

Chapter 1. Emergence of the Post-Human Aesthetic in Electro-Acoustic Music

Technology is no longer surprising. In fact, it is quite often that the opposite is true: it is almost expected, and the lack of technology is what we find surprising, strange, and perhaps even uncivilized. Things and beings that do not interact with some form of machine seem to be disconnected from the larger world around them, detached, unreachable, and aged. Because of the perceived strangeness of things lacking technology we sometimes attempt to find ways to introduce the two. With each new introduction the reach of the technological expands while it evolves new capabilities and processes in ways that parallel our own methods of learning and understanding, allowing technology to become more and more interactive and intuitive rather than simply obedient and subordinate.

It is because of these new reaches, processes and capabilities, according to R.L. Rutsky, that the technological has become “too large, too complex, too uncontrollable” to be seen as subordinate to humanity, releasing the machine into a more autonomous existence (Rutsky 1999, 103). However, this autonomy does not overshadow the necessarily symbiotic nature of the relationship between the two and the mutual need of the other to ensure existence.

The symbiosis of these autonomous beings ultimately gives rise to the post-human: an existence where humans and technology are seen as continuous extensions of each other, a sort of electronic prosthesis, rather than as oppositional and conflicting forces (Huginin 2000, 251). The collaboration that takes place allows each entity the opportunity to extend abilities and perceptions; expanding the capabilities of each beyond

what is otherwise possible through the mechanical extension of the human and the human extension of the electronic.

As with other types of prosthetics, electronic extensions can be perceived as strange, inhuman, and distracting, drawing attention to the mechanical equipment itself and away from the being it is a part of. The presumed unnaturalness of these extensions has given rise to a post-human aesthetic where the technological portions of the human/machine collaboration are made to be as invisible as possible, unless drawing attention to them for specific reasons, while using their processes to extend our abilities or ourselves. With that in mind, we arrive at a post-human existence where the “exterior” is minimal and sleek while the “interior” and its functions are complex, unknown and uncontrollable (Rutsky, 110).

The Post-human Musical Aesthetic

The emergence of post-human aspects in electro-acoustic music is wide-ranging and varied in presence; it is hard to imagine a musical process that is completely void of electro-mechanical influence whether in writing, performance, recording, or distribution. It is a perspective of music where the human and technology aspects are seen as “contiguous, rather than opposed” and evolving together (Huginin, 249), but, as noted above, where the technology is as unobtrusive as possible. Pierre Schaeffer highlighted this idea in 1972 by noting “one can say that sounds...only carry aesthetic significance when they become sufficiently familiar so that the technical aspect of the production of their message is ignored,” or hidden, and the message itself becomes the focus (Malina and Schaeffer 1972, 256).

As with any extension, questions of benefit and detriment of the technological presence in music are widespread. As Rutsky notes, “technology – or some aspect of it – is either celebrated or decried, cast as utopian or dystopian” (Rutsky, 2). This is true of the post-human aesthetic as well, as many decry electro-acoustic music as inhuman and devoid of emotion or celebrate it as something of perfection. Surely there are both positives and negatives to the relationship between human and machine.

Instead of this celebration or fear, an awareness of these aspects of post-humanity and how we use them in our musical processes can shed light on the positives and negatives of this relationship and can guide our creative and listening choices. As Hugunin says, “becoming post-human need not result in a wasting away of our humanity” as we try to explore and understand our own “interfacing with machines” (Hugunin, 251). Many of the benefits of this symbiosis allow for the creation and expression of sounds and musics otherwise undiscovered and unexplored. These new and unexpected aural experiences can shine a different light on the world we live in, helping us to see things in new ways, including ourselves as human beings and the powerful, sometimes unnoticed technology we work with.

Emergence of the Post-human in Musical Processes

Electro-acoustic music and its processes can serve as a way to explore the post-human existence and its aesthetic. As a fulfillment, through various interactions between human and machine in the creation, performance and reception of electro-acoustic pieces, we are able to extend our abilities and perceptions in ways not otherwise possible. Where this fulfillment is not an actuality, it can also serve as a representation through various

relationships within the musical structure of each piece as musician, machine, and aural experience interact.

The Post-human in the Compositional Process

The collaboration between musician and computer in the compositional process provides us with an embodiment of the post-human aesthetic in electro-acoustic music. In this stage, interaction happens when the composer allows the machine to function autonomously and is able to cooperate and react to what is produced rather than to assume a role of authority and control over the machine as a tool. Hugunin argues that this level of interaction “results in ‘emergence’ whereby surprising and unaccounted-for properties arise and develop in ways not anticipated” (Hugunin, 249). This collaboration provides the post-human with its symbiotic relationship, which ultimately allows the emergence of these aesthetic properties and developments.

Emergence takes place in several ways here. Relationally, composer and machine become codependent on each other in an effort to create otherwise unobtainable results. Aurally, unexpected sounds can be discovered or created and used through effects and manipulations while hidden properties of the audio material are extracted, isolated, erased, and arranged. Aesthetically, the software being used hides the complexities of programming and algorithms that affect the audio being used while sleek plastic boxes hide the wiring and circuitry.

The Post-human in the Performance Process

“Computers are deterministic, but they can simulate arbitrary choices...enhancing this effect, the artworks...intermix computational devices with human agency and random generation either at the initial

stage or during the computational event itself. The artist or random generator produces ideas, making use of at least some initial constraints. The outcome, however, calls for revision or elaboration by both machine and [human] intervention...” (Huginin, 251).

On the stage, much of what applies to the post-human composer also applies to the performer, though the end goal is not in the creation but in the performance or improvisation of composed works and the extension of performance abilities. As noted in the quote above, it is the collaboration and elaboration by both machine and human that creates the post-human performance aesthetic where each is required to respond and react to the other.

One of the most notable examples of the post-human performer is Haile, the robotic drummer developed at the Georgia Institute of Technology:

“Haile is a robotic percussionist that can listen to live players, analyze their music in real-time, and use the product of this analysis to play back in an improvisational manner. It is designed to combine the benefits of computational power and algorithmic music with the richness, visual interactivity, and expression of acoustic playing. We believe that when collaborating with live players, Haile can facilitate a musical experience that is not possible by any other means, inspiring players to interact with it in novel expressive manners, which leads to novel musical outcomes.” (Weinberg and Driscoll 2008).

If the idea behind the human/machine collaboration is extension, then it is here that the post-human aesthetic emerges in the performance setting. Aurally and developmentally this chain of events, at least theoretically, can continue to evolve and modulate musical creation and ability perpetually, allowing innumerable possibilities for progress and growth. Physically, the extension is made through microphones that are used to listen to the human performance while beings are interfaced through wires to a computer, creating a singular, prosthetically enhanced performer.

The Post-human in the Perception Process

The perception of electro-acoustic music compositions is, perhaps, where the representation, and not the fulfillment, of the post-human aesthetic is the strongest. Rather than focusing on the interaction between human and machine – which here would be loudspeakers and audience – we are focusing on the difference of and interaction between the electronic and the acoustic portions of the music and the perception and identification of musical structure and aural effects.

With technology it is possible to create the perception of musical effects not otherwise achievable: a sustained piano chord crescendo, a violin solo that accompanies itself, the meltdown and transformation of the human voice, a sense of changing physical space through reverberation effects, etc. Though these techniques are not the actual extension of technical playing ability or the size and shape of physical presence, they do hint at the idea of the post-human aesthetic through allusion and metaphor; while we may know that these things are not technically possible, technology creates the perception of these extended abilities and modulations.

If the focus during the perception processes is on the musical structures and aural experiences, then it is during musical perception that the post-human aesthetic can reach its climax. Unless the composer decides to affect the audio material in a way that overtly draws attention to the mechanical aspects of its expression, the presence of the machine may be completely hidden or disguised, allowing the message to focus on something other than the machine itself. Also, though we know that certain musical shapes and movements are technically “impossible”, we may be more willing to accept them as

realities since we are hearing and experiencing them. This extension of experienced reality is the ultimate expression of the post-human aesthetic.

Challenges of the Post-Human Aesthetic

Whatever role technology has in electro-acoustic musical processes, some scholars perceive that we have reached a point where we are working more as interactive collaborators rather than as master with tool. Post-human aesthetics are reached because of the combination of ubiquity and power that technology possesses in our world today and the amount of influence it carries by causing us to react, rather than to simply act, during the creation, performance, and perception of electro-acoustic music. Though each of these processes contain aspects of the post-human aesthetic to varying degrees of fulfillment or representation, each moment of collaboration, good or bad, points towards its presence in electro-acoustic music.

Ultimately, the challenges of the post-human musical aesthetic are the same as any musical utterance – those of expression, cohesion, complexity, artistry, and emotion. It is easy to cast out these possibilities when dealing with electronic mediums because they can often seem so deficient of humanity and its spirit. However, when the machine becomes more than just a “passive channel” for human expression but a way to find and experience new expressions they can be responsible to drawing out new ideas, possibilities, and expressions of emotion that the artist was otherwise unaware of (Jorda 2007, 105). As Nick Collins notes,

“It is helpful to remember that all [electronic] systems are devised and built by humans, so even if their creators defer real-time interaction to their creations, these systems are not devoid of human spirit; they show

exactly those assumptions that their makers have managed to program into them” (Collins 2007, 173).

Along with the possibilities in the post-human aesthetic come threats, many of which can cause us to see and portray things in a false light, either intentionally or unintentionally, and can give us expectations of the human that are unattainable. Technology can certainly become somewhat dangerous by creating a sense of a “perfect” human where one does not exist. This ultimately gives an artist and their audience unachievable expectations – in essence causing them to attempt a simulation, in live performance, of a digitally perfected work – essentially degrading the abilities that are present and masking the ones that are not.

This danger may lie in the mechanical minimization aspect of the post-human aesthetic. Prosthetics of any sort are often seen as strange and grotesque extensions of the human and, because of this, we find it necessary to hide their presence in an effort to produce a seemingly more beautiful or natural reality. In music, the use of the mechanical can seem strange and grotesque if not well hidden or, at least, used for artistic purposes. This becomes obvious when an aspect of the technological is not available during live performance when it was used in production and the sense of a more beautiful reality is unreachable.

This seems to be where humanity is lost. By creating a sense of a perfect human, we lose the realities of the very things that make us individual and, in my opinion, interesting human beings. If everybody becomes a perfected human being, in the sense of having a popularly accepted aesthetic beauty, then we lose any sense of individual

identity, expression, experience, or acceptance and force ourselves to accept a false expectation for our own individuality.

Conclusion

Rather than decrying or celebrating the fusion of technology, humanity, and music as either inhuman or perfect, the post-human aesthetic in electro-acoustic music simply reflects the use of technology in other aspects of our world; most certainly in the business world and, increasingly, in the social world. As with any other interaction, not limited to technological interaction, it carries the possibility to either dehumanize our existence through the repression and abuse of individuality or to lift up the vitality of our spirits through expression and growth.

It is up to the electro-acoustic composer to interact with and, most certainly, to listen to the products of these interactions and to decide how it is they want to use these extensions. In my own compositions, I work with these technologies in an effort to speak while exploring the ubiquity of technology and its power in our society today. Hopefully in the process I can utter some form of truth and attempt to re-humanize people who have been dehumanized, whatever the force that causes that brutality.

Works Cited

- Adorno, Theodor W. 2004. *Philosophy of modern music*. Trans. Anne G. Mitchell and Wesley V. Blomster. New York: Continuum.
- Agran, Rick. 1997. Black umbrellas. In *Crow milk: poems*. Durham, N.H.: Oyster River Press.
- Brett, J. Thomas. 2006. Minds and machines: creativity, technology and the posthuman in electronic musical idioms. PhD diss., New York University. In ProQuest Dissertations and Thesis.
<http://teach.belmont.edu:2053/pqdweb?did=1095447331&sid=1&Fmt=2&clientId=72&RQT=309&VName=PQD> (accessed October 13, 2008).
- Collins, Nick. 2007. Musical robots and listening machines. In *The cambridge companion to electronic music*, ed. Nick Collins and Julio d'Escrivan, 171-184. New York: Cambridge University Press.
- Cox, Christoph, and Daniel Warner. 2004. *Audio culture: readings in modern music*. New York: Continuum.
- Doenges, Aaron H. 2008. Steve Reich's *Different trains: I. America before the war*. Masters paper, Belmont University.
- Duckworth, William. 1995. *Talking music: conversations with John Cage, Philip Glass, Laurie Anderson, and five generations of american experimental composers*. New York: Schirmer Books.
- Hayles, N. Katherine. 1999. *How we became posthuman: virtual bodies in cybernetics, literature, and informatics*. Chicago, Ill: University of Chicago Press.

- Hugunin, James R. 2000. in: Formation: the aesthetic use of machinic beings. *Leonardo* 33, no. 4: 249-261. <http://www.jstor.org/stable/1576895> (accessed June 11, 2008).
- Jorda, Sergi. 2007. Interactivity and live computer music. In *The cambridge companion to electronic music*, ed. Nick Collins and Julio d'Escrivan, 89-106. New York: Cambridge University Press.
- Kennedy, X. J. 2002. Pie. In *The lords of misrule: poems, 1992-2001*. Baltimore: Johns Hopkins University Press.
- Kerouac, Jack. 1972. *Visions of Cody*. Middlesex, England: Penguin Books.
- Licata, Thomas. 2002. *Electroacoustic music: analytical perspectives*. Contributions to the study of music and dance, no. 63. Westport, Conn: Greenwood Press.
- Malina, Frank J and Pierre Schaeffer. 1972. A Conversation on concrete music and kinetic art. *Leonardo* 5, no. 3 (Summer): 255 – 260. <http://www.jstor.org/stable/1572388> (accessed September 6, 2008).
- Ostertag, Bob. 2002. Human bodies, computer music. *Leonardo* 12: 11-14. <http://www.jstor.org/stable/1513343> (accessed September 13, 2008).
- Rutsky, R. L. 1999. *High technē: art and technology from the machine aesthetic to the posthuman*. Electronic mediations, v. 2. Minneapolis, MN: University of Minnesota Press.
- Varese, Edgard. 1936-1962. The Liberation of sound. In *Audio culture: readings in modern music*, ed. Christoph Cox and Daniel Warner, 17-21. New York: Continuum.
- Weinberg, Gil, and Scott Driscoll. Georgia tech center for music technology: Gil Weinberg: Haile. Georgia Institute of Technology. <http://www.cc.gatech.edu/~gilwein/Haile.htm> (accessed January 3, 2009).

Discography

Aphex Twin. 2006. *Chosen lords*. London: Rephlex. CAT 173 CD. CD.

Besharse, Kari. 2005. *Ear to the ground*. Mp3 file.
<http://140.254.3.56/scimp3/karibesharse3.mp3> (Accessed September 22, 2008).

Boards of Canada. 2002. *Geogaddi*. London: Warp Records. WARPCD101. CD.

Books, The. 2003. *The lemon of pink*. Germany: Tomlab. Tom 32. CD.

Doenges, Aaron Hoke. 2008. *Lude: to war*. Mp3 file.
<http://www.aaronhokedoenges.com/noises.html> (accessed December 15, 2008).

Doenges, Aaron Hoke. 2009. *Pop: the bubble wrap*. Mp3 file. Special collections, Aaron Doenges. Nashville, Tennessee.

Dzubay, David. 2004. *HyPER MIX*. Mp3 file.
http://www.music.indiana.edu/mp3/Composition_Department/David%20Dzubay/HyPER%20MIX/ (accessed August 3, 2008).

Harchanko, Joseph Edward. Date unknown. *Breath*. Mp3 file.
<http://www.wou.edu/~harchanj/works.htm> (Accessed September 22, 3008).

Harrison, Jonty. 1996. *Articles indéfinis*. Montréal, Québec: Empreintes DIGITALes. IMED 9627. CD.

Harrison, Jonty. 2000. *Evidence matérielle*. Montréal, Québec: Empreintes DIGITALes. IMED 0052. CD.

- Haas, Jeffrey. 1996. *All the bells and whistles*. Mp3 file.
<http://www.music.indiana.edu/department/composition/Recordings/Hass/bells.shtml> (accessed August 3, 2008)
- Haas, Jeffrey. 2005. *Symphony with electronics*. Mp3 file.
<http://www.music.indiana.edu/department/composition/Recordings/Hass/symphony.shtml> (accessed August 3, 2008)
- Reich, Steve. 1989. *Different trains*. San Francisco: Russian Hill Recording. 979 176-2. CD.
- Schaeffer, Pierre. 1998. *L'oeuvre musicale*. Paris: INA-GRM. na c 1006-07-08 cd. CD.
- Varèse, Edgard, Wen-Chung Chou, Riccardo Chailly, Sarah Leonard, Mireille Delunsch, François Kerdoncuff, Kevin Deas, and Jacques Zoon. 1998. *The complete works*. London: London Classics. 289 460 208-2. CD.