general trend of entropy towards the unification of biomass and inorganic matter – of cybernetic becoming. DeLanda argues that the same matter-energy flows underlying inorganic material transformations in the environment also drive the permutations of biomass generating ecosystems. A desire for ecological integration runs along the same lines of transformation as a push towards inorganic becoming. As such, urbanisation is merely the continuation of entropy as the end point of universal evolution – that all matter tends to verge and the probability of difference decreases over the broader time period whilst still permitting synchronic increases and decreases in the pull towards homogenisation and the push away towards heterogeneity and diversification. Perhaps the challenge is to latch on to these cycles of change at points of systemic instability in an effort to direct cybernetic becoming in an acoustically harmonious manner.

4 Soundscape Reintegration

Such can be the negative direction to which industrialisation points – the colonisation of bodily activity by mechanisms of work. It would not be humane however to merely advocate a kind of technocratic determinism about entropy. It is enough for now to say that our capacity to direct short-term change is ever more powerful than that over longer terms. As stated previously, postmodernists such as Ferré have recognised the current necessity to move from a modern way of life, and its inherent practices of environmental manipulation and resource exploitation, to something beyond or away from the modern whilst simultaneously embodying some of the apparently lost values of the past – community cohesiveness, spiritual becoming and universal perspective. Yet we should be careful in what we ask for – a longing for something post industrial and post modern should not be interpreted as a longing for a return to the pre modern. One can further speculate on Ferré's expansion of ecology into greater facets of human constructivism to envisage greater possibilities for an acoustically considered future

balanced within the constraints of biospheric continuity. Convergence remains an important step in returning response ability to the acoustic ecology of biomechanical couplings evident in mass populations. Whilst capital rationalism invokes convergence as a means of homogeneity through difference reduction, one can also think of convergence in a way that gives mechanical apparatus biological autonomy in their own right. By producing machines which do not possess the capacity for self maintenance we have produced machines that are part of a vast inverted organism, and the cacophony of material flows within the industrial soundscape are in fact a direct result of the scattering and subsequent mechanical rendition of activities that an autonomous system must carry out in order to maintain its internal integrity. Organismic capacities have been observed and recreated, but in the process they have been disintegrated from the biological context of observation – the organism – to form economically related functions that are also vast noise producing clusters. If the sounds of noise are the sounds of biological disintegration they also the sounds of our attempts at biological reintegration with the dust and earth from which we have sprung; to recreate human ecosystems in the image of the stone and the mountain and hence resist decay and change so much longer than the decay of our fragile biology.

In the face of a potentially bleak acoustic future we can find direction in a final question. How do we engage in the kind of enactive observant listening which is in itself the spontaneous operations of observations of composition and the performance of those observations, and do so in a manner necessary for the recognition of biological unity conducive to ongoing life?

Soundscapes can be invoked here as a direct experiential phenomenon to supplement the lo-fi cityscape presented by Schafer with that of a simulated hi-fi listening environment – an environment in which to exercise experimental listening in such a way that the listener can challenge their process of aural cognition – a space for aural cognitive theorisation and the development of deeper listener awareness. This distances the task of soundscape composition from one of representation to one of enactive acoustic ecology simulation; a context in which the observant listener is explicitly implicated and their performance as such is specifically challenged. Recording events as ecologies without taking into account the relations that produce those events actually idealises and objectifies ecological phenomena in way that contradicts the dynamics oriented focus of ecology studies. As Hildegard Westerkamp makes clear, in any recorded soundscape, 'the original relationships between ear, sound and environment no longer exist'. As such, the informational significance and perceptive importance to the observant listener of

soundscape composition is to be found in a translation of relations between observed ecological acoustic phenomena and represented aesthetic acoustic structures. The art of soundscapes emerges as an activity of theoretical design with which to look forward: a procedure for experimenting with microcosmic metonyms of ecological acoustics that seek to balance the artificial and the natural towards such an ideal. The concepts of autopoiesis, structural coupling, machinic autonomy and living systems presented in the biology of cognition outlined by Maturana and Varela provide a specific structural framework that lends itself readily to aesthetic usage⁸. This remains the task at large. The challenge also remains to avoid becoming dogmatic in either direction of essentialism or nihilism with regard to the human condition. This means for instance, not just the emphasis on a human ontology equitable to all living things but equally the cessation of the emphasis of a life over death, rural over urban, body over mind or natural over human set of dualities.

References

- DeLanda, M. 1997. *A Thousand Years of Nonlinear History*. New York: Zone Books.
- Deleuze, G., and Guattari, F. 1987. *A Thousand Plateaus: capitalism and schizophrenia*. Minneapolis: University of Minneapolis Press.
- Ferré, F. 1996. *Being and Value: Toward a Constructive Postmodern Metaphysics*. New York: SUNY Press.
- Golley, F.B. 1993. *A History of the Ecosystem Concept in Ecology: More than the Sum of its Parts*. New Haven & London: Yale University Press.
- Karlsson, H. 2000. 'The Acoustic Environment as a Public Domain'. *Soundscape* 1(2): 10-13.
- Maturana, H.R., and Varela, F.J. 1980. *Autopoiesis and Cognition: The Realization of the Living*. Dordrecht, Holland: D.Reidel Publishing Company.
- Morábito, F. 1999. *Toolbox*. New York: Bloomsbury Publishing.
- Redström, J. 1998. 'Is Acoustic Ecology About Ecology? - Reflections on the International Conference on Acoustic Ecology "Stockholm, Hey Listen!" 1998' [online]. Available: <http://www.viktoria.se/groups/play/publications/1998/ecology.pdf> [2003, February 3].
- Udwin, V. 1991. 'Autopoiesis and Poetics', in *Textuality and Subjectivity: Essays on Language and Being*. ed. Timm, E., Mendoza, K., and Gown, D. Columbia: Camden House.
- Schafer, R.M. 1977. *The Soundscape: Our sonic Environment and The Tuning of the World*. Rochester, Vermont: Destiny Books.
- Westerkamp, H. 2000. 'The Local and Global "Language" of Environmental Sound' [online]. Available: <http://www.sfu.ca/~westerka/writings/localglobal.html> [2003, February 3].
- Wrightson, K. 2000. 'An Introduction to Acoustic Ecology'. *Soundscape* 1(1): 10-13.

⁸ For an example of this see Udwin (1991).