Is Electronic Music Different? A Critical Analysis of Thom Holmes's "Seven Reasons"

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In the opening chapter of his book *Electronic and Experimental Music* (second edition, New York and London: Routledge, 2002), Thom Holmes gives a list of "Seven Reasons Why Electronic Music Is Different" (pp. 9–12). Holmes attempts to show that electronic music differs from its predecessors not merely in its choice of instruments, but also in some aspects that he considers more fundamental to its musical nature—that "we listen to electronic music with different ears, and a different state of mind" (p. 9). It is the assertion of these fundamental differences that forms the basis of Holmes's "Seven Reasons". In this paper, I shall examine each of Holmes's reasons in turn.

1. Sound Resources

Holmes's first assertion is bold in its simplicity: *The sound resources available to electronic music are unlimited and can be constructed from scratch.* This is undeniably true of electronic music considered as a whole, but the issue is perhaps not as cut and dried as it seems at first glance. Certainly it is true that electronic music has brought into our musical language whole worlds of sounds that had never existed before, and perhaps never could have existed. Electronic means of sound production have made possible an unprecedented level of control over precise sonic details, permitting the composer to "*compose* the sound itself", as Holmes says (p. 9, emphasis his).

However, it is misleading to pretend that all electronic music shares this fascination with new sonic resources. While the work of musicians such as Wendy Carlos and (in a different way) Pierre Schaeffer has indeed been built around opening up new horizons of sonority, not all electronic musicians fall into this category. For example, in 2006, it cannot be said that the theremin and ondes Martenot are in any way new sonic resources, yet composers such as Pamelia Kurstin and Thomas Bloch still produce works for them. One would assume that they do this not primarily to explore new sonic landscapes, but rather because they have found sonic elements they enjoy in these instruments, just as they might with the violin or clarinet. Likewise, for such composers as these, since they are working with existing electronic instruments and are not further manipulating the sounds, their sound resources are not unlimited and cannot be constructed from scratch like those of Herbert Eimert or Thaddeus Cahill.

It is instructive to compare this state of affairs with that existing in classical music over the past few centuries. The late Romantic orchestra of Wagner, Strauss, and Mahler possesses tonal possibilities which, while not strictly unlimited, are indeed vast, so much so that even at this late date, composers have hardly scratched the surface of what might be done. The same can be said of the pipe organ in its more elaborate forms. Composers such as Berlioz and Ravel were unquestionably interested in exploring new horizons in orchestral sound; this tradition of exploration goes back to Beethoven and beyond. When a Mahler piles up odd doublings to create a new timbre, or when a Stravinsky creates a dense "fabric" by assigning an independent part to practically every instrument in the orchestra, surely this is as much "composing the sound itself" as are the painstaking sine-wave superimpositions of an Eimert or the meticulous tape manipulations of a Schaeffer.

2. Perception of Tonality

Holmes next states that electronic music "expands our perception of tonality" (p. 10), in that electronic music has introduced microtones and noise into the musical vocabulary. While electronic methods have certainly *facilitated* the production of noises and microtones, in fact neither noises nor microtones were introduced to Western music through electronics. Luigi Russolo's early 20th-century *intonarumori* (noise instruments) were constructed solely on acoustic principles, and if one considers the expanded use of orchestral percussion along these lines, it is arguable that composers have been experimenting with noise since at least the 1850s.

The history of microtonal experimentation in the West is even longer: Charles de Lusse (or Delusse) used quarter-tones[1] in his *Air à la grecque* for flute and continuo as early as 1760, and the exploration of different temperaments goes back to the Renaissance, if not to antiquity. In this connection, it is worth recalling that none of the great 20th-century pioneers of microtonal music (Hába, Vyshnegradsky, Carrillo, Partch, even Ives) ever composed for electronic instruments (with the possible exception of Partch's chromelodeon, which is electroacoustic), and in fact acoustic instruments are still the medium of choice for many modern microtonalists.[2] And although electronic composers have often removed themselves from the constraints of the twelve-tone system, they have more often done so by discarding *all* tonal systems than by experimenting with new ones. Easley Blackwood, with his *Twelve Microtonal Etudes for Electronic Music Media* (1980) in all the equal temperaments from 13 to 24 notes per octave, remains as one of the few electronic composers to actually make systematic use of the microtonal resources at his disposal.

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1 Probably not precisely 50 cents, since he would have been using an unequal temperament to begin with.

2 For proof of this statement, one need look no further than the American Festival of Microtonal Music (AFMM), which has been presenting concerts in New York City regularly since the 1980s. I attended a number of AFMM concerts between 1985 and about 1998, and while there was some use of electroacoustic instruments, I do not recall a single electronic work being present on any program.

3. Potential and Actual Music

The third assertion that Holmes makes, that "[e]lectronic music only exists in a state of actualization" (p. 11), is somewhat complex and worth examining closely. Holmes is here adopting Stravinsky's dichotomy between *potential* music (a score) and *actual* music (a performance). He points out that electronic music tends to be ill suited to conventional music notation, and concludes that electronic works therefore must exist only in a state of realization, and that electronic music is unique in this regard.

This is a provocative, far-reaching statement. If true, it would mean that electronic music springs into existence fully formed as performance, with little or no latent potential stage. There are styles of music for which this is certainly the case, but these styles tend to be improvisational, whereas much electronic music (particularly before 1970) is carefully conceived and painstakingly composed. Indeed, Holmes recognizes this fact, but appears to believe that the "notes, instructions, and ideas made by the composer" do not qualify as potential music—"[y]ou cannot study it as you would a piece of scored music." This statement, though plausible on its face, ignores the fact that conventional Western music notation is only one of many possible ways of rendering music in written form more or less unambiguously. Far from failing to notate music that does not lend itself well to conventional notation, many composers have developed notational systems suitable to the music they create. They have done so precisely in order to allow them to better fix their compositions in potential (score) form. Karlheinz Stockhausen has published such scores for some of his electronic works; according to Holmes, these scores apparently should not have been possible.

Holmes concludes his remarks on this topic with this sentence: "A work of electronic music is not *real*, does not exist, until a performance is *realized*, or played in real time" (p. 11, emphasis in the original). However, this statement is accurate with respect to electronic music only in the sense that it is accurate with respect to

all music: the score is not the performance (a fact that composers would do well to remember). Certainly there are pieces of electronic (and other) music that do not (and perhaps cannot) exist in written form, but these should not be taken as characteristic of electronic music in general.

4. Temporal Nature

Holmes's fourth statement about electronic music is that it "has a special relationship with the temporal nature of music" (p. 11). He goes on to state that electronic means facilitate the manipulation of sounds in time, and that electronic music "allow[s] the composer to place a sound at any point in time at any tempo". This is one of the more accurate of the seven assertions dealt with in the present paper: electronic music does indeed present the composer with finer control of time than had been possible through non-electronic methods, and much electronic music is based on this very fact (it is one of the basic tenets of *musique concrète*, for example).

However, it is important to recognize the limitations of this statement. Specifically, it applies only to music where the *precise timing of the notes is determined by electronic means*—that is, music that has been recorded or sequenced, or that is being improvised live by an electronic device. There is much electronic music that does not fall into this category—including *any* electronic music performed live by a human being—and in such music, the composer (and performer) have no greater control over time than they would in music where no electronics are involved.

5. Sound as a Theme of Composition

The next point that Holmes makes, "In electronic music, sound itself becomes a theme of composition" (p. 12), is a bit puzzling, since it seems to be largely synonymous with his remark on page 9 that the electronic composer "*composes* the very sounds themselves". However, this time, Holmes amplifies his statement with a

sentence that is worth quoting in full: "The ability to get inside the physics of a sound and directly manipulate its characteristics provides an entirely new resource for composing music."

Broadly speaking, this is quite true, and of Holmes's seven assertions, this one comes the closest to highlighting a true and fundamental difference between electronic and other music. Although composers have been manipulating timbre for centuries in ways such as were explained above, before the advent of electronic music, they were not generally able to do so on a physical level. It is possible for the enterprising electronic musician to directly manipulate waveforms and envelopes with an unprecedented degree of control. Many electronic composers have exploited these techniques, particularly after the mid-1950s, when the use of synthesizers rendered them more accessible. In this regard, electronic music may perhaps be seen as fundamentally different from anything that came before it. However, it remains an open question whether the *listener* will in fact perceive this level of control as fundamentally different.

6. Performance Limitations

Holmes's sixth statement is that "[e]lectronic music does not breathe: it is not affected by the limitations of human performance" (p. 12). Like Holmes's fourth assertion, this is only true to the extent that the performance itself is under electronic control: for example, a human playing an electronic keyboard will face more or less the same limitations as he or she would when playing piano. Similarly, the theremin has its own set of performance limitations. They are unlike those of any acoustic instrument because the design of the theremin is so radically different from anything acoustic, but the limitations exist nonetheless.

So far, this is fairly obvious. What is perhaps more surprising is that some music had been freed from the limitations of human performance long before electronic music was even thought of. String and keyboard players do not have to interrupt

the music with breaths (although they have their own set of limitations). More to the point, however, is the fact that performance without direct human intervention has been possible at least since the 18th century: Dom Bédos de Celles gave instructions for building mechanical organs in *L'art du facteur d'orgue* (1766), and Mozart composed several pieces (including the great Fantasia in F minor) expressly for such instruments. Closer to our own time, Conlon Nancarrow (1912–1997) made a career of composing for player piano; he did so precisely in order to avoid the limitations of human performance. Thus, while electronic means are at present the most *common* way of avoiding the constraints of human musicians, they are far from the only way to do so.

7. Imaginary Origin

Holmes finally states that electronic music "springs from the imagination" (p. 12). This is a bit perplexing. Surely it can be said that *all* music springs from the imagination—after all, music is arguably the most abstract of the arts, and all art springs from the imagination in some way (even Cage's randomized process pieces used imaginative choices of process).

Holmes does elucidate his meaning slightly with the sentence "[t]he essence of electronic music is its disassociation [*sic*] with the natural world", and a few sentences later says that electronic music has "little basis in the object world". This is certainly true for pieces produced by composers such as Herbert Eimert, who built their works out of electronic sounds and painstaking calculations. But can the same be said of Pierre Schaeffer's *Étude aux chemins de fer*, which consists of solely of natural sound generated in a railway station? To be sure, Schaeffer manipulates his train noises significantly, yet he always makes sure that they sound like the natural noises they are. This music is hardly dissociated from the natural world.

On the other hand, we must ask: how is a Beethoven piano sonata associated with the natural world? True, the music is acoustically generated, but it is performed on

a huge odd machine resembling nothing except for other musical instruments, and it is composed on principles that are purely abstract. Surely this music too has little basis in the object world. In fact, owing to the possibilities of recording technology, it is *easier* for electronic music to incorporate references to the natural world than it is for non-electronic music to do so. Holmes, then, may be right that electronic and non-electronic music can relate to the natural world in different ways, but I believe that he has got the nature of this relationship almost completely backwards.

8. Conclusion

Is electronic music really different, then? That is the question which Holmes was trying to answer with his assertions, and it is likewise the question explored in this paper. Holmes appears to feel that the differences he has identified between electronic and other music, coupled with the relative novelty of electronic music, make it impossible for us to listen to electronic music in the same way as non-electronic music. However, as I have explained in this paper, I do not believe that Holmes's differences are as great as he makes them out to be, and some of them may not exist at all.

Unlike Holmes, I believe that it is possible for us to listen to electronic music in the same "dumb sort of way" that Aaron Copland claims that we use to listen to *any* music (quoted by Holmes, pp. 8–9). This ability does not magically stop where acoustic music ends and electronic music begins; to claim that it does is in my opinion tantamount to saying that although we can listen to violin music in a "dumb sort of way", we cannot do the same for clarinet music, since the clarinet is a fundamentally different instrument from the violin. As any reasonable listener knows, good music is good music, regardless of how it is produced. Electronic means of music creation have now reached that phase where they can produce good music on an entirely equal footing with acoustic means. It's about time that we recognize electronic music as a first-class citizen of the musical world.