

Attuned to Being: Heideggerian Music in Technological Society

Gerry Stahl

The hopes and frustrations of technology are revealed in the most advanced works of art. This implication of the Heideggerian standpoint contradicts the popular notion that art steers clear of science.

These days, however, where art skirts the realm of industrial technique, it falls prey to the same commercial interests which rule there and which it may have hoped to slip by. Despite itself, the hapless work functions as a commodity to meet the demand for a holiday from commodities. Unfortunately, it necessarily fails to satisfy this real need for long.

The partial truth of conventional understanding is that twentieth century art, when it still packs a punch, registers a protest against the present character of technological society. Paradoxically, perhaps, the work of art must embody, no matter how subtly, the state of technology in order to criticize its contemporary social form.

I. Music and social Being

The art and philosophy of a culture capture more than just the most developed consciousness of a people. Particularly in their structural forms - as well as in their emphases, selection, and transformation of material - cultural artifacts reproduce essential elements of the social context, bringing out the prevailing suppositions and conditioning forces and displaying them prominently. According to Martin Heidegger, the work of art is characterized by its ability to present in an obtrusive fashion its own Being, which it shares with the less dramatic beings around it. Our world, which provides the material of art, is, quite clearly, technological, both in terms of its Heideggerian Being and its Marxian productive powers.

Because art is both dependent and autonomous, expressive of its world yet relieved of immediate practical restrictions, developments in creative realms can anticipate the possible future realization of social and technical potentials which are today suppressed. However, no one can foresee concretely how altered forms of the production process, which Karl Marx showed to be basic to our plight, would manifest themselves throughout society, transforming all interpersonal relations. It is only possible to indicate which repressive forces must be abolished. Artistic anticipation must, accordingly, take the form of critical negations of the past, thereby transcending the economic fetters on existing technology.

Heidegger looks to art and to philosophical reflections on art for glimpses of a new interpretation of reality. However, he does not recognize that the social change necessary to alter perceptions takes place primarily through reorganization of

the forces of material production and social reproduction. His hopes for the future are laced with conservatism and formulated in messianic anachronisms, based as they are on receptivity to a New Word which must spontaneously call to us from deep within our linguistic institutions. He cannot, therefore, recognize the necessity of a social movement for economic restructuring as a precondition of essential change.

Although he has failed to take into account crucial political relations, Heidegger has broken much ground in the task of unearthing a philosophical alternative to forms of thought which correspond to capitalist production. It is therefore important to study as well as to criticize Heidegger's writings; to appropriate but also to transcend his position. Particularly necessary, considering Heidegger's central weakness, is a merging of his insights into art and interpretation with Marx's critical theory of capitalist society.¹

A critical perspective on Heidegger's thought can be reached through an analysis of electronic music's questioning of aural Being as seen in relation to the social context. Electronic music, emerging primarily out of influences from the Schoenberg/Berg/Webern school in the 1950's, adopted a strikingly Heideggerian attitude toward sound. In this it contrasted sharply with classical and especially romantic music, to say nothing of pop. Thus, electronic music provides a particularly appropriate phenomenon for developing Heidegger's categories, which he himself had never applied to music. The relationship of art to technology will, of course, play a decisive role in the discussion of electronic music.

The correspondence between developments in electronic music and in existential philosophy is not accidental. The importance of the social setting against which both rebelled is, however, inadequately recognized by Heidegger's theory. His philosophy, carried to both sides of the front in World War II, has for years exerted a telling influence on the arts and social sciences, in theological circles, and among intellectuals generally; it revived interest in existentialism, hermeneutics, ontology, and speculative philosophy. Yet, despite the centrality of its abstract concepts of history and context, it fails to comprehend its own social, historical, and political posture.² Correspondingly, Heidegger's aesthetic theory is formulated in ahistoric terms and applied to everything from a Greek temple to Paul Klee's watercolors.

Because it has to be concrete, an aesthetics of electronic music can provide a corrective to Heidegger's inadequate self-understanding and his lack of historical specificity. The formal elements and social function of electronic works are essentially conditioned by the struggle against the co-opting of the musician and the corresponding fetishizing of sounds. The specific workings of the commodity form of economic value (which accounts for co-optation and fetishism), not merely vague technological characteristics, penetrate to the core of each piece of music, of any philosophy, and of every being produced in our society.

Analysis of music is, of course, a risky business. In matters of music, discussion can no more substitute for attentive listening than Heidegger's books can replace the experience of Being. Words may only suggest what the ear must know and judge. Heidegger does, nevertheless, make room for prose. His own reflections on art are necessary in relating, for

instance, van Gogh's painting to the ontological character of the shoe as dependable tool and to the revelatory nature of art as the setting-into-work of truth. Similarly, a philosophy of electronic music can conceptualize the new experience of sound and noise as well as explore the relationship of music to the culture industry and to advanced technology.

Theory is particularly important in the case of electronic music; accordingly, the leading composers are important theoreticians as well.³ In this field there exists what Heidegger might call a "hermeneutic gap" between an advanced composition and its bewildered audience. Analytic writings are needed to fill the role of Hermes, god of interpretation, providing the orientation and concepts which facilitate understanding. Where no common tradition ties a work of art to its perceiver, as with a poem in a forgotten tongue or the ritual of a strange culture, the work cannot speak for itself. In the case of electronic music, the historical ties to familiar forms are part of few people's experience. Prose must join the music in helping an audience bridge the chasm.

The difficulty electronic music presents to most ears requires a training for the future, rather than the retrieval of past traditions which Heideggerian themes stress. To be sure, electronic music wishes to recapture, for instance, the strivings of medieval music which led to the major and minor keys, long since become second nature. It does this through a critique of the traditional system of pitches and scales. The liberation of sound and the new schemes developed to exploit it only make sense in reference to so-called classical music up to Arnold Schoenberg. However, the goal of this critical recapitulation is to move beyond both past and present by confronting them from a future-directed perspective.

The critical thrust of electronic music has a political form different from music commonly taken to be progressive social protest. The difference corresponds to the contrast between the aesthetic implications of Heidegger's meta-ontology, or history of Being, and those of an orthodoxy which traces its philosophical roots to liberalism or to Lenin. Where protest songs speak out against injustices within one musical tradition or another, electronic music seeks to transform the language of music itself. Carrying out its project through electronic means, this experimental music re-forms technological practice and re-thinks - in aesthetic, acoustic terms - the technological mentality which Heidegger considers so central. Electronic music aims at a new mode of auditory existence.

Where there has been a social movement against the status quo, its music has had an explicit political force. This is not only true for the marching songs of revolutionaries or the propagandistic lyrics which follow upon the seizure of power. Recent American music, too, has a lively history of protest. The slave and his oppressed descendants sang out against their troubled lives in the rural blues. Jazz then incorporated the bustle of industrial life and the syncopated clank of machinery into a continuing series of improvisational styles which relentlessly rejected accepted patterns of performance. In the 1960's, protest folk songs articulated an alternative politics in a native idiom. For teenagers, rock and roll came to symbolize their side of a generation gap; as they grew into the drug sub-culture, rock moved as far out as was still profitable.

If there is no alternative social base, straight-forward methods of simple anarchism cannot succeed. Not the simple

abolition of the present state, but its specific negation, its transformation into a qualitatively different organization, is required. In music as in politics one must start with what exists, criticize its faults, and set about eliminating the sources. The necessity of this procedure is due in part to our inability to imagine anything too different from what we already know. Our situatedness opens our possibilities by establishing their limits, although it is also true that we alter our situation, and hence its limitations, when we actualize what was latent.

A materialistic respect for the importance of situatedness unites

Heidegger and Marx in opposition to the German Idealism out of which both developed as well as against most competing social thought. Where Marx concretized the given situation, which embodies the preconditions for change, in terms of the technology of production and its social organization, Heidegger, particularly in his early work, focuses on how people understandingly exist in the context of all contexts: the world.

II. Sound out of context

Heidegger's *Being and Time* is an extended reflection upon the consequence of the fact that human existence is a matter of being in a meaningful context. According to its theory of interpretation, "hermeneutics," raw reality cannot be experienced as such. Even perception requires a context of interpretation. Disavowing a limited perspective, whether in politics or in art, involves establishing a broader understanding, not rejecting all structure. It is not just human frailty, naïve habit, or social conditioning which causes us to impose categories and to stress certain aspects above others. The nature of comprehension specifies its own requirements.

To be effective, the refusal to support all that the silent majority condones necessitates the avowal of a more sophisticated politics. Analogously, a musician who balks at the impositions of commercial interests must develop a new music - a more authentic music, to echo Heidegger's jargon. What is minimally called for is a context of one sort or another in which interpretation can take place with intersubjective validity. A deed must, that is, be perceived as situated within the political arena or it will remain politically meaningless, unperceived. In the auditory domain, the same holds true. Sounds are never heard indeterminately, but always with a more or less distinct character, as belonging within some category, however vaguely defined.

Heidegger puts it this way in *Being and Time*:

What we "first" hear is never sounds or complexes of tones, but the creaking wagon, the motorcycle. One hears the column on the march, the north wind, the woodpecker tapping, the fire crackling. It requires a very artificial and complicated frame of mind to "hear" a "pure sound."⁴

Perception is always already interpretation. The sophisticated concert-goer hears certain played instruments, particular

pitch intervals, or specific harmonic relationships. Outside the music hall sounds join images in giving meaningful content to our situatedness in the world. Sound which strikes the ear but is not perceived as the sound of something or as a definite kind of sound is noise. Noise is the refuse of existential understanding.

Music, which thrives on the sensuous character of sound, today rejects the objective references of sounds. It has become increasingly non-representational, abstract. Discarding traditional frameworks of meaning, electronic music borders on noise. This marks the culmination of an historical tendency. Music probably had its origins in mimesis, the imitation of natural sounds, in bodily rhythms, and in holy evocations. Early Western music exploited verbal texts, especially familiar Biblical verse, to facilitate perception, interpretation, and memory, for speech is the most immediately meaningful sound. Later, instrumental music relied upon characteristic sounds of the instruments to facilitate comprehension. To a large extent, what are still perceived in instrumental music are the performer (in nuances of interpretation) and the composer (in structural and emotive intention).

Serious contemporary music has been forced to reject all props to listening. They have outlived their usefulness historically. The names of composers, conductors, and performers have become trademarks which distract from whatever may be behind the names, inhibiting the auditory experience itself. Rebellion against the commercial context has raised the question of just what music is.

Those who wonder if the abstract works which result are still music should recall the many different roles music has historically filled. Music took part in religious ritual long before the ballad served purposes of communication and moral instruction. Folk songs, nursery rhymes, and popular ditties are often structurally related to instrumental dance music, though they serve other functions. Mood music and contemplative compositions meet still different needs. Electronic music introduces further variety and choice. It has, in fact, irrevocably broadened the definition of music. This requires that electronic music not be forced to conform to the old criteria.

Just because instrumental music was not as directly tied to the human body as singing did not mean that either one or the other was not music. Rather, the extended possibilities of the instrument probably high-lighted for the first time the emotive power of the more personal vocal performance. Similarly, anyone who has been involved with electronic music will relate afterwards differently to instrumental and choral productions. More advanced technologies always put their forerunners in a new perspective.

The process of abstraction from structures imposed on music as a result of its social origins clarifies the essential elements of sound. No longer restricted to the pitch and interval ranges of the human voice, the rhythm and meter of dance, or the practicalities of live performance, the new music takes on qualities strange enough to present old sounds as strikingly fresh experiences - provided, of course, that the barriers to listening are overcome in the individual, the culture industry, and the composition in a way which does not reduce all to familiarity.

The clearest examples of abstract music have been in the realms of chance music and electronic music. Music composed

with the use of probabilistic procedures, mathematical schemes, or computerized algorithms shows no trace of human intention. Sounds produced by electronic components rather than by conventional instruments can be kept connotation-free. The abstractness of this music, which carries no suggestion of subjects and objects that could have made such sounds, registers as undifferentiated noise in the ears of those who can't imagine how to relate to it. Such music must develop its own contexts, its own tradition.

Having suppressed the references of individual sounds to extra-acoustic objects, electronic music rejected the ties of musical styles to particular audiences: ages, classes, ethnic groups, and nations. This development corresponded historically to a repulsion against nationalism, particularly in Germany. The non-referential sound eliminated local color, except for purposes of commentary and critique. Abstract and international, electronic music found itself without an audience. In order to keep inwardness and intellectualization from exceeding healthy limits without foregoing the progress made to date, electronic musicians are forced to develop a broader audience by means of their music.

The difficulty at the heart of all contemporary art is particularly extreme here: isolated at elite schools and in scattered studios, the musician has no broad cultural tradition from which to draw material, no critical response to lend him direction, and no responsive audience with which to engage in dialogue. Where culture is annihilated under the pressure of the commodity motive, even those select few who manage to survive find themselves homeless. Paul Klee remarked, when he was part of the Bauhaus movement, that without a social base modern art lacked ultimate power: "*Uns traegt kein Volk*" (1924).

Although Marx disavowed any direct relation between economics and epochs of great art, he could well have pointed out art's social a priori. Even if art no longer can be founded on a general cultural base as in pre-industrial times, community remains essential. Schoenberg's Vienna, Stravinsky's Paris, and Stockhausen's Darmstadt Summer Institute formed preconditions for the music which emerged from these centers. Especially if the romantic ideology of individualism is to be rejected and art is to reveal social Being, intense interaction is necessary, both among artists and with an audience. In our day, the economics of commodity relations systematically destroys community, making art impossible yet all the more urgent.

Audiences must discover their way through the strange terrain of electronic music; they need to learn to hear whatever is at work in structures of abstract, unsituated sound. Fortunately there is an historical continuity, however tenuous, between instrumental and electronic music so that it is partly a matter of time for the so-called cultural gap to be crossed. However, the existence of qualitative differences requires that the new music be perceived in terms which it alone can teach. Heidegger's theory of understanding suggests an approach to this task, for hermeneutics becomes significant in cases of problematized understanding, of disrupted contexts.

III. The situation of understanding

The circularity in having to hear how to hear is an instance of the paradoxical character of all understanding. This "hermeneutic circle" need not be a vicious one according to Heidegger. He resolves it through an analysis of the moment of anticipation which belongs to interpretation:

Whenever something is interpreted as something, the interpretation will be founded essentially upon projecting, fore-sight and pre-conception. An interpretation is never a presuppositionless apprehending of something presented to us. (*BT*, 191-92)

In perceiving a sound, we perceive it *as* something, as the sound of a certain object, instrument, or process, or as a certain kind of sound. To do this, we must have already intended to perceive such a sound, we must be open to the possibility of such a sound, and we must have the concepts for distinguishing such a sound. Of course, our anticipations need not be exact. It suffices that we be open to a range of possibilities which includes the actual sound.

To perceive the surprising, it seems, we must await it; to discover the unknown, we must know what we seek; to comprehend the innovative, we must subsume it under already available categories. Plato's recognition of such circularity led him to the theory that all learning must be remembrance, that we literally did know everything that could be known, although most of us have forgotten almost all of it. Subsequent variations on this theory of knowing attribute preknowledge to racial memory, the subconscious, or world-spirit. The Kantian conclusion, still exerting its influence through Structuralism, is that we are forever limited to knowing that which we are genetically equipped to know. Such consequences are deeply conservative. They imply that human existence which includes social structures - can never change essentially.

Heidegger recognizes the hermeneutic circle and its full implications without falling victim to it. In fact, his entire career can be viewed as a struggle to break free of the circle by spiraling around it incessantly. Heidegger neither mythologizes the fact that knowledge has its prerequisites, nor does he absolutize it. Either approach would abolish history, especially the history of meanings. Rather, he locates a social and historical base of preunderstanding.

However, Heidegger never analyzes the historical or social character of this base in his early discussions. At this point, the ambiguity of Heidegger's work is particularly clear. While brilliantly uncovering crucial relationships, Heidegger consistently refrains from exploring the all-important specifics for fear of lacking profundity. He exposes the ontological cover-up by which Being has successively been obscured since Plato, but he fails to finger the culprit, to point to social forces which carried out the deed and political interests which oppose its reversal.

The attempt to uncover forgotten Being ends in political impotence. Similarly, in the theory of understanding, insight into the possibility of transcending the given is over-powered by respect for the role of tradition. The progressive potential is ignored in the context of the conservatism of Heidegger's personal associates, his self-understanding, and his social

background. None of this is, however, necessary, as the application of the basic principles in the concrete, socially-situated realm of electronic music should show.

Heidegger grasps the hermeneutic paradox by means of an analysis of socially-given everyday understanding. The anticipatory projection, foresight, and preconception which we usually bring to understanding are those which "one" generally holds. Understanding is normally based on conventional wisdom. Such common preunderstanding may get us through the daily routine, but it has its limitations, as Heidegger points out at length.

In *Being and Time* understanding according to what "one" already knows proves insufficient for allowing me to comprehend my own death and thus to deal knowingly with the possibilities corresponding to my own finite temporality. Later essays of Heidegger underline the inadequacy of technological rationality to respond properly to the dangers faced by an epoch which is pervaded by this calculative mentality. Heidegger strives throughout to transcend these restrictions.

The problem with conventional wisdom is that it obscures so very much in the act of making superficial understanding possible. The half-truth character of knowledge gained through the socially prevalent categories and attitudes applies to the appreciation of music as much as to political acuity and existential self-reflection. Without going into the role of the mass media, art, and folk traditions in molding the languages in which we interpret - and hence perceive - sights and sounds, our institutions, and ourselves, Heidegger makes the general point:

Within the totality of its complexly interrelated meanings, the spoken language preserves a certain understanding of the disclosed world and simultaneously an understanding of the being-there-together of other people and an understanding of one's own contextuality. The understanding already deposited in the spoken language concerns the disclosedness of beings which has at any time been achieved and passed down as much as it concerns the understanding of Being then and the available possibilities and horizons for fresh interpretation and conceptual articulation. (*BT*, 211)

Common understanding provides the starting point for any possible transcendence of its limited perspective. No exterior vantage-point of superior knowledge is possible: the walls of convention must be crashed from within when they oppress.

If the established word discloses, it also closes. The phenomenon, frozen in speech, loses its substance even as one gains a handle on it. In second-hand knowledge, one may be caught up in interpreting verbal symbols and fail to understand that which is supposedly communicated. In fact, one scarcely knows how much one has experienced of the reality behind the words. Hearing words becomes believing already interpreted facts. The disk-jockey approves of a hit; the press analyzes a politician's speech; advertising proclaims eternal youth. It is impossible for me to be critical of more than an insignificant fraction of what floods into my ears. Worse yet, my personal experience does not go untouched by all this. Even listening to music, even seeing a politician's actions, even reflecting on myself, the available categories and

approaches have all come handed down to me.

Conventional wisdom rules with an authority and reach that puts the most unquestioned monarch to shame. In politics it makes a farce of democracy, in life-styles it insures conformity. The popular in music is not simply a statistical tendency among autonomous personal tastes, but a self-perpetuating system of interpretation. As long as "one" recognizes melodies in harmonic keys but finds dissonances incomprehensible, popular music will either limit itself to the well-established or find that no one "likes" it. Within the domain of art, the requirement of familiarity stands in obvious opposition to the creativity which is also expected. This contradiction is sharpened by the fact that the artist's own understanding must begin with traditional conceptions and manners of perceiving, although he longs to open eyes and ears.

For Heidegger, public understanding, the system of commonly held meaning-structures, is simply a given. To comprehend interests manipulating or exploiting the public requires social theory. Heidegger's phenomenology of the individual cannot analyze powerful social forces, even though it breaks with the Cartesian tradition by viewing the individual in terms of his physical and social context. Thus *Being and Time*, published in 1927, explains the obedience of the individual to the public subjectivistically, in terms of the individual's *Angst*: I fear for my own existence.

To escape my *Angst*, I turn to the public realm which, according to Heidegger, is divorced from my ownmost, personal existence. Here the concern is exclusively with things in the world or with how one -everyone - feels, thinks, and acts. I can forget my fearful, mortal sense by becoming caught up in a world in which self-reflection is quite impossible. A revised version of *Being and Time* could today refer to the child who lives on Sesame Street, the housewife whose concerns stem from the soap opera, or the sports fan who can only think of the next game. With television one's public world has become clearly visual and aural.

It is characteristic of Heidegger's short-coming that he set out to analyze the structure of human existence without noting that modern life is structured around wage earning, that temporality has been redefined in terms of labor time, that relations to objects are determined by property relations, that needs are met through social production, and that existence is now characterized by alienation. Even in his analysis of society - of being-together and of the public realm - Heidegger fails to see that the commodity form of economic value defines the social Being of working people, of exchanged products, and of cultural artifacts in a society long based on capital investment and accumulation.

In the mid-1930's, when the power of supra-personal forces could scarcely be ignored in Germany, Heidegger carried out a reversal of emphasis, situating the origin of preunderstanding in a movement of autonomous Being, rather than in the individual fearful human being. This movement takes place within linguistic - or prelinguistic - media, whose developments are not to be comprehended in social, let alone psychological terms.

The determination of the way in which all beings are perceived, Being, is given to us historically and preserved within language, broadly understood. Especially in Heidegger's late writings, "Being" refers to the most general level of the form of presence of all beings: as creations of God in medieval times or as calculable material for manipulation in our

technological era, for instance. Again, with no theory of society, Heidegger has no categories for comprehending the historical changes in Being. He can at most catalogue the various forms of Being and, perhaps, discover hints of a possible future form.

Nevertheless, the history of Being suggested by Heidegger may aid in understanding the situation of music. For Heidegger, the development of Western thought has meant the progressive obfuscation of Being. This is the story behind the present dictatorship of the public, which hides the essence of human Being. In a sense, the nature of sound has also become successively obscured since the Greeks, as the perception of it has become increasingly indirect.

The origin of music in experiential time and bodily rhythms was first neglected in the numerological interpretation developed by the pre-Socratic school of Pythagoras, which then proved determinant of Plato's thinking about music. The classical period in music developed extraordinary mastery over sound, controlling it for such intellectual purposes as the elaboration of conceptual relationships as embodied, for example, in counterpoint technique and thematic variation. Romantic music adapted this skill over its object to the subjectivistic task of titillating human emotions and "painting" beautiful pictures.

Auditory experience became subservient to visual or emotive ends and thereby lost its original character. Recent commercial music combines the least aural aspects of folk, classical, and romantic styles. Sound as such has long since been forgotten in the scurry to control and exploit it. This is certainly one component of what Heidegger conceives as the pervasive oblivion of Being. Following its own historical course, but not accidentally, music, too, adheres to the general tendency.

The historical and social context of music in our century, particularly since World War II, poses a dilemma for composer, performer, and music-lover. In order for music to be intersubjectively comprehensible, it must be expressed in a language which veils sound under layers of extra-musical meaning. Music which rebelliously thrusts unknown realms of sound at its audience inevitably meets with resistance, fear, and incomprehension.

The dilemma has widened the gap between popular and serious music, whose separation originally had a class base but is now even more fundamental. Not that either extreme can escape the contradiction. Even easy-listening music must inhabit the auditory realm with some semblance of creativity, and that means at least rattling the bars of convention. At the other end of the continuum, the most relentlessly avant-garde composers still need enough of a foothold on familiar ground to communicate among themselves and with an audience, however homogeneous and emancipated. Between the extremes, performances of rock and jazz take their considered stands at various points, and classical pieces are buffeted about according to the understandings of their arrangers, conductors, sponsors, and audiences.

IV. Ontological interrogations of technological sound

Heidegger recommends a way of living within the contradictions and tensions which correspond to the forgetfulness of Being. Even in *Being and Time*, where the circularity of understanding is not historically comprehended, a way out is indicated:

In the circle is hidden a positive possibility of the most primordial kind of knowing. To be sure, we genuinely take hold of this possibility only when, in our interpretation, we have understood that our first, last and constant task is never to allow our pro-ject, fore-sight and pre-conception to be presented to us by fancies and popular conceptions, but rather to make the scientific theme secure by working out these pre-liminary structures in terms of the things themselves. (*BT*, 195)

The battle cry of Husserlian phenomenology, "To the things themselves," takes on a broader significance, proclaiming a method for everyday knowledge as well as philosophy.

In later reflections on the question of uncovering buried Being, Heidegger proposes to "let Being be" and to remain "open to Being." The obscuring of Being is found to be a consequence of man's drive for control, the preponderance of subjective will. Rather than imposing our wishes upon the objects being interpreted - perceived or created - we should garner the categories of understanding from the material itself.

The general historical development of will has its exact counterpart in music. Wagnerian opera, which represents a pinnacle of subjectivism not so different from the will-full politics of its fascist admirers, strove to induce definite responses with each thematic stimulus. The listener revels in his responses more than he listens.

The complete rejection of such will in music would be an arrangement in which sounds existed which had no relation to human intentions. The ideal would be an auditory environment in which composer, performer, and audience would no longer perform their traditional functions, but would all be "tourists," in John Cage's provocative metaphor. Traveling together through strange sonic terrain, they would have to comprehend the foreign language without a guide's assistance.

This straightforward approach, largely adopted by an American school of experimental composers inspired by Cage, corresponds to certain pronouncements of late Heidegger. The difficulty with the acoustic processes and events which they let happen is that the sounds which result are too likely to be understood with the chauvinism of a condescending tourist, by whose standards the natives are dirty and dull. Visits to such irrelevant auditory experience may provide occasional larks, but they scarcely transform the normal routine. For a "happening," whether of sounds or of Being, to be appropriately perceived, the proper attitude is already required. Anticipation is, however, originally and usually based on common understanding, as Heidegger early showed.

Electronic music, a European movement in which Karlheinz Stockhausen, Iannis Xenakis, and Pierre Boulez can be

singled out as important composers and theoreticians, incorporates the proposals of early as well as late Heidegger into the project of opening ears to aural Being. In fact, each of these three representatives has referred to his music as a new form of Being-in-the-world, implicitly citing the outlook of *Being and Time*. A more profound, if less conscious, relation to Heidegger can be seen in their practice of getting at the sounds themselves through critical transformation of the prevailing categories which all too often silence the sounds.

During the last two decades, electronic music has come into its own out of developments in classical music up to Schoenberg, Stravinsky, Webern, and Varese. From the most sophisticated perspective of Western music, electronic composers have systematically criticized the categories which define their heritage. These recent composers accept the challenges which Cage also enunciated, but they relate them to an historical context of interpretation. Their understanding of the tradition which Cage simply rejects allows them to go beyond its limitations through reflection. Reflection is here not exclusively intellectual, but primarily musical and historical, although it has its conscious moment. Electronic technology transforms sound and provides the material precondition for a music which is contemporary in the strict sense of the term.

The electronic transformation of everyday sounds, common musical elements, and background tonal webs has an educative effect. It reawakens the ear from an overly literal, visual world. It educates by leading-out what was implicit but went unnoticed.

Electronic music has an experimental *élan* about it, not just because we are in a transitional period and electronics defines a new medium, but because these works lead the listener on an exploratory path through the universe of sound around him. Intimations of warfare, space-age movement, and motoric rhythm in electronic pieces are only the most obvious instances of this. Electronic technology gives us our world, particularly its noisy acoustic dimension; Stockhausen, always one to draw the radical conclusion, stresses that electronic music should sound electronic.

Two reasons for electronic music's experimental quality can be given in terms of its social context. Recent composers reject the props to listening exploited by commercial music, arrangements of romantic music, movie sound-tracks, television backgrounds, and advertising jingles. They are thereby forced to search for new approaches less manipulative of their material and their audience. Techniques suggested by the electronic instruments are tried out, judged by the ear, varied, explored. Encouragement of the unanticipated becomes the paradoxical goal. The listener, too, must remain open to the unknown, struggle with a work's meaning, and draw conclusions.

Secondly, the use of generalized technical equipment for synthesizing sound structures creates its own world of possibilities, circumscribed by the use of one or more loudspeakers. This largely unexplored realm calls for new emphases and for divergences from practices appropriate to instrumental music. Traditional instruments were developed with the triadic chord in mind and expressive interpretation as a primary goal. Now, with synthesis by means of scientifically standardized circuits, the elements into which the technician can analyze all acoustic phenomena assume a major role.

Theory of sound emerges in the practice of electronic music with thematic prominence. Because everything must be built up from scratch from abstract temporal orderings, that is certain effects unrealizable with an orchestra can be achieved more easily than can simple harmonies. Previously unimaginable sonorities and the whole range of temporal intervals are readily available. Through careful splicing of tape or with the aid of electronic control, the most intricate rhythms can be produced.

One useful formal approach to an electronic composition is to select a potential of the medium and to explore it systematically, cycling through the various possibilities under a series of conditions, much as Husserl used to vary the thing-itself in imagination. The parameters of permutation can, as in several works by Stockhausen, mediate between polar extremes of some compositional factor such as interpretational determinacy or timbral complexity. The piece produced by such a more or less autonomous system could be considered an experiment or investigation. Both the formal structure and the sensuous experience resulting are derived from the acoustic material and the choice of system for articulating it. The ring of objectivity is likely to be present, for emotional manipulation has been fairly thoroughly excluded.

The compositional form which results from such an investigatory approach, assuming no traditional form is inadvertently imposed, is that of interrogation or "dialogue," a favorite term in Heidegger's vocabulary. From this orientation, the history of electronic music appears as a series of question-and-answer interchanges between the human ear and physical sound, where both participants essentially belong to the technological age. The work as magnum opus dissolves into an event within a continuing social process. This change in artistic form agrees with developments in social production and political relations: individual objects, machines, personalities, and institutions merge into all-encompassing processes.

V. Revelation's musical form

The processual character of the larger compositional form reflects back on the elements in terms of an emphasis on acoustic patterns. Aspects formerly taken for granted or left to the composer's instinct and intuition are now subjected to systematic inquiry. Melody is frequently eliminated in order to focus attention on the background: general feel, rhythmic support, textural richness, the incidental or the accidental, silence and noise. The technical frame on which melody was formerly draped is now unveiled.

Such shifts in focus imply an altered relation to musical form, not just new forms. Whereas classical concerns with form had to be translated into techniques, technical interests now tend to determine form. The unity of an electronic work and its mode of elaboration must meet dual criteria: they must be appropriate to the technical equipment and procedures while also resulting in a musically aesthetic piece. Form follows.

In his day Bach was admired as a craftsman. The contrapuntal intricacies which now earn him an exalted position as

compositional genius were then primarily means for producing lively, graceful, coherent music. Subsequently, a stage of self-reflection transformed music; the craft became an art; supporting structure assumed thematic priority. The past was thereby subjected to reinterpretation.

Now electronic music takes a further step, exploring the universe within a single note rather than always stressing relationships between notes, as in previous harmonic construction. The atom of traditional music is split. This is a move beyond modernity. It departs from the mechanical *niveau* of form and function.

The new openness to aural Being establishes a context in which every category of music is reinterpreted along with the central notion of form. The new unity which coherently relates the categories redefines, for instance, the relation of form to content, process to event, composition to performance, work to perceiver. That the individual sound is now built up a parameter at a time, carefully put together, literally com-posed, means not only that the momentary event and the process in which it occurs must each be interesting in its own right. It also means that together they must be so intimately related that the process is nothing but the formation or de-construction of the individual sound, the event but a moment in the working of the work.

Criteria and means of performance must be redefined. The complexities of intonation which come naturally to the skilled performer cannot be duplicated electronically, nor is the spontaneity or inspiration of a live performance likely to be matched in the more conceptual new medium. Conversely, acoustic automata could spare the instrumentalist repetitive motions and rote procedures where they no longer serve a creative function. Particularly serialized compositions in the Schoenberg style (where a system of values for each parameter of a note is defined and the values are realized in turn) or stochastic works (in which values are selected by strictly random procedures) are often most sensibly accomplished electronically or with the aid of a computer. The concept underlying a piece, its form of expression, and the manner of its performance are intimately related.

For form to follow the music's experimental character implies experimenting with forms, for here more than elsewhere form and content must be one. To demand that all works adhere to one pattern would be to imitate the mass media, rendering rebellion harmless by freezing one potential into law and advertising it as the avant-garde, which all who wish to be timely must obey. An avant-garde which measures up to its promise is united only in its rejection of the commercially codified; it seeks alternatives everywhere. Each of Stockhausen's pieces, for instance, pursues a different idea: rhythmic permutation, timbral variety, spatial movement, changing essential parameters: total system, human improvisation, pure chance, degrees of determination; vocal, orchestral, electronic, mixed sources. Each idea could become a school, but he prefers to use each as a base for further innovation.

As a work of art, each composition must be able to stand on its own, although some may be inherently more significant and others will appeal more to certain tastes. Differing directions within the avant-garde are interrelated primarily by mutual recognition throughout the art world. They do not fall behind the discoveries of one another. Each successful piece responds to the historical state of the musical materials. Its lesson for future composing is fundamentally critical, not

dogmatic.

The work of art plays an integral role in society by participating in the questioning of Being. The experimental work provides a locus for the revelation of truth. This is, in fact, the sole reason for Heidegger's interest in art. As Heidegger puts it, the origin of the work of art is the setting-into-work of the truth of Being. The character of our world in this age of automated production, computerized information processing, and mass-media communications is, indeed, screamed at us by the finest electronic compositions, wrestling the nature of technology out of the silence of its concealment behind scientific and technocratic ideologies.

Less creative attempts, which manipulate or ignore musical technology according to commodity considerations, only conceal their own basis of existence. Heidegger fails to see the essential antagonisms of modern art toward such forms of entertainment. He consistently trivializes the political implications operative in artistic critiques of commercial culture and the commercialized tradition.

To obscure Being is, however, a politically reactionary act. The impetus behind subjectively imposing structures on given materials despite their inherent characteristics has always been the drive for control: over the environment, one's self, and one's neighbors. The manipulative techniques of pop music serve to maintain existing power relations throughout society. Their removal would clear the way for democratic alternatives in the production, distribution, and consumption of culture.

VI. Composed noise as ideology critique

The labeling of forbidden sounds as "noise" is one mechanism whereby the boundaries of the acceptable are reinforced. Noise is sound which cannot be comprehended either because it is too complex, too unusual, or too fearful. It extends beyond our limits of tolerance. To say that these limits are maintained in order to ward off existential *Angst* is to simplify the mechanisms, which are more essentially social than individual: they serve the interest of social stability, at whatever cost to the individual.

The incomprehensibility which defines noise is peculiar to the auditory domain. Through linguistic training, we expect sound to be meaningful. But language is conventional, compared to visual and tactile objects, thus requiring more strain at interpretation. Accordingly, there are differences between the experiences of non-representation in visual and in musical art, between the corresponding senses of artistic illusion, and between the respective possibilities of mediating representational with non-representational images and sounds. Listening to electronic music is the best way to observe these contrasts.

Contrary to Heidegger's view, electronic music teaches that meaning in sounds - including speech - is not so spontaneously "given" as in sights and touches. Language is a product of social, i.e. human, traditions, not of autonomous

self-appropriation. In the visual or tactile dimension things may appear somewhat differently. Common sense philosophers who beat their breasts and stub their toes to prove the existence of the real world suggest that the materiality of what is seen and felt is not the result of subjective convention. However, even here the form and significance of, for instance, this printed page comes from a complex system of social institutions: its message has its place in cultural production, and its physical manifestation was produced by wage-labor to be sold. The Being of this particular being is scarcely independent of the actions and relations of humans.

The new music reveals the conventional character of traditional sounds and compositional devices; it calls for a more creative, less certain approach to aural understanding. Electronic music, which hopes to re-educate our ears on the basis of what they already recognize, deals extensively with noise. The ability to mediate between tonal purity and noise is as important to today's composer as doing the same with sound and silence.

Stockhausen sees the limitations as technical difficulties. He credits Anton Webern, who is famed for thoroughly integrating silence into his works to stress individual sounds, with going as far as instrumental music can in organizing the parameters of sound. However, the exclusion of noise from music has its historical and social as well as technical sources. The continued resistance of popular music and its public to anything approaching noise, even the dissonances of twelve-tone works, confirms this.

Chaos in sound is disturbing; we must either struggle to discover meaning or flip off the switch. The Renaissance craft of ordering tonal compositions has sufficiently refined itself and educated us to the point where we can enjoy a complex orchestral symphony without a twitch. The techniques of control over the organization of sound, originally promoted by the royalty, long preserved in the conservatory, and now categorized but scarcely comprehended, are, unfortunately, today used by rote - for non-musical motives. ~

Laziness reigns over producer and consumer, who are, after all, only out to make and spend money. Maintaining the status quo requires that only select reflexes be trained, that nothing demanding be ventured, that the unknown be kept out of knowledge's reach. With all else hidden, order, balance, and clarity appear to reign naturally in the kingdom of sound, as on earth.

Mastery over the musical material has been transformed into the pretense that there is no noise. The vulnerability of such an illusion in a world of machinery, advertising, chatter, and television makes the gullible victim that much more defensive when ruling dissonance out of the definition of music. Only those who intuitively rebel against sweet commercialism, consciously break the bonds of convention, and forcefully overcome the dominant alchemy of sound can move freely between harmony and noise, demonstrating that freedom from the fear of noise is possible on the basis of a new and renewed approach to aural Being. Electronic music makes a science of the struggle to come to terms with noise.

Rebellion against accepted forms took place throughout musical history, often leaving shocked, indignant, offended audiences behind. In America, blues, jazz, rock, and avant-garde music have known this tendency. The history of

American music appreciation could, no doubt, be written in terms of the taming of criticism through the popularizing of its spokesmen.

Co-optation works through such strong mechanisms that no individual can withstand them. The contrast of the popular hits of any rebellious performer or group to their most original works reveals this enormous power. The paradoxes which confront the musician who strives to be both critical and popular leave unintelligible most of what he has to offer. The price he must pay to offer anything is to have his music systematically misunderstood. Electronic music is, of course, likewise threatened.

If our culture permitted us to pronounce only vowels, insisting that consonants offended the ear, were irritating and unnatural, then it would be necessary to overthrow convention for the sake of communication. Such a situation would be more than just vaguely analogous to commercial music's relation to noise. The soothing vowel sounds of sweet melody may be capable of expressing in stereotypical manner certain non-disruptive emotions, but they scarcely encourage thoughtful creativity, let alone justifiable rebellion.

It is no more accidental that we are taught in school and church to sing with the vowel-dominated syllables do, re, mi than that the gruff curses of the working-class are suppressed in favor of the tones of romance so dear to aristocracies and their supporting institutions. Curt four-letter words, culminating in hard consonants, articulate too much of the anger which stems from exploitation - both material and spiritual. Popular music today continues the teaching of harmony and restraint, at most permitting a cathartic release of violent feelings.

While it may be that the ever-popular love song has always spoken more of the nightingale's melodic warbling than of crude physical urges, it is also true that the recent mass character of culture has ultimately failed to change this. The spread of culture from the leisure class to the leisure time of all has scarcely democratized the values and interests incorporated. They have only been further imposed on those who have less to gain from the social arrangement which mass culture buttresses. Abhorrence of noise, an anachronism in industrial society, remains with us as a social phobia indicative of our subservience to economic shackles.

In a technical sense, noise is pure sound. White noise consists of the whole spectrum of possible pitches simultaneously sounding, and that excludes all melodic or harmonic relations. Scientifically speaking, noise is unorganized sound, that is, strictly random changes in air pressure. Consonants, dissonant chords, and over-loaded timbres approach this in their relative lack of sustained acoustical structure. They are primarily recognized by the shifts and changing patterns of emphasis, pitch, and overtones.

VII. Controlled receptivity

Noise is sound so complex that auditory understanding cannot handle it. Accordingly, compositional control over noise

must be more sophisticated than that over pure pitches, clear melodies, and harmonic chords. Electronic music, which is determined to eliminate the subjective willfulness inherent in the suppression of all noise, requires increased control over its materials. The mastery of noise through control grants electronic music the critical distance lacking in the earlier "noise music" of the Italian Futurists, who ended up glorifying precisely those social phenomena which must be criticized.

Theodor W. Adorno, an agile dialectician, examined the contradiction in which extreme control is necessary for the Heideggerian goal of letting sound "be." Writing at almost the same time as Heidegger, Adorno, who taught philosophy and sociology at Frankfurt, reinterpreted many of Heidegger's insights within the context of a non-orthodox Marxist social theory. A leading musicologist who had studied in Schoenberg's school, Adorno brought the philosophical issues to bear on music at the time that electronic music was being born.

Although Adorno's social critique of pop music opened a dimension scarcely suggested by Heidegger, his discussion of control in the following passage reveals strong affinities to Heidegger's position:

If art truly wishes to renounce the domination of nature, if it stands for a time in which men no longer exert domination by means of spirit, then it can only achieve this through the power of the domination of nature. Only a music which is master of itself would also be master of the freedom from every constraint, even from its own. This follows the analogy that only in a rationally organized society would the necessity of oppression by organization disappear along with want. . . . But the domination of material, as a reflection of the composer's ear, must advance itself self-critically, until it no longer finds itself confronted with heterogeneous material. It must evolve into the form of reaction of the sort of compositional ear which at the same time passively appropriates the tendency of the material. The consequence of artistic technique as truthful domination is always simultaneously also its opposite, the development of the subjective sensibility into a receptivity toward the impulse of that which is not itself subject.⁵

In numerous analyses, which are historically concrete in ways which Heidegger's are not at all, Adorno focuses on the interplay between the historically- and socially-situated composer and his material, which is historically- and socially-given. For Adorno, sound is not to be analyzed into simplistic elements, as an ahistorical science of acoustics would do. If sound can be manipulated in terms of amplitude and frequency or duration and spatial location, that is itself partially a result of our scientific age. Further, it is a consequence of the history of Western music, including, not least of all, developments within electronic music and its precursor, serialized music.

Through the evolution of musical traditions, knowledge of sound increased. More and more pitches became intelligible: the octave, fifth, fourth, the eight-note tonal scale, Schoenberg's twelve tones, unpitched abstract sounds. Simple repetition gave way to increasingly complex rhythms, syncopation, and polyrhythm. From natural and vocal sources, mechanical instruments were developed, and then were transformed electronically. The production of sound has always adapted general productive techniques to its own uses; composers have responded to technology by seeking out its

unknown resources.

With the advent of the electronic construction of sound, a radically new stage in the relation of music to technology has been reached. The historical dialectic now comes under the kind of conscious, creative control that Marx envisioned for the relation of productive forces to social relations but which Heidegger judged impossible for the ontological difference between Being and beings. In music, at least, the composer can determine the character of the materials of his utopia to whatever degree of precision he desires.

Available acoustic material has varied with each age. For Adorno, musical material must be conceived as that with which a composer works. This is, however, nothing but the objectified and critically reflected level of the technical means of production which the composer finds at his disposal. The language in which composers expressed themselves was scarcely something over which they could freely dispense. Classical forms like the sonata were, in their day, more givens than freely elected modes of presentation.

If the traditional forms have been rejected as too confining by electronic composers, then new categories must be developed. The articulation of sounds by creator and by perceiver requires this. The new material, on the other hand, calls for categories appropriate to it. Since, however, the material is not static, but, as evolved, still open-ended, it will itself be transformed through the compositional and interpretational process. Truth to material implies more than just the skillful manipulation of already available materials.

The secret of composition, says Adorno, is the power to transform the material in the process of progressive adequation. Where it achieves this, electronic music provides a model of an openness to Being which forswears the imposition of will in favor of an appropriation which lets Being be what it historically could be. Here, more than in any of Heidegger's own writings, it becomes clear how much fine-tuning attunement requires.

The example of electronic music also demonstrates the possibility of an active process of bringing about a new epoch of Being. Although Heidegger insists that we must wait for destiny to descend mystically, his own theory of interpretation, with its potential for transforming common understanding, provides a foundation for a more active approach.

Adorno develops that foundation through a dialectical mediation of passivity and activism, openness and domination. A difficult unity of control and receptivity is required. Understanding, which must start within limits, can be led beyond them - by the lure of what is to be understood and by means of what is already understood. History, which conditions both interpretation and that which is interpreted, provides a medium for bringing about change on the basis of those past changes which have given us the present.

It is part of electronic music's dialectical character that it transcends fear of noise through human control and dispenses with subjective control through fearlessness; that it surpasses subjectivism with mathematical means and returns thereby to human perception; that it replaces the performer with technology in order to free humanity from the machine. If Greek music symbolized an urgent and progressive mastery over the elements, electronic music demonstrates that such control

is no longer an issue. The domination still at work in popular music is that over large segments of society, not over an alien cosmos. Electronic music shows that a new, unexploitative relationship to sound is now technically feasible, indicating that the artificial preservation of a monopoly by the old attitudes of control only serves socially repressive ends.

The kind of control which fosters receptivity is an historical product of technological progress, that is, of the development of willful control to its logical conclusion. Heidegger believes that technology must play itself out and reach its end, which is co-terminus with the elaboration of its origin; before a new epoch of Being can begin. Less idealistically, Marx interprets the Hegelian doctrine in terms of the bourgeois industrial revolution providing the technical precondition for truly socialized production.

Marx is not being sarcastic when he calls the wage-laborer "free"; the emancipation from traditional feudal social positions is a necessary stage in the elimination of domination even if it involves subjugation to the dictates of capital. Marx lauds the bourgeois era for its systematic universalizing of human powers and of productive processes. With the liquidation of feudal relations, society is potentially flexible enough to allocate its resources where needs arise. The only problem now is that production is used to maximize capital rather than to respond to need. Electronic music actualizes the potential within the realm of sound, producing universally without the natural limitations of traditional instruments or the social restrictions to accepted styles.

To the extent that electronic music points the way for everyday, productive life, it is implicitly revolutionary. The confrontation of instrumental with electronic music redefines the realm of the distinctively human for the present age. It thereby argues for relieving human activity of all that has become inhumanly repetitive. Harnessing the technology of automation to the requirements of control, electronic music suggests possibilities for the realm of labor, the manipulation of nature par excellence. The automation of controlled processes could establish a new form of harmony between worker, work, product, and consumer. Technology in such a context would bear little resemblance to the nineteenth-century factory. Alienation is not a result of technology per se; this is the message of technological music. It is not for naught that electronic music so frequently sounds like a protest against alienation in technological society.

Technology's concrete, capitalist "form of appearance" (Marx) or ontological "form of presence" (Heidegger) must be transformed. Within the categories which define the social fabric, the creatively human must be effectively distinguished from the repetitively mechanical. Ideally, a new structure could thereby coalesce in which people are no longer mere adjuncts to machinery or receptacles for commodities. New economic ties would be a first prerequisite for such different relations among beings. In its contrast to industrial applications, the thoughtful and appropriate adaptation of electronics to musical endeavors, free of over-powering profit constraints, suggests that technology elsewhere can also foster Marx's goal of a humanized nature and a naturalized humanity or Heidegger's vision of a unity of the mortal and the holy, nature and the heavens.

However, art can never effect social change by itself. Those art forms which could instill revolutionary consciousness cannot, by their nature, become widely accepted until material transformations are at least well under way. But to those few individuals who have both the intellectual energy and the economic autonomy necessary, works of art can speak as witnesses of objective potential.

The problem of reaching a wide enough audience has yet to be solved. All that has been shown is that neither pandering to the habits of the public nor ignoring them, neither accepting given techniques nor ignoring half-concealed potentials, can succeed. Art must relate to the historical context of its desired audience and appropriately interpret the truth of its own medium.

VIII. Hymns for tomorrow

Within the tradition of rock music, Jimi Hendrix's rendition of "The Star-Spangled Banner,"⁶ performed at the Woodstock concert, goes a long way toward this goal. Unlike most protest songs, this piece does not rely on lyrics; no imported rhetoric, revolutionary slogans, or faddish symbols were necessary. The explosion of notes into the screams of napalm spiraling downward toward its victims forced social and musical questions upon the listeners in subculture America of 1969: What are we doing in Vietnam? Where has our beloved national anthem gone? How can a man with a skinny guitar produce such complex, sliding, noisy, vibrating sounds? You call that music?

The interpretation's critical style establishes a distance, which is carried over to political allegiances. By simply exploring the anthem with its historical connotations, Hendrix's guitar makes it clear that American involvement in Vietnam was no accident. The reasons are already present in the song as part of America's heritage. Hendrix is merely the mediator, interpreting an historical text in a manner suited to a contemporary audience.

The interpretation is appropriate musically as well as politically. In translating from piano to electric guitar, Hendrix does not press the simple, most ordinary elements into the handy mold of established guitar techniques and ignore what was originally unique and significant, the way much adaptation and improvisation proceeds. He uses the occasion to explore the qualities peculiar to his own instrument. He constantly moves from the clear, melodic notes of the piano original to the distortion, vibration, noise, and feed-back characteristic of the electric guitar. Rather than suppressing these effects, he encourages them to develop to the point at which they completely annihilate the pitched tones. Yet they are never uncontrolled. They unfold in precise patterns of rhythmic complexity and tonal variety.

The most traditional music is here transformed into a vibrant electronic composition. The rhythm and intensity which often serve an ideological function in hard rock, making thought impossible under the guise of excluding parents and other outsiders, functions critically instead. The violence which melody struggles to confine and conceal is now released. The listener, grasped through his familiar childhood music and shaken by elements of adolescent rock, is confronted with

the difficult reality of maturity.

Hendrix was not an electronic music composer, although he experimented extensively with electronic modifications of his guitar and succeeded in creating powerful sonorities in his music. His strength was in his interpretational skill; his fingers had absorbed something from every socially critical tradition. Recent releases of early recordings show that he was musically more advanced than his popular recordings indicate; the worst contradictions of commercial music caught him in a grip in which he could not survive. Yet, he revealed a dynamic in rock which is still being both discovered and co-opted a tendency toward what is at work in the electronic music tradition, with the difference that it would have to be more spontaneously expressive and would seek to attract a larger following. Hendrix may have proven the incompatibility of these strivings in our world.

Stockhausen's *Hymnen*⁷ shows how an electronic composer has dealt with the same material as Hendrix chose for Woodstock. In this piece, Stockhausen composes sounds with varying degrees of disorder and noise. The requirements of intelligibility thereby assert themselves forcefully and freshly, rather than being imposed in their traditional, petrified form of harmonic, melodic, rhythmic laws.

Over a period of two hours, *Hymnen* moves from the static of short-wave radio distortion and a jumble of international broadcasts to a utopian world-wide cultural peace by means of electronic control and transformation. The work uses splicing and synthesizing techniques to handle and imitate national music, characteristic sounds, and various noises from around the world. Not only are the musical qualities of familiar national anthems presented with unaccustomed force, but the flavor of their local performance is also clearly articulated. References to "The Star-Spangled Banner" conjure up the exaggerated pomp and pompous chauvinism of American sports events, political rallies, and elementary school assemblies.

Within the symphonic structure of the whole, snatches of immediately recognizable anthems function in place of melodic theme, while they shift register, intensity, and timbre from point to point. Pitch sequences are taken from original scores and used to determine relative amplitudes or durations instead. Purely electronic passages, found material, poetic vocal structures, silences, and the controlled noise of wind, waves, crowds, and breathing are interwoven in a manner reminiscent of Webern's instrumental compositions.

Perhaps most intriguing in Stockhausen's transformation of "The Star-Spangled Banner" is his use of well-known music as raw material for electronic creation. Rather than selecting pure sine-waves at given frequencies, adding overtone structures, and arranging them in temporal sequences, Stockhausen works from complex but more or less recognizable acoustic sources, adjusting their pitch and volume according to need.

The manipulation of familiar material seems to provide a natural way of appealing to a broad audience and introducing a twentieth-century sensibility. Unfortunately, electronic compositions, following the lead of Schoenberg and Webern, tend to use German and French verse or to cite musical sources which are esoteric by American standards. They suggest,

however, analogous compositional procedures which would analyze idiomatic language and popular tunes, appealing to those excluded from the elite of consumers and re-presenting to the senses the flavor of our aural life. Further, the reflection of conventional sounds in an electronic context audibly demonstrates the awesome power of technological media to restructure perception for their own purposes.

Here, as in general, the electronic means of production permit totally new ways of working with sound, different conceptions of music, and a fresh perspective on tradition. Inhabiting the auditory realm, electronic music has broad implications. It encourages an origin-al way of creatively dwelling in the world, of existentially understanding contemporary Being, and of receptively anticipating a new epoch. When perceived as situated in industrial society, electronic music, like Heideggerian philosophy, evokes a radically different form of technology without enunciating its necessarily post-capitalist character or proposing a strategy for realizing the appropriate material context.

Notes

1 I have argued for the relevance of this task in "The Jargon of Authenticity: An Introduction to a Marxist Critique of Heidegger," *Boundary 2*, 3 (Winter 1975). The general problematic, which is pursued in the present article in terms of a specific phenomenon, was discussed with reference to the original texts of Marx and Heidegger in my Ph.D. dissertation, *Marxian Hermeneutics and Heideggerian Social Theory: Interpreting and Transforming Our World*, Department of Philosophy, Northwestern University, 1975.

2 Explicit social analyses of Heidegger and of music lead too far afield for this essay. I rely largely on the work of Theodor W. Adorno. His reflections on Heidegger's position can be found in *The Jargon of Authenticity* (Evanston: Northwestern University Press, 1973) and in *Negative Dialectics* (New York: Seabury, 1973). Adorno's critique of American popular music is most accessible in "The Culture Industry: Enlightenment as Mass Deception," *Dialectic of Enlightenment* (New York: Seabury, 1972) and "Perennial Fashion - Jazz," *Prisms* (London: Spearman, 1967).

3 Examples of rigorous theoretical considerations abound in Stockhausen's *Texte* (in German), Xenaxis' *Formalized Music*, Boulez' *Boulez on Music Today*, and the articles by Stockhausen and others in issues of *Die Reihe* (in English) and *Perspectives of New Music*. Naturally, each of these composers stresses his own concerns, and views history through them. An objective, unsituated, empirical study of the movement I label electronic music would be far less interesting than these engaged intellectual struggles with the musical material, even if such a study were feasible. My own analysis is consciously informed by Heideggerian and Marxian conceptualizations and is directed toward the present American situation. It hopes to carry social force precisely by being a personal statement. While aimed at expressing my perception of actual electronic works, it makes no claim to being an empirical survey limited to what has already been realized. I take such an "unscientific" approach to be consonant with hermeneutic and materialistic principles.

4 Martin Heidegger, *Being and Time*, trans. John Macquarrie and Edward Robinson (New York: Harper & Row, 1962), p. 207. The quoted discussions all take place in the chapter on "Being-in as such." Further references will be incorporated in the text in parentheses as: *BT*. I take *Being and Time* as definitive of Heidegger's early (1927) position; his 1935 lecture on "The Origin of the Work of Art," translated in *Philosophies of Art and Beauty*, ed. Hofstadter and Kuhns (New York: Modern Library, 1964), as his basic statement on aesthetic themes; and the 1962 lecture, "Time and Being," in *On Time and Being* (New York: Harper & Row, 1972), as his final summary.

5 Theodor W. Adorno, "Vers une musique informelle" in *Ouasi una Fantasia* (Frankfurt: Suhrkamp, 1963), p. 432. This article and another in the same volume, "Musik und neue Musik," demonstrate that Adorno was far more open to electronic music than is generally thought. It now seems that the rigor of Adorno's aesthetic arguments and his personal contact with Stockhausen and Boulez stimulated progress in electronic music more than it was stunted by Adorno's controversial criticism of composers who leaped upon the Schoenberg or Webern bandwagon without retaining the creative sophistication of the masters.

6 For some reason this song was never promoted. It was released on the expensive *Woodstock* concert album and gained a certain popularity then. It was quietly rereleased in 1973 on a two-record album of *Soundtrack Recordings from the Film Jimi Hendrix* (Reprise Records). A different rendition of *The Star-Spangled Banner* was recorded five months before *Woodstock* for the movie *Rainbow Bridge* and released in 1971 as part of the sound track to that movie (again by Reprise).

7 *Hymnen* is available as a two-record album import on the prestigious Deutsche Grammophon Gesellschaft label with Stockhausen's liner notes in three languages. Some people take all this as a sign of class character; the extent to which it is a result of the present record industry rather than of the music itself must, however, be questioned. Other works by Stockhausen, such as *Stimmung* (vocally produced music, whose title could be translated as "attunement") and *Mantra* (electronically modified piano music based on a twelve-tone series with an Indian influence) are more popular in America and may provide a less frustrating introduction to Stockhausen. It should be remembered that as sound his compositions are far more intricate than the theories which inspire them. For clear examples of electronic manipulation of given sounds, listen to *Gesang der Junglinge* and *Beethoven Opus 1970*, which transform human voices and well-known passages from Beethoven, respectively. These works are all on the DGG label, but can often be found in university and public library record collections.