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9, AUTUMN, 1990.

pp. 53-60.

"Musicians as Market
Consumers of Technology"

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Not so long ago I was talking to a young musician. He was describing his small home recording studio—complete with synthesizers, samplers, multitrack cassette recorder and effects devices—and his latest efforts in making a demo tape. Suddenly he turned to me and said:

Listen, don't get me wrong. I think this stuff is great, and I use it everyday, but I just know that it's killing music....

On the surface, such ambivalence towards the new instruments of musical production is not unusual: it expresses both an awareness of the creative possibilities offered by new technologies and a feeling that the values and skills upon which musical performance practice has traditionally been based have not so much been eroded as summarily dismissed. Such conflicts are common wherever technologies have been introduced to execute tasks previously performed by skilled laborers. At another level, there appears, however, to be a growing awareness among many musicians that their artistic practice has become deeply implicated with a particular version of technological "progress" and that along with this ideology has come a number of disturbing musical, social, economic, and political dilemmas. These dilemmas are particularly acute in popular music today because over the past forty years popular music has become increasingly integrated with technologies of sound production and reproduc-

tion. More importantly, because the creation of these new technologies has taken place within the high intensity market context of contemporary capitalism, an understanding of the various issues relating to music and technical innovation cannot be separated from an analysis of contemporary social and economic relations.

In the opening pages of her book, *The Social Production of Art*, Janet Wolff states that in the sociology of art, theories of production and consumption have tended to develop in isolation from one another. Wolff's primary interest is in how the "meaning" of an artistic "text" is produced and this is one area of interpretation where she insists that an interplay of theories of production and consumption is required. An integration of theoretical perspectives might also be useful, especially in assessing the uses of new musical technologies. Musicians, for example, need to be considered not simply as producers of music but also as *consumers of technology*. In this sense, musical "production" today is problematic: pop musicians are not just specialized producers of prerecorded patterns of sounds (music) that are consumed by pop audiences. They too are consumers—consumers of technology and of prerecorded sounds and patterns of sounds that they then rework, transform, and arrange into new patterns. Within an appropriately conceived framework then, the analysis of contemporary production practices in popular music would require theories of commodity production, marketing and consumption and use be employed—thus touching upon a range of concerns not often encountered in conventional studies of artistic production.

First, I plan to outline briefly what I mean by the notion of musicians as consumers of technology and, second, to describe some general characteristics of the digital musical instrument industry in the 1980s. Much of what is presented here is speculative research and should not be taken as comprehensive or systematic. It is intended, in part, as a background piece to my essay, "Democracy and its Discontents: The MIDI Specification" (see page 12), which is a detailed study of one aspect of the general set of concerns outlined here.

In order to understand what is meant, in part, by calling musicians consumers of technology and how this concept is related to the current generation of digital musical instruments, an example might be in order. A sampler (and indeed many a synthesizer and drum machine today) is both a musical instrument and a sound reproduction device (see "Plunderphonics") because it fuses two previously separate forms of technology. In many commercial applications, the sampler is used to imitate or reproduce acoustic instrument sounds,[1] which requires that one have at hand a ready

supply of relatively standard prerecorded sounds of guitar, bass drums, piano, and so forth. These sounds are most often simply purchased from software suppliers (who fabricate a large variety for specific styles and genres of music) rather than made by the user. (Indeed, a small but very active cottage industry has developed in recent years geared towards supplying musicians with the kinds of sounds that they need in order to make finished musical products.) In a sense then, using samplers involves selection—an exercise in taste and choice—on the part of users, which is as much like a consumer practice as it is the production of musical sound through conventional instrumental techniques. I do not wish to make any kind of value judgment concerning this type of practice or to imply that musicians who use the new technologies are less active in their music-making than musicians who play conventional instruments. Rather, I would simply like to underline how the character of their practice can differ from more traditional modes of composition and instrumental performance.

A concentration on the selection of the "right" sounds for a given musical context can have the effect of shifting the musician's attention away from other, more familiar levels of musical form and performance practice:

I've been getting into sounds lately...realizing that if something has an interesting enough sound, you don't have to play as much on the instrument. If you get a keyboard that has an interesting sound, you don't have to play a lot of notes on it. The sound *takes over....They're part of the composition, even though I think a lot of people...might see it as being kind of superfluous to the essence of the music. But in this music I think it's really important.* (Marcus Miller, quoted in "Marcus Miller," 22)

Thus, the use of new digital musical instruments can have a profound impact on the conceptualization of musical practice: with the expansion of sonic resources available through new technologies the musician engages with the microphenomena of musical sound itself and such an engagement forces a reassessment of the role of more traditional categories of musical practice. Miller's reflections on musical "sounds" clearly constitutes a "theoretical activity"—a "tactical device" that draws "attention [his own and his listeners'] towards selected aspects of the music-making process" ("Towards a social history...," p. 217).

In pop music, where the pursuit of a unique, personal "sound" is of paramount importance, prefabricated sounds grow stale very quickly. In interviews, musicians frequently complain that the popularity of certain synthesizers, samplers, and drum machines, and a lack of imaginative programming, has led to a sameness in the sound of much contemporary music. The ever-present need

for n ounds, coupled with the speed of technical innovations in the fast-paced electronics and computer industries (where "progress" takes the form of technological obsolescence and is both the rule and the rationale for increased consumption), has become a driving force with which many aspiring musicians feel they must contend:

I could not believe how many possibilities these instruments offered me—particularly the computer and software combination. My only real *problem was coming to terms with the continuing march of technology. A couple of great drum machines were released....Samplers, too, improved dramatically and came down in price. I salivated in shops and wondered how I was going to manage without them.* ("The year of...," p. 24)

It seems to me that recent innovations in musical technology pose two kinds of problems for musicians. On the one hand, they alter the concepts and structure of musical work. On the other, they place the musician, and musical practice, in a new relationship with consumer society and consumer practices as a whole. This perspective differs sharply from more conventional sociological approaches to the subject of artistic production. In his book, *Art Worlds*, Howard Becker suggests that the entire electronic musical instrument industry developed in order to service the needs of rock musicians (p. 309). But by suggesting that this industry is somehow "at their disposal," Becker ignores the mutual dependency that is characteristic of the consumer relationship between musicians and the industry. Becker's perspective is based on the assumption that musical needs arise unproblematically from the creative process itself. Such an assumption prevents one from adequately assessing the relationship between technological innovation and artistic practice and, perhaps more importantly, it leaves aside the whole question of the creation of needs and their satisfaction in a consumer society.

To a certain extent, it could be argued that this state of affairs is not new: musicians have always depended in one way of another upon others to supply them with the musical instruments they use. Indeed, the close relationship that exists between pop musicians, sound reproduction, and the suppliers of electronic musical instruments has perhaps been a feature of popular music production throughout the post-war period: "Performers struggled against the disparity between their recorded sound and their live sound throughout the 1950s and 1960s, and slowly their frustrations were turned into a market by musical instrument manufacturers" ("Notation and identity...," p. 231). But a number of important shifts in the structure of the musical instrument industry and the musicians' market have taken place during the 1980s—shifts that make the current situation quite different, I think, from earlier eras of pop musical history.

Firstly, the decade of the 1980s (and especially the period between 1983 and 1988) has been an intense period of technological innovation in the production of digital musical instruments. This period marks the arrival of custom VLSI (Very Large Scale Integration) in synthesizer circuit designs, the emergence of low-cost FM synthesizers, samplers, and sequencers, and the development of the MIDI (Musical Instrument Digital Interface) specification, which allows these instruments to be connected to one another and to general purpose microcomputers to form complete music production systems. These developments are not simply technical in nature but must be understood in the context of recent shifts in industrial and economic investment: the general rise of business and leisure-oriented microprocessor technologies, on the one hand, and the overall conversion of the music industry from analog to digital technologies, on the other hand (in the area of musical instrument manufacture, this conversion process includes the arrival of a group of instrument designers and business strategists new to the industry).

Secondly, and perhaps more importantly, the mid-1980s have been described as a period of "democratization" of microprocessor-controlled synthesizer technology ("The keyboard explosion," 42–44). More specifically, the notion refers to a shift in industry marketing strategies to bring the cost of digital synthesizers down to levels that were "affordable for the average working musician" ("20 great achievements," 56–59) and later to levels that would attract a consumer-oriented market. As a result of the success of these strategies, the 1980s has been witness to a phenomenal growth in the electronic musical instrument industry and an expansion in its market base. An indication of the magnitude of this growth can be gained through the following comparison: during the entire decade of the 1970s, the Minimoog, a popular analog synthesizer, sold about 12,000 units; Yamaha's DX7, released in 1983, sold over 2 000 00 units in just over three years (p. 96).

Along with this development there has been a dramatic increase in the number of commercial publications that cater to this new market by providing information on products, musical applications, interviews with musicians, and so forth. These popular magazines play a critical role in the formation of technical ideologies and a consumer culture (dominated almost exclusively by young males)[2] associated with the new instruments of production. To the extent that new musical instruments require a degree of formalized, technical knowledge on the part of musicians that is different from traditional musical knowledge and skill these publications perform an important educational role—a role which, in relation to more traditional skills in the field of music, has more often been characterized by lengthy periods of apprenticeship with other musicians.

Fou y, there has been the rise of a new phenomenon in the manner in which musicians associate: users' groups (patterned largely upon similar types of groups familiar to computer culture) have begun to form around specific products as a forum for the exchange of technical information, sounds, and musical ideas. In this sense, the new technologies are not only musical instruments but also have become the basis for a type of communication and social exchange. In certain instances, through their relationships with the manufacturers of musical instruments, some of these user groups have become involved in the process of technological innovation itself. At the same time, both the various publications and the users' groups have also become the vehicles for marketing and promotional strategies conducted by the manufacturers.

Finally, there has been an evolution in the structure of the industry towards a complex set of relations between a number of large instrument manufacturers (several of them based in Japan) and a multitude of small, "independent" suppliers of computer software, prefabricated sound programs, and peripheral hardware devices. The introduction of MIDI during the early 1980s required a certain degree of cooperation between the members of this otherwise highly competitive industry. As a result, several industry organizations were formed where the politics of technical innovation are now played out between big and small companies, producers, and consumers. The rise of a small, highly unstable industry dedicated to the production of software and prefabricated sounds for the musical instruments marketed by the large manufacturers needs to be understood in relation to similar structures of dependency that seem to exist within the organization of the microprocessor industry as a whole, and to the development of a consumer-oriented market within the sphere of the digital musical instrument industry itself.

The various developments outlined above suggest a framework that might include several main areas of inquiry: one area would be concerned with musicians and their use of the new technology as a part of studio production practices; a second, with the role of magazines, user groups and information networks in the formation of a (male-dominated) technical culture around the new instruments of production; and a third, with the structure of the digital musical instrument industry and the process of technical innovation itself, including design and marketing strategies. It should be noted that each of these areas exhibits a certain autonomy and that none could be said to be wholly determining with respect to the others: for example, the experiments of innovative musicians often feeds back into the design of new musical instruments; thus, the sources of technical innovation can potentially be found, at different moments, in any one of the areas outlined above (see *The Sources of Innovation*). But neither should

it be said that this autonomy is complete: while musicians may develop different uses for the technology, such activities do not necessarily challenge the basis of the consumer relationship that exists between themselves and the industry. Such a challenge would require a more organized, political strategy than that of simple "appropriation."

The general framework suggested here might go some distance in helping to overcome the shortcomings in work, like Becker's, that isolate the workings of the "art world" from the rest of society, that fails to integrate the large-scale structural aspects of social and economic organization with the micro-level of artistic practices. Janet Wolff describes technology, along with social institutions of various kinds, aesthetic codes and genres, and the audience itself, as part of the overall preconditions for artistic production. Furthermore, she stresses the importance of technology as a mediating factor between cultural production and the broader social and economic realm and emphasizes the need for an understanding of the impact of market factors and general economic conditions on the production of art (*The Social Production of Art*, 32–48).

Considered in Wolff's terms, the recording studio—the pop musician's most characteristic working environment—cannot be regarded as an isolated arena, but rather, as a site that exists within social, technical and economic contexts. It is also the specific site where musicians make "situated choices" about the sounds, materials and technologies that they use to make music. Such choices may reflect certain musical values, ideological positions, or attitudes towards production and consumption that have been formed elsewhere—through socialization patterns, advertising, and other factors—but which come to be modified by the musicians' own technical practices, knowledge of musical conventions, and conception of the expectations of their audience.

But what is most important for the notion of musicians as "consumers of technology" presented here, is that it be understood that the relationship that binds the musical instrument industry, the magazine and user groups, and the individual musicians and their practices together, is a consumer relationship. With this in mind, it might be possible to explore, in a more systematic fashion, the implications of Bennett's observation concerning the musical expectations and frustrations of contemporary popular musicians—frustrations that have been "turned into a market by musical instrument manufacturers." This could, in turn, lead to a better understanding of the relationship of musicians, such as my young friend quoted at the beginning of this article, to their own material conditions of production and, perhaps, to the wider problems of technological innovation in consumer society.

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Author's note: Some of the ideas expressed in this paper have had the benefit of clarification through discussions with faculty and students at the interuniversity Ph. D. program in Communication Studies, Montréal, and elsewhere with professors Steve Feld and Simon Frith.

Notes

1. The example offered here is not meant to privilege one particular use of the technology over any other. Rappers and others use samplers for a variety of purposes.
2. As in many other areas of the music industry, only a small number of women have reached any degree of visibility as performers, programmers, or writers in this technical culture. In the world of musicians' magazines, most women appear to have been relegated to the role of behind-the-scenes facilitators of talk between males: assistant editors, designers, and production staff. Few are given the right to speak for themselves or their magazines. This sexual division of labor, the specific technical discourses and modes of address adopted by the magazines and newsletters, and the representation of women and technology in popular culture more generally, need to be considered as important factors in the continued gendering of new technologies in popular music.

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