REVERSE PRACTICE AS TECHNOLOGICALLY CONSTITUTED CRITICAL AFORMALISM IN FOWLER AND YOUNGS’ ‘STRATEGIES’
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“A. TECHNOLOGY VS. MEANING

“In spectromorphological thinking we must try to ignore the electroacoustic and computer technology used in the music’s making. Ideally the technology should be transparent […]”

Denis Smalley, 1997.

What is a transparent technology? If we think of the condition of transparency as that which lets light pass through without changing it, what might transparency mean when it comes to technology? For Smalley a transparent technology is one that enables meaning to travel through it - unchanged, like light through a hypothetically perfect lens. For me the correlation between meaning and light present in spiritual or religious discourse: light as symbolic of salvation, the soul, or the divine creator.

Smalley (following Schaeffer I think) believes that there are different kinds of listening. Schaeffer divided listening into 3 types: causal, listening to the music’s cause; semantic, listening to its meaning; and reduced, listening to the music in itself. To these three Smalley adds technological listening, a kind of variation on causal listening. He argues that technological listening happens “when a listener ‘perceives’ the technology or technique behind the music rather than the music itself, perhaps to such an extent that true musical meaning is blocked”. There are a few things going on in Smalley’s argument that I want to draw attention to: (1) the reference to background (technology) and thus an unstated foreground (mu-sic/meaning); (2) a thing called music “itself”, asserting a theoretical distinction between it and technology; (3) the belief that technology can block, i.e. has a potential opacity that is in opposition to an ideal transparency; and finally (4) that music has a “true” meaning.

According to this account, technology is a carrier of musical meaning and ideally it does not change that meaning as it passes from the author to the listener and, if so, it remains true. I feel that this account parallels some religious discourse... Asserting that the soul is that which is essential to our self and is readily separable from the body, an opposition haunts our particular Western folklore. If we go back a few centuries Descartes’s distrust of the body clearly anticipates Smalley’s contemporary misgivings about technology. For Descartes the self is composed of pure thought. The body, although intertwined with the mind, should ideally be entirely disregarded. Like technology it is something that only ever gets in the way.

Of particular interest for me is Smalley’s suggestion that spectromorphological music has a “true” meaning that can be “blocked” if the listener focuses on the means of production. Shannon and Weaver’s classic model of communication (published in 1948) pre-empts Smalley; here technology (the means of communication) is only included as a potential noise source. According to their model, technology is at best imperceptible, and if it is present at all it is necessarily problematic rather than productive.

When I hear these kinds of arguments, I am always a little bit (actually very) confused, because from my point of view most of my favourite music has an inherent and inseparable re-relationship to the thing that produced it: the piano, for example, is very present in most piano music that I can think of; the tabla in Indian classical music; the use of tape delay in some forms of music production; the sampler on early forms of hip hop; and so on... And, what’s more, I really like these things. I like for example that the sampler, when sequenced and played, makes a sound that is typically the kind of thing a sampler does. Remember IOU by Freez (1983) mixed by Arthur Baker? Those orchestral stabs at the beginning were clearly made with a sampler and are not a recording of an actual orchestra playing those notes; and, at 3mins 5seconds in, those vocal sequences were obviously done on a sampler doing something that samplers make easy: i.e. playing a short snippet of sound faster or slower over a keyboard. For me, the foregrounding of those technical features (piano, tabla, tape, sampler, etc.) do not block the meaning of the music, they add to its meaning.

I like that the sampler is clearly present in sample-based music, and most of my fellow music producers would agree. So why is it that those same producers complain about the tendency of fans who “just want to talk about what software is used rather than the music itself”... Their complaint echoing Smalley’s aversion to technological listening? Perhaps it is in part because the habits we use when we speak about music divide music (in essence) from the technological tools inherent in its making. Think of Alvin Lucier’s seminal work I am sitting in a room (1969). Here a voice is recorded in a space, and then repeatedly played back and rerecorded in the space. It is suggested that the acoustic character of the space is amplified until the voice becomes an indeterminate resonant band that corresponds to the resonance of the space. In any discussions I have encountered about this piece, and in the bits of critical writing that I have read, no one has ever acknowledged the function of the equipment used in that recording. No one has ever mentioned that the tape itself has a dramatic effect on the quality and tonality of the recording, or that the same is true of the microphone and speaker. In fact it would be useful to restage Lucier’s piece in two ways - firstly in an anechoic chamber with analogue tape, a microphone and speaker similar to those used in the original; and secondly in a room similar to that used in the original with the highest quality digital recording, microphones and reference monitors. My guess is that the character of the tape-based recording in the anechoic space would display some of the resonance type effects present in Lucier’s original work. My point is that the rhetoric surrounding this work acknowledges the function of space, yet ignores the function of technology as central to the character of the piece.

For me this attitude is like trying to hide the cheese in a cheese sandwich. When I order a sandwich made with cheese I would ideally like to taste some cheese. “Sorry sir, Denis Smalley made your sandwich today”, would not really cheer me up much because I do not want to eat over-processed food that tastes of nothing (which is basically what Mr. Smalley is saying he wants to do with music). Similarly I would not be very impressed with the chef’s excuse, “I tried the cheese sandwich today sir, but felt that the overbearing presence of cheese somehow blocked the meaning of the sandwich in itself.”12 Pretty silly, yes? But I think this demonstrates how extreme our beliefs get when we talk about the thing we call technology and its relation to the thing we call art.
Many of the tools available in 1980 were so-called ‘human machine interfaces’ and were thus characterized by an extremely simple and intuitive interaction. By comparing the parameters of the tools to different musical instruments, people were able to create new sounds and combinations of sounds that were previously unattainable.

In their reopening of pseudo-obsolete technologies, Fowler and Youngs engage in what I have started to call reverse practice. This term paraphrases and parallels ‘reverse engineering’ in the sense that it promotes an analytical deconstruction of equipment in order to extract knowledge. Reverse practice not only uncovers technical knowledge, but also inevitably revisits the vocabularies and practices associated with those technologies. I think this term nicely corresponds to Fowler’s description of “a practical and philosophical meditation on the past, through our contemporary selves” with instruments that are “emblematic of a certain period of experimentation from our musical pasts.”

However, I believe that this is not a nostalgic recollection of lost times, as Fowler states: “what underlies the exploration of these out-dated machines in the history of popular culture [...] is the material history of an instrument and discovering your own way of interacting with it”. In this sense Fowler and Youngs’ activity can be read as a critical exegesis, one that reconceives the relationships between musical vocabularies, technologies and practices, and asks how they fit into the subjective and political imperatives of that moment.

When tools as such became machines, their relationship with man inverted itself. Prior to the Industrial Revolution, man was surrounded by tools; after the Industrial Revolution, it was the machine that was surrounded by men. This is the precise meaning of “revolution”. Prior to the Industrial Revolution, man was the constant in the relationship, and tools were the variables; afterwards, machines were the constant, and men were the variables. Previously, the tools worked as a function of men; afterwards, men worked as a function of the machines.

B. ARTISAN VS. INDUSTRIAL AND POST-INDUSTRIAL TECHNOLOGIES

Surely a stereo set, consisting of a turntable, an amplifier, and speakers is a technological device. Its reason for being is well understood. It is to provide music. But this simple understanding conceals the characteristic way in which music is produced by a device. After all, a group of friends gather with the instruments to delight me on my birthday, provide music too. A stereo set, however, secures music not just on a festive day but at any time. How many there were, and in some cases I will not be able to distinguish or identify their instruments from the mode of its production. Records as unlabelled physical items do not bespeak, except to the most practiced of eyes, what kind of music they contain. Loudspeakers correspond an extreme concealment or abstractness in the way of music or meaning are never actually transparent – never open to scrutiny. The division between "a practical and philosophical analysis of what drums, drumming and drummers are. In contrast to the American designers of the LM-1, the Japanese designers of the 808 placed an emphasis on synthetic models of various sounds. These could be altered in a number of ways with tone, decay and (the snare’s) snappy parameters. The manipulation of these parameters produces results that are quite different to the simple pitch shifting of the LM-1 (which merely changes the playback speed of the sample).
becomes unrealistic once its pitch deviates by a certain amount; the second (the sung scale) sounds more ‘real’ to the listener over its entire range. The 808 therefore gives priority to a different aspect of what is ‘real’—it offers a different interpretation of the real, specifically concerning the integrity of timbral relationships.

Similarly, pattern entry on the 808 takes the form of a row of 16 buttons that are enabled or disabled to make rhythmic structures (rather like the Scrabble tiles method). This is again very different to the LM-1 where pattern entry is derived from hitting drums at specific points within a loop. The LM-1’s methodology implies that the player identifies (if only at an intuitive level) the position of a desired event before hitting it. The 808 is quite different: here a button can be pressed anywhere within the 16 divisions without necessarily having any predetermined expectation of what the resultant pattern might sound like. When I first used an 808 (I think around 1987) I was instantly struck by the absorbing nature of this method of pattern entry. It appealed to me because it generated results that were not entirely expected; it could be ‘played’, but in a way that was entirely different to playing ‘real’ drums. The interface used on the Japanese 808 offered a different way of engaging with rhythmic data that extended one’s imagination, it added to the music and was not just a means of encoding it.

I think if we compare the two units, for me the LM-1 attempts to represent (copy) drums drumming and the drummer, whereas the 808 unapologetically attempts some form of abstraction of the kind hypothesized by Borgmann. What we should surmise is this: even if the drum machine is a copy of drums, drumming and drummers, it is not only a copy; even the copy (if it is a copy) offers something that the putative original does not.

### C. AGAINST THE METAPHYSICS OF ERROR

The moments of music that mean most to us are those that are unplanned.

_Rebecca Salvadori."

It is fairly common for musicians to talk about the importance of mistakes and the unexpected. These are often associated with technical errors, malfunctions and failure of one sort or another. Youngs, for example, states: “I love error and malfunction. If I’m totally in control, I can get bored. What’s not to like in a piece of equipment doing something unexpected and amazing?” Obviously I agree with Youngs - the unexpected results of the 808 for example were the reason I enjoyed its interface so much. But I think the ways in which we describe those kinds of unexpected occurrences often place an undue emphasis on error, failure or malfunction. The general vibe in these kinds of conversations is that the mistake (although ultimately helpful) happens because something has gone wrong (as opposed to right), i.e. creative triumph from technical misfortune. Actually I think we have built up a mythology around the role of error and malfunction in music production. For me this mythology, although superficially radical, is fundamentally conservative because it is based upon an assumption that everything unplanned is a mistake, or, that everything beyond our control is an error. I think that belief is fundamentally grounded in the assumption that we are, ideally, controllers of our environment: man as creative genius.

In 2000 Kim Cascone published a paper in the Computer Music Journal that gained some attention with its assertion that ‘failure’ had become a focus of much contemporary digital music. In it he describes Oval’s production of Oval’s album _Systemisch_ (Mille Plateaux, 1994), drawing attention to the physical manipulation of a compact disc to produce playback errors. It is interesting, however, that the paper does not mention the painstaking act of composition described by Oval’s Markus Popp in a later article (Sound On Sound, October 2002). Here, in contrast to the description implied in Cascone’s text, the piece’s production is portrayed as the result of many hours of manual editing in a standard audio editing environment - the result of specific aesthetic choices and what the composer describes as “hard work”. In my opinion the continual reframing of _Systemisch_ as “epic fail” – the result of automated and unpredictable processes, with little authorial intervention – does nothing more than pander to our collective anxieties about automation. And for me Cascone’s na"ive reappropriation of McLuhan’s celebrated (and in my opinion flawed) mantra “the medium is the message” simply rearticulates the transparency-opacity narrative present in Smalley’s text: it is technology in a worst-case scenario, technology as utterly opaque.

_Artefacts, by definition, have an intended function. Anything that has an intended function is subject to malfunction. Thus, for technical artefacts, the concept of artefact, function, and malfunction are conceptually linked: None is intelligible without the other._

_Lynne Rudder Baker, 2008."

According to Baker, a malfunction is an artefact’s failure to perform its intended function; where its intended function is physically possible, when a competent operator tries to perform that function, and it is done under conditions for which it was designed. For example, a perpetual motion machine cannot malfunction because, as is generally accepted, perpetual motion is physically impossible. The perpetual motion machine fails, but that failure should not be classed as a malfunction. This logic kind of makes sense, but I think Baker’s definition is not as neat as it first appears. In particular I have problems with what counts as operator competence and the belief that an artefact has a specific set of intended functions.

First of all, who decides what the intended function of a particular artefact is? Is it the designer? And if so, who could we cite as the designer of the hammer? Clearly the use of the hammer has evolved, and as such we have to accept that the hammer’s intended function has also evolved. This suggests to me that machines don’t have fixed intended functions at all. If I was using a hammer to prop a door open and the end fell off, or, if I was hitting a long metal object with the hammer and the end fell off, or, if I was swirling the hammer...
around my head just for fun and the end fell off. I would feel equally confident to call any of these occurrences a malfunction of the hammer (irrespective of its use, my intended purpose or competence) simply because the end fell off and hammers should not do that. So for me the malfunctionality of the hammer should be considered with reference to those circumstances - i.e. the context. According to Baker I would be wrong to do so, but I still think it makes sense because I roughly know how a hammer should behave in different circumstances, and that it has malfunctioned if the end drops off.

Similarly, some artefacts have very ambiguous functions - for example what is the intended function of Lego? Is it to occupy your children while you cook lunch? Is it to foster hand/eye co-ordination or cognitive development? Is it to teach the basics of construction? Is it to enable children to have fun? Or is it to enable one child to demonstrate his or her technical competence to another and thus gain some kind of social status? And if that is the case, how do we determine when Lego malfunctions: when children find it boring, when fun is not present, when hand/eye co-ordination does not develop, when a brick does not join to another brick? Probably the only way I would say that Lego could malfunction is in this last very crude sense: when a brick does not join properly to another brick. But that totally ignores the many reasons why people use Lego so much and its many context-dependent functions.

What about a climbing frame, can that ever malfunction? If so, and if we follow Baker’s definition, we would have to make reference to its intended function: let’s say that is some kind of development of motor skills. But if the climbing frame actually facilitates the development of those skills, at what level do we draw the line that distinguishes between the competent and incompetent user of the climbing frame? If the function of the climbing frame is to foster competence in its use, built for incompetent users to acquire competence, how can we say the climbing frame can malfunction at all? I think I have seen many that did, especially the one in Clifton Park, Rotherham in the late 1970’s.

For me this demonstrates that malfunctionality is a much more complex scenario than that described by Baker. Intentions, failures, errors and malfunctions are produced within specific practices and contexts, which somehow paraphrases Wittgenstein’s assertion that “the meaning of a word is its use in the language.” For musicians, errors come in many shapes and sizes: the error that means you lose the meaning of a word is its use in the language. "xvi: For musicians, errors come in many shapes and sizes: the error that means you lose the meaning of a word is its use in the language. "xvi: For musicians, errors come in many shapes and sizes: the error that means you lose the meaning of a word is its use in the language. "xvi: For musicians, errors come in many shapes and sizes: the error that means you lose the meaning of a word is its use in the language. "xvi: For musicians, errors come in many shapes and sizes: the error that means you lose the meaning of a word is its use in the language. "xvi: For musicians, errors come in many shapes and sizes: the error that means you lose the meaning of a word is its use in the language. "xvi: For musicians, errors come in many shapes and sizes: the error that means you lose the meaning of a word is its use in the language. "xvi: For musicians, errors come in many shapes and sizes: the error that means you lose the meaning of a word is its use in the language.

The pre-Copernican geocentric account of the solar system placed the viewer (and by extension the earth) at the centre of things - it offered a first person account of the movement of points of light around the sky. Generally speaking I think most of us still stick to this account - when I get up in the morning I see that the sun is over there (I don’t usually get up in time to see it rise but I guess it has done), and during the day it moves through the sky to over there, and goes down behind that hill. I track its movement in relation to me, I look at things like the position of my washing line and garden shed to assess its direction, not other celestial objects.

Somehow these contradictory accounts (the heliocentric vs. the geocentric) don’t seem con-tradictory at all when it comes to our daily lives. Despite the fact that we feel like we are at the centre of things, following the Copernican revolution, we understand this isn’t the case when it comes to the movement of planets. Although I track the movement of the sun in relation to my mother’s washing line (and not to other celestial bodies), I assume that some physical force is moving me (and the earth) around it, rather than if around me. We seem to have understood this multi-perspective outlook. But I think other areas of our worldview are not as resolved.

### D. WAS COPERNICUS WRONG?

When Copernicus claimed that the earth was not the centre of the solar system did the planets suddenly change direction and start move around the sky in a different way? Or, perhaps one day Copernicus observed a change in paths taken by the planets as they moved around the sky and realised that a new explanation was needed to account for these new movements? Neither of these scenarios is correct: prior to, during, and following the Copernican revolution nothing changed about the movement of the planets. All that happened was Copernicus gave us a different description of what was going on with the planets, replacing the geocentric model we were all familiar with, with a new and radical heliocentric one.

Flursser’s assertion (quoted earlier in this text), that man orbits technology (as opposed to technology orbiting man), could be seen to mirror the Copernican shift from geocentric to heliocentric revolutionary status, but it does not. Why? Because Flursser, unlike Copernicus, gives his new description (of the relationship between man and technology) based on his belief that something has changed (i.e. the relative positions of man and technology). Copernicus does the opposite: he claims that nothing has changed... he just offers a revised account of the relationships between the earth, the sun and the planets. In terms of hypothetical relationships between man and technology I think Bruno Latourii does what Copernicus did - he offers a revised description of those relationships, one that is not dictated by any necessary change in those relationships. He just offers a different account that does not place man at the centre.