Retooling the Technique*

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ABSTRACT: Recent debates about new directions in music scholarship have sometimes focused on technical language and its use in musical analysis. This essay puts some perspective on that debate from the vantage of the philosophy of technology. Following the ideas of Martin Heidegger and Don Ihde about the "ontological priority" of technology with respect to science, the essay argues that the technical language of music has a basis in "making" music and must be "retooled" to apply to the more experiential concerns of recent musicological and theoretical research.

[1] Last spring I was chatting with a colleague from Theater Arts before a ceremonial function at my University. My colleague told me how much he enjoyed socializing with musicians because "we" like to eat good food and drink good wine, and because conversation with musicians does not get bogged down in those critical issues that concern people in the fine and dramatic arts. Then he added: "The only things one can say about music in any meaningful sense are technical."

[2] Our conversation ended at this point, cut short by the beginning of the ceremony. While I never pursued an opportunity to discuss further with my colleague just what he meant by the comment, taken at face value it raises a number of issues for both musicians and musician/scholars who deal in "technique" everyday but who also strive to create something distinct from technique. While appreciating the praise given to my professional and social group (we are fun, I know), I find it both annoying and intriguing that this fellow arts educator thinks that we musicians can not meaningfully apply conceptual meaning to musical sound. The underlying message here seems to be this: We can make music and we can perform it, but we can not "say" anything meaningful about pieces that is not about the making.

[3] While my colleague's comment was not intended as a manifesto about how linguistic expression can or cannot "capture" the significance of any of the arts—theater, fine arts, dance, literature, or music—the attitude it communicates is not in any sense new. Put in a positive light, his statement could mean that music "transcends" the messiness of semantic meaning and that any attempt to conceptualize it is a violation of something insusceptible to verbal expression. Put in a negative light, it could mean that music admits only and merely a practical knowledge and cannot be accessed by linguistic conceptuality, that human capacity which has been used to set us apart from "less intelligent" creatures.[1] Since technique is understood both as limitation and liberation, we might well wonder how both attitudes arise.

[4] The philosopher Stanley Cavell, in his essay "Music Discomposed," articulated this "doubleness" of technique over 30

years ago. He wrote:

> The serious attempt to articulate a response to a piece of music where more than reverie, has characteristically stimulated mathematics or metaphysics—as though music has never quite become one of the facts of life, but shunts between an overwhelming directness and an overweening mystery. Is this because music, as we know it, is the newest of the great arts and just has not had the time to learn to criticize itself; or because it inherently resists verbal transcriptions? Whatever the cause, the absence of humane music criticism seems particularly striking against the fact that music has, among the arts, the most, perhaps the only, systematic and precise vocabulary for the description and analysis of its objects. Somehow that possession must itself be a liability . . . [2]

Themes similar to those mentioned above emerge from Cavell's thought: music resists "verbalization," its technical language is highly developed, and its highly developed technique is a "liability." "Technique" emerges in the thought of a great many critics as a powerful tool that either allows or prevents certain kinds of discourse or thought. [3]

[5] With regard to music, the term technique can refer to a number of different things. Technique refers to the practical knowledge required to produce musical sounds on instruments or with the voice and to the practical knowledge needed for reading musical notation. Often, but not always, the techniques required for reading music notation are learned in conjunction with learning to play an instrument or sing. Another meaning of technique occurs in the context of music theory. For instance, textbooks of the sort used for beginning theory courses often have technique in the title: *Techniques and Materials of Tonal Music* or *Materials and Techniques of Twentieth-Century Music.* [4] The pairing of "techniques" with "materials" in these two titles suggests that technique refers to the procedures by which basic materials are used in a practical sense. The teaching of basic theory then shows how to use the materials of music, often through study of how those materials have been used compositionally by others.

[6] Technique, then, is a skill referring to praxis. If I say that the soloist's performance of Berg's Violin Concerto was technically unflawed, I make an assessment regarding the player's physical skill in producing the sounds. A "technical" description of a piece of music indicates how the materials of music have been used, approaching the musical object from the perspective of a system that accounts for a musical practice.

[7] A sense of the practical pervades our thinking about music analysis also, as Ian Bent's characterization of music analysis suggests: "Analysis is the means of answering directly the question 'How does it work?'" [5] Elucidation of "how a piece works" requires, in Bent's terms, "resolution of a musical structure into . . . constituent elements, and the investigation of the functions of those elements within that structure." [6] In other words, analysis entails a determination of the constituent "materials" and shows the techniques by which the materials are used in a given work. While there is an overlap between what a "technical description" and an analysis will demonstrate, we expect an analysis to "go beyond" the simple description, to tell more about function and thus to delve into realms of meaning that move beyond the particular. But my point is that both "technical description" and "analysis" have a basis in the practical, in simply "what happens."

[8] "Technical descriptions" and technique-based analysis have been the subject of criticism over the last 20 years for a variety of reasons. For instance:

> Joseph Kerman: "The vision of these analyst-critics was and is of a perfect, organic relation among all the analyzable parts of a musical masterpiece . . . [A]nalysis exists for the purpose of demonstrating organicism, and organicism exists for the purpose of validating a certain body of works of art . . . The true intellectual milieu of analysis is not science but ideology." [7]

> Leo Treitler: "Formalist analysis . . . declares [the historical context and the interpretive tradition built up around a piece] to be irrelevant to the analysis of the work." [8]

> Susan McClary: "It has become heretical [for music theorists] to address the signifying practices of say Bach or Beethoven for at least two interrelated reasons: first, their present day prestige in the modernist academy

hinges on the abstract patterns of order in their music rather than on signification; second, the argument that their music likewise is nothing but abstract constructs in turn helps legitimize the avant-garde [here understood as composers of high modernist music of mid-twentieth century]."[9]

[9] In summary, the technique-based analytic approaches are problematic because they 1) conceal the conceptual and ideological underpinnings of their accounts of what music does, 2) take an exclusionary approach to musical explanation, eliminating the historical and critical context that surrounds understanding, and 3) ignore the expressive, or "signifying," features of musical meaning. "Technique" per se is not the subject of these criticisms. However, since it plays a crucial role in the practices not only of "formalist" or "abstract" analysis but further in the teaching and learning of a "basic" language through which we talk about music, productive understanding of the issues facing music scholars nowadays requires consideration of "technique."

[10] I approach the topic of "technique" from the vantage of philosophical thought about a related concept: technology. The philosopher Don Ihde has written extensively about how humans use technology, either in an everyday setting or in science. Building upon the ideas of Martin Heidegger and of other, more recent authors, such as Lewis Mumford and Lynn White Jr., he shows how technologies in the form of tools and scientific instruments are employed by humans to achieve a variety of tasks, from the most mundane task of chopping wood with an ax to the more complex goal of observing the formation of stars in distant galaxies.[10] In either case, the technology—the ax or the telescope—is something used by humans to achieve a certain task.

[11] Of particular concern to Ihde, and to Heidegger before him, is the question of the relation between science as mode of intellectual inquiry and the tools used to pursue that inquiry. The standard or "idealist" account of the relation between technology and science "holds that science precedes and founds technology." In this view, science provides "insight into the laws of nature, a conceptual system at the formal and abstract level, and the ability to apply this knowledge to the material realm . . . "[11] Technology in this sense is the practical application of knowledge gained from the conceptual realm of science, and science is understood as both "historically and ontologically" prior to technology.

[12] Ihde develops an alternate view that considers technology ontologically prior to science, basing his position on insights from Martin Heidegger. In his 1954 essay, "The Question Concerning Technology," Heidegger considers a broader sense of technology than might be typical in recent understandings of the term, as Ihde points out: "Technology—more precisely the essence of technology—is a certain way of experiencing, relating to, and organizing the way humans relate to the natural world."[12] Such an understanding of technology reverts to older meanings of this and other related terms.

[13] According to Ihde, Heidegger distinguishes three definitions of the term "technology." One is the standard or idealist definition mentioned earlier. The other two derive more directly from the Greek word *techne*, which is the also the root of technique. Heiddegger's second definition implicates a two-pronged sense of the Greek term: "techne is both a name for the activities and skills of a craftsman and for the arts of both mind and hand, but also is linked to creative making, [that is to] poiesis."[13] This meaning is implicated in current uses of the term technique when referring to the performer's or the composer's "technique." In each of these modern instances of the term, practical or "craft-like" actions are associated with "creative" making.

[14] Heidegger's third and "ultimate" definition "makes of Technology a mode of truth or revealing (aletheia). Technology, in essence, reveals a world in a certain way. . . . It allows us to see, to order, to relate to the world in a particular way . . . [and as] a mode of relating to the world . . . becomes the dominant and primary way in which we understand that world."[14]

[15] In such a conception, a technology or a technique may be understood as a "tool" that "shapes" the world in a particular way. As a tool, a technology or technique is based in praxis and has the purpose of "revealing" the world—but this "revealing," more than simple discovery, is creative. It is in this sense of "creative revealing" that Heidegger understands it as ontologically prior to science.

[16] While arguing for the ontological priority of technology, Heidegger also observed an essential circularity in human investigations of an experienced world. In his "The Question Concerning Technology," Heidegger demonstrates this

circularity with respect to experimental physics:

> Modern physics is not experimental physics because it applies apparatus to the questioning of nature. Rather the reverse is true. Because physics, indeed already as pure theory, sets nature up to exhibit itself as a coherence of forces calculable in advance, it therefore orders its experiments precisely for the purpose of asking whether and how nature reports itself when set up this way. [15]

Heidegger's observation of this essential circularity offers not a criticism but rather an elucidation of the ramifications of technology's ontological priority.

[17] These ideas about technology as a "creative revealing" illuminate some of the recent issues surrounding musical analysis. As suggested earlier, two related types of technique figure in musical practice. First, performance techniques—for instrument or voice—are the means of projecting in audible form musical sound. They are the practical means by which performers create not simply sound but "music." Second, and more central to present concerns, foundational musical concepts such as those articulated in beginning music theory texts are techniques by which musicians "know" a world of sound. The basic terms of pitch, rhythm, timbre, texture, dynamics, form, etc. are the practical means by which musicians "shape" or "reveal" music itself, and this revealing fundamentally "shapes" experiential engagement with sound. The fundamental musical terms with which we engage musical sound are not "applied to" a free-standing experience but are the means through which experience emerges. Furthermore, in their revelatory function, such terms establish the conditions for "higher level" modes of musical explanation; or in other words, these technical terms and their related concepts are ontologically prior to analytic interpretation.

[18] When considering the technical language that forms a basis for thinking about music, we must take account of for whom such technical language "reveals" the world in the senses of both poiesis (creation) and aletheia (truth). A brief return to philosophical issues can help illuminate this matter. While Heidegger's thinking about the ontological priority of technology and its relation to scientific practice applies primarily to Western culture, Ihde's work on these issues has engaged differences across geographical and historical cultures. For instance, he has noted how Polynesian navigational practices are "sedimented in a variant understanding of the world." [16] Using no instruments to navigate their travels in the Pacific, the ancient Polynesians employed "a complex system of perceptual observations carried on through a secret tradition . . . " This practice was embedded in a belief that the ocean is a "deity" who was the "source of nurture and support . . . " [17] Ihde's observation of cultural difference provides a model for taking account of reactions to "technical" explanations of music.

[19] For instance, consider this complaint about the use of technical language in writing about music. In a New York Times review of Joseph Swain's *Musical Languages*, Douglas R. Hofstadter argues that "the structural language of harmony theory" does not "get . . . at music's essential content." He goes further to note that the reading of passages employing "harmony-theory terminology" leave him "numbed." [18] Though Hofstadter claims to have taken one semester of musictheory, the technical language "reveals" little or nothing of the music for him.

[20] Compare this example with a newspaper account of a recent scientific discovery: the Hubble "photographs" of colliding galaxies. *Newsday*, a New York City-area newspaper, characterized the event this way:

> The Hubble Space Telescope has photographed a pair of colliding galaxies . . . [which are] merging into one huge elliptical galaxy. . . . The photos show the heart-shaped core of the colliding Antennae galaxies, about 63 million light years away . . . [19]

This press account does not use highly technical language, but our understanding of what "is happening" 63 million light years away depends on technologies with which most people in our culture typically have experience. The operation of a telescope and the idea of a photograph are well-known and comprehensible phenomena for us. We have a clear experiential sense of what they can "reveal" about the world.

[21] The photos enabled by the Hubble Telescope make "real" for us something that none of us will experience directly, but the technology does allow us to experience "instrumentally" the colliding galaxies. [20] In the case of music, Swain's

technology—his technical discourse— does not allow the reviewer to experience the music through the "instrumentality" of the language, even though it refers to a potentially palpable experience. Unlike the technology of the professional scientist which enables an instrumentally-mediated experience of something palpably unexperienceable, the technology of the professional musician seems functionally to obscure something that is a feature of most people's everyday experience.

[22] The reviewer's complaints about technical language are not unusual, and the general ease with which such complaints are made outside a professional community of musicians suggests that the techniques of this terminology do not operate for large segments of contemporary U. S. society. While the revelatory function of a technique depends on its intersubjective operation, such operation may not be universal, as Ihde's remarks on Polynesian navigation suggest. The operation or non-operation of the revelatory function of a technique depends on 1) practical engagement with the technique itself and 2) "sedimented" beliefs about music.

[23] First, for many listeners in the United States today who are untrained in the praxis of making music—either instrumentally, vocally, or compositionally and with some knowledge of musical notation—technical accounts of music at either a low- or high-level of explanation may seem like a "foreign language." A technique-based account of music will likely not have a revelatory function for such listeners because they have no practical engagement with the technique. Those of us who attempt the teaching of what we might think of as mid-level concepts about music, such concepts as rhythmic or pitch organization, without being able to teach in any serious way musical notation or performance itself, may well recognize the problem. Teaching concepts such as meter and harmony without associated practical instruction in "making" is difficult at best because students have no low-level knowledge that will adequately support more conceptual, and primarily verbal, types of understanding.

[24] Second, in the absence of a practice-oriented technique, many listeners have developed strategies for experiential apprehension of music that follow from sedimented beliefs about music as, for instance, affect and entertainment. For such listeners, language related either to feelings of sentiment and bodily motion or to enjoyment play a more direct revelatory function.

[25] The "failure" of a technique-based writing to reveal its musical world to those 1) with no practical engagement with the technique and 2) who have developed alternate listening strategies does not mean that a professional musician's use of technical language reveals a musical world devoid of expressive content and beauty. Rather, for the professional invested in the technique, emotion and beauty are engaged through its terms. Within a musical community of practicing musicians which includes performers, scholars, composers, and critics, the technical language derives from a musical praxis of making —performing and composing. That language then becomes the basis for our perceptual engagement with musical sound and for the more explanatory modes of understanding, most notably that of music analysis. Put another way, the praxis at a low level enables what may be observed and experienced at a more complex level: technology precedes science.

[26] This observation allows us to understand why a technique-based language about music both does and doesn't have a revelatory function, that function depending on whether a listener is trained in a musical practice of making. It does not explain criticisms of technique-based analysis within a community of professional musicians (scholars, performers, creators, composers). When questions of the value or drawbacks of technical language occur within this community the stakes are much higher since technical language is so central to the professionals's ability to make the musical object "sit still." On one hand, the professional community needs some sort of descriptive language—a technical language of some sort—to be able to "say" anything about what happens. Whether dealing with musical symbol or sound, discussion of music must be framed by some discourse which, no matter whether terminological or symbolic, has conceptual content that, to use Heidegger's terms, "reveals the musical world" in a certain way. On the other hand, the technical descriptive language is often viewed as something to "go beyond," either go beyond in the sense of achieving higher levels of theoretical understanding or go beyond in the sense of attaining a humane interpretive understanding. In each of these senses of "going beyond," technique breaks off from "more conceptual" and verbally-formulated modes of understanding. This "breaking off" recalls Heidegger's observations about the relation of technology to science, to what Ihde has called the "technics-theory distinction." Heidegger's critique of this distinction and Ihde's observations on the role of a "variant understanding of the world" and its sedimentation in praxis shed light on issues facing the professional community of music scholars.

[27] First, we must recognize that the highly sophisticated technique for musical description and modes of musical explanation deriving from it have been, as Cavell suggests, "systematic and precise" and even further successful and productive. As a "technology" in Heidegger's sense, this discourse about music reveals a rich, multi-faceted world of musical sound. The world it discloses reflects a praxis of making involving issues of notation, performance, and creation. Criticism of this discourse focuses on what it does not reveal: a "humane" critical understanding, historical and critical contexts, and expressive meaning. If understood in terms of Heidegger's commentary on the relation of technique and theory, the so-called "failure" of technique-based discourse is not an issue of does not but rather one of can not. The technical language we use for descriptive purposes has its source in the "making" of musical sound and in capturing the musical object so as to make it sit still. From this perspective of making and capturing, the technical language is successful and productive.

[28] If the perspective itself changes, however, then the technical language may fail. Or in Ihde's terms, if a "variant understanding of the world" operates, the practice of technical explanation will cease to have a revelatory function. Recent criticisms of the technical language and of the higher-level analyses it has supported within the professional community reflect such a change of perspective, a perspective which itself is embedded in larger intellectual shifts.

[29] The twentieth century has witnessed a philosophical turning from issues of "what the world is" to "what the world is for us," in other words, from issues of the objective existence of things to the apprehension of things by humans as culturally and historically situated beings. Charles Taylor, arguing for Heidegger's pivotal role in this turn, puts the matter this way. Heidegger

> struggle[d] . . . to recover an understanding of the agent [the thinking agent] as engaged, as embedded in a culture, a form of life, a 'world' of involvements, ultimately to understand the agent as embodied. [21]

The twentieth century's refocusing on humans as thinking "agents" in the world as known to them extends to ideas as diverse as Freud's "unconscious," Einstein's "relativity," and Heisenberg's "uncertainty" as well as to the philosophical positions, for instance, of Heidegger, Merleau-Ponty, Sartre, Ricoeur, Gadamer, Derrida, Foucault, Rorty, and so on.

[30] Current interest in music as experienced by listeners, in listening-oriented criticism and explanation, has fostered not only an interest in understanding music in terms of its historical and critical contexts and expressive meanings but also in the nature of musical perception and in the diverse ways that music is apprehended by listeners from differing cultural, historical, or experiential bases. And, it has resulted, ironically, in both a criticism of the technical language for what it "does not" reveal and attempts to make this language reveal "musical worlds" it does not support. If this turn toward the experiential domain is to delve into higher, more conceptual explanations of musical meaning, such explanations will need to be supported by a lower level technique that supports it. In other words, this "variant understanding of a world of music" requires a retooling of the technique in order to reveal "precisely" and "productively" this dimension of the musical phenomenon.

[31] Retooling of the technical language requires a rethinking of the fundamental terms, concepts, and symbols that allow us as professionals to make the musical object "sit still" and to "say" anything about what happens. Such a rethinking requires not only development of a new descriptive terminology—a new or revitalized technical language—that supports higher level conceptual thinking from an experiential perspective but also investigation of the ways that lower-level technical language currently supports experiential associations of affect and meaning. Like a technique deriving from issues of creating, a musical technique retooled to meet the demands of the experiential turn of the twentieth century has to build upon the practical terms of experiential engagement, whether they be the actions of making or of listening. Retooling of the techniques of our descriptive language about music will allow not only an appropriate and productive response to the changing goals of musical research but, as Heidegger puts it, will enable higher levels of understanding—the science—within this experiential "understanding of the world."

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Footnotes

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1. It is interesting to note here that "scientists" recently reported finding a portion of monkeys's brains that is enlarged in ways similar to an analogous enlarged portion of human brains. The enlargement in humans has long been attributed to language acquisition, a cognitive capability thought to distinguish humans from other species. Discovery of a similar enlargement would suggest that monkeys have a similar capability for language or that there is no discernible physical site that indicates language capability (*New York Times*, Tuesday, January 13, 1998: F3). If music is thought to be inaccessible to linguistic thought, then it must be a "less intelligent" or perhaps "primitive" form of human activity.
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2. Stanley Cavell, *Must We Mean What We Say?* (New York: Cambridge University Press, 1977 [1969]), 185–6.
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3. Both Joseph Kerman and Leo Treitler refer to Cavell's observation in subsequent articles: see Kerman, "How We Got into Analysis, and How to Get Out," *Critical Inquiry* 7.2 (1980): 321, and Treitler, "'To Worship That Celestial Sound': Motives for Analysis," *Journal of Musicology* 1.2 (1982): 153, where he refers not only to Cavell but also to another philosopher/critic, Peter Kivy, who makes much the same observation in *The Corded Shell* (Princeton: Princeton University Press, 1980).
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4. Thomas Benjamin, Michael Horvit, Robert Nelson. *Techniques and Materials of Tonal Music: With an Introduction to Twentieth-century Techniques* (Boston: Houghton Mifflin, 1986). Stefan Kostka, *Materials and Techniques of Twentieth-century Music* (Englewood Cliffs, NJ: Prentice Hall, 1990).
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5. Ian Bent, *Analysis* (New York: Norton & Co., 1980): 5. [Parts of this book were published first as an article in the *New Grove Dictionary of Music and Musicians* (London: The Macmillan Press).]
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6. Bent, *Analysis*: 1.
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7. Kerman, "How We Got Into Analysis," 314–5.
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8. Treitler, "'To Worship That Celestial Sound'," 162.
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9. Susan McClary, "Terminal Prestige: The Case of Avant-Garde Music," *Keeping Score: Music, Disciplinarity, Culture*, eds. David Schwarz, Anahid Kassabian, and Lawrence Siegel (Charlottesville: University of Virginia Press, 1997 [1989]): 62.
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10. Martin Heidegger, "The Question Concerning Technology," *The Question Concerning Technology and Other Essays*, trans. William Lovitt (New York: Garland Publishing, 1977); Lewis Mumford, *Technics and Civilization* (New York: Harcourt, Brace, and Co., 1936); Lynn White, Jr., *Medieval Technology and Social Change* (New York: Oxford University Press, 1962).
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11. Don Ihde, *Existential Technics* (Albany: SUNY Press, 1983): 27.

12. Ihde, *Existential Technics*, 29. Heidegger delivered his ideas initially in lectures. The first lecture presenting his ideas was given in 1949 under the title "Das Gestell" [translated as "Enframing"]. Heidegger expanded the essay and delivered lectures in 1954 and 1955 under the title "The Question Concerning Technology." The essay was first published in 1954 in *Vortraege und Aufsaetze* (Pfullingen: Guenther Neske).

13. Ihde, *Existential Technics*, 32.

14. Ihde, *Existential Technics*, 32–33.

15. Heidegger, "The Question Concerning Technology," 21.

16. Ihde, *Existential Technics*, 43.

17. Ihde, *Existential Technics*, 42–3.

18. Douglas R. Hofstadter, "Semantics in C Major," *New York Times Book Review*, October 12, 1997: 28 [Reviewing Joseph Swain, *Musical Languages* (New York: Norton, 1997)].

19. *Newsday*, Wednesday, October 22, 1997: A7.

20. Don Ihde writes about "instrumental" experience in several places but notably in *Technology and the Lifeworld: From Garden to Earth* (Bloomington: Indiana University Press, 1990). Ihde's work focuses on how our knowledge and experience of the world is mediated by various types of technologies, including instruments of various sorts: telescopes, musical instruments, tools, and so on. Ihde points out that unless there is a failure in its performance or use, the instrument will recede experientially—that is, we are not experientially aware of its presence; however, while it recedes from direct awareness, the instrument still has an affect on the nature of the experience.

21. Charles Taylor, "Engaged agency and background in Heidegger," *The Cambridge Companion to Heidegger*, ed. Charles B. Guignon (New York: Cambridge University Press, 1993): 318.