

**SYNTHESIZERS
AND OTHER
HYBRID ELECTRONICA
WITHIN THE
SOCIALY EMBEDDED CONTEXT
OF TECHNO MUSIC**

by

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ABSTRACT

The role of the instrument in the cultural production of techno music is explored by disputing the notion that mechanistic complexity must be rejected in order to maximize social cohesion and human creativity. The unification of historically alienated communities, discourse to demystify subsequent technological innovation, the rise of media and related critical expertise are some of the influences identified that gave relevance to the computer-synthesizer hybrid, electronica. The author uses classical theoretical frameworks offered by Hegel, Marx, and Weber coupled with contemporary cultural approaches espoused by Bourdieu and Giddens to provide support for electronica's cohesive potential. The analysis examines the hybridization of technology in the production of techno music as cultural artifact, establishes the importance of technology and mechanistic complexity in producing techno music, examines the collaborations that have unified artistic, scientific, and technological communities in developing and refining electronica; and explores the extent to which these technological arrangements have optimized human creativity.

KEY WORDS: techno music, cultural mediation, hybridization, electronica

INTRODUCTION

Many social scientists have explored the production of music as cultural artifact, but few have focused specifically on the relationships found within the social context of music that leads to the creation of the musical instrument. Popular dance music, as socially constructed cultural product, can be useful to examine social bonds among typically marginalized members of society. There is no better method by which to examine social bonds among fringe groups than within the contemporary musical genre known as *techno*. This emerging genre of dance music is produced by an unprecedented level of complex technologies involving computerized, electronic, hybrid machines that serve in the place of traditional musical instruments. Though collectively known as 'techno', the genre is actually composed of subcategorical typologies of music distinguished by production and consumption patterns, known as house, hiphop, jungle, progressive, breakbeat, abstract, trance, ambient, and experimental.¹ Techno, as well as her typologies, are largely arranged around compositional uses of the *instrument* creating the music. That instrument is the synthesizer. The traditional synthesizer has been adapted with superior capabilities through its hybridization with computer technology. This hybridization came about as a result of technical collaboration among artists and infomatics engineers. It is precisely this linkage, as well as the socially embedded context which enabled this musical instrument technology to emerge, that will be the focus of this paper.

To illustrate the link between culture, artistic and technical communities (unified through the rise of the synthesizer-computer hybridization), and its offspring musical genre *techno*; use of classical theories at the macrosociological level can make significant contributions to demystifying the link between structural elements and the individuals embedded within techno music's social, technological, artistic, and engineering environments. Classical theories offered by Marx and Weber will be used to provide accounts of the nature of social bonds among individuals, while more contemporary approaches by Bourdieu, Giddens, and Shrum will illustrate the depth and character of these social and cultural musical influences with greater specificity. The analysis to be presented will demonstrate the role of the

synthesizer in expediting these social collaborations, and the instrument's centrality in constructing this unique community.

MARXISM AND CULTURAL PRODUCTION

Marx is most revered for his contributions in demystifying economic relations under conditions of industrialization. His philosophies on social relations are not, however, limited to critiques of industrial participation, and can be used in a broader cultural sense to demystify the relations among individuals engaged in production of cultural artifacts. His essays on fragmentation of human nature and alienation laid an important foundation for analysis pertaining to postmodernism and the deleterious consequences of modernity. Marx argued vehemently against the Hegelian doctrine of the notion of the *dialectic* which had once dominated philosophic literature. Hegel's assertion of the importance of the dialectic was based on Socratic principles and suggested that knowledge was systematically built upon

alienated from their own unique essence. Deleterious influences from industrialization do not end here, for Marx extends the argument further by suggesting that the process of cultural production also alienates us from one another, and further attenuates social bonds that would otherwise, under natural conditions, flourish. As depersonalized and mechanized individuals, we become unfulfilled in our human potential, our unique distinguishing characters become eroded, and the resulting state of unnatural fragmentation resulting from mechanization begins to permeate and disintegrate the very fabric of society.

Is this fragmented, alienated state and its related attenuation of social bonds indicative of a decline in our cultural progress and an inevitable sign of man's catastrophic destiny? Marx extends Hobbesian notions of humanity's relationship with nature, and suggests that a return to organic harmony away from mechanistic pursuits will return us to a collective state of equilibrium. The phenomenon of increasing mechanistic alienation and fragmentation, Marx suggests, is becoming universal, because all humans must produce activity in order to survive. Our sustenance, however, increasingly requires us to be detached from our own creative nature, requires us to be removed collectively from our universal environment, and requires that we withdraw away from one another due to our individualization embedded within the evolving social structure. Marx fears that increasing detachment from our own natural creativity in the production of cultural artifacts will inevitably lead to the weakening of our relationships to the self, to nature, and to one another. Is a return to human unification and harmony possible without rejecting our increasingly mechanistic industrial society? Is the rejection of machines and related mechanistic technical accouterments of industrial complexity truly necessary to enable humanity to optimize creativity and assure us of our cultural potential?

While I agree with the fundamental principles of Marx's social, cultural, and philosophic critique, I argue that the rejection of postmodern mechanistic technological complexity is not a necessary precursor to the process of cultural production and hence optimization of human creativity. To the contrary, I will argue of the *utility* and *necessity* of mechanistic technological complexity in *expediting* human cultural productivity, creativity, and harmonization. In the current analysis, I intend to examine the hybridization of technology in the production of techno music as cultural artifact, establish the importance of

technology and mechanistic complexity in producing techno music, examine the collaborations that have unified artistic, scientific, and technological communities that were previously fragmented but have together fostered the synthesizer-computer hybridization necessary for techno production; and finally, explore the extent to which these socially embedded arrangements have optimized human creativity.

SOCIAL RAMIFICATIONS OF COMPUTER TECHNOLOGY

rooted in technological transformations of the workplace, have fueled racial, gender, and ethnic antagonisms among workers (Roos 1985), produced a fractured labor force (Pagels 1988), eliminated pride in goods or services produced, and appear to be fulfilling Marxian prognoses regarding alienation.

Conversely, supporters of computer technology have suggested that technological changes advanced by the computer technology revolution will be an important mechanism for the fulfillment of human potential. Information technology is expected to facilitate equality and bring about equilibrium to the existing social, economic, and cultural order among both industrial and underdeveloped societies. It has also been suggested that IT may eventually render other mechanism of human expression obsolete.

One of the most important mechanisms of human expression lies in the cultural production of music. Music as cultural artifact has been significantly influenced by computer technology under conditions of postmodernism. Because production of music is an important area of cultural expression, and to explore the impact of computer technology in the production of contemporary dance music in greater detail, it may be useful to identify the community involved in the production of techno music. To that end, Weber's concept of *elective affinities* can be particularly insightful.

ELECTED AFFINITIES AND SOCIAL ACTION

In Weber's notion of *elective affinities*, he argues that some elements in society go together more naturally than others. Though his work focused on religion as cultural artifact, the current treatment will incorporate the useful concept of elected affinities to demystify techno music production. Before the emergence of hybrid synthesizers and computer technology, artistic and technology communities were bifurcated and had little integration. With the rise of synthesizers and other electronica, the two juxtaposed communities have become unified. The new worlds integrating arts with science and technology have since become unusually harmonious and tightly calibrated. What circumstances have enabled these harmonious postmodern collaborations to be brought about ?

² Sclove in Brooke and Boal, p. 87

Weber views social action as essentially a *rational pursuit of self-interest*. He argues that both

from this polarization, that was largely responsible for its integration. Let us now examine the discursive elements that solidify and harmonize the otherwise fragmented artistic and technological communities comprising the techno industry.

PRIMACY OF DISCOURSE

Bourdieu examines artistic taste, judgments, and preferences using social, cultural, and economic indices for artistic consumption. In his investigation of artistic taste and cultural consumption, Bourdieu argues of the importance of *origins* of taste, which he claims is developed through family exposure to artistic cultural products and formal education. According to Bourdieu, cultural exposure in the home, coupled with proper formal education, will inculcate the necessary appreciation for the accouterments and discourse of cultural consumption. In order to accept the assumptions of Bourdieu's analysis, one needs

DISCURSIVE ELEMENTS OF TECHNO MUSIC

No where is the importance of discourse more obvious than in the genre of techno music. Discourse among techno consumers is constructing an entirely new vocabulary of language, incorporating onomatopoeiatic bells and whistles with technical engineering and software language. This language includes musical arrangement and compositional techniques, computer processor efficacy evaluations, empirical software assessments, cost-benefit calculations, strategic planning criteria, and even emotional, sensual, critical, psychotropic drug, and other commercial considerations. In contrast to the classical musical discourse Bourdieu examined, *techno musical discourse* is constantly changing and appears to be as inclusive, far-reaching, and interdisciplinary as possible. The inclusion of arts, technology, computer software, and musical composition has harmoniously integrated and given rise to such an unusual hybridization of language, unlike any that has ever been invoked to decipher previous art forms in the history of cultural production.

producers and recording industry executives, promoters and engineers, composers and musicians, even casual internet browsers and platform managers. These diverse constituents involved in techno music both consume as well as produce SOHE [synthesizer and other hybrid electronica] to some degree. The complexity involved in SOHE technology has resulted in the erosion of the line between consumption and production. This erosion is due to swift access to new software, the need to engage in proactive innovation to assure technical compatibility with existing SOHE electronica platforms, and the need to disseminate or transfer new technology before obsolescence occurs and hence demand diminishes. As such, the members of this SOHE electronica hybrid community developed a complex techno musical vocabulary to assist in the development, production, and consumption of new hybrid instruments, compatible software technologies, and the necessary hardware to interface these platforms. Harmonious communication among these technical and artistic communities has resulted in a complex language that is constantly changing and almost impossible for an outsider to decipher. As predicted by Marx, the rise in complexity of language and the need for broad understanding among affected individuals in the age of authority relations has led to the postmodern rise of the *expert*.

of artistic consumers through wider dissemination of culture through the role of the critic. Consequently, social action and participation in artistic culture (through both consumption and production) is contingent upon adequate access to mediating expertise. The rise of mediating experts has enabled discourse to be more inclusive than ever before, and enabled artistic discourse to be more broadly disseminated than in any time in our human artistic development. Consumption of artistic cultural production, in Shrum's view, is now highly accessible through mediating expert influences. Consumption patterns have taken on a function of discursive practice, and fluency in relevant language therefore, mediates the relationship between artwork and the public.

Who then is this knowledgeable, omnipresent, mediating critic ? The author suggests that the critic's primary responsibility was 'to know and to make known.' This already implies a *filtering* mechanism in communication, inherent by nature of the vocation. The critic's mediation is expected to impart wisdom to an unknowing public, to apply strict criteria from a knowledgeable standpoint, and to do so with consistent standards. A critic is primarily responsible for public education, discourse facilitation, and assessment of quality of cultural artifacts produced. The critic's expertise will be most readily determined by thorough and direct experience, coupled with proficiency of specialized knowledge.

THE COMPONENTS OF CULTURAL LITERACY by E. Douthett, p. 22-24, 25-26, 54-55, 60-61, 63-64, 66-67, 69-70, 72-73, 75-76, 78-79, 81-82, 84-85, 87-88, 90-91, 93-94, 96-97, 99-100, 102-103, 105-106, 108-109, 111-112, 114-115, 117-118, 120-121, 123-124, 126-127, 129-130, 132-133, 135-136, 138-139, 141-142, 144-145, 147-148, 150-151, 153-154, 156-157, 159-160, 162-163, 165-166, 168-169, 171-172, 174-175, 177-178, 180-181, 183-184, 186-187, 189-190, 192-193, 195-196, 198-199, 201-202, 204-205, 207-208, 210-211, 213-214, 216-217, 219-220, 222-223, 225-226, 228-229, 231-232, 234-235, 237-238, 240-241, 243-244, 246-247, 249-250, 252-253, 255-256, 258-259, 261-262, 264-265, 267-268, 270-271, 273-274, 276-277, 279-280, 282-283, 285-286, 288-289, 291-292, 294-295, 297-298, 300-301, 303-304, 306-307, 309-310, 312-313, 315-316, 318-319, 321-322, 324-325, 327-328, 330-331, 333-334, 336-337, 339-340, 342-343, 345-346, 348-349, 351-352, 354-355, 357-358, 360-361, 363-364, 366-367, 369-370, 372-373, 375-376, 378-379, 381-382, 384-385, 387-388, 390-391, 393-394, 396-397, 399-400, 402-403, 405-406, 408-409, 411-412, 414-415, 417-418, 420-421, 423-424, 426-427, 429-430, 432-433, 435-436, 438-439, 441-442, 444-445, 447-448, 450-451, 453-454, 456-457, 459-460, 462-463, 465-466, 468-469, 471-472, 474-475, 477-478, 480-481, 483-484, 486-487, 489-490, 492-493, 495-496, 498-499, 501-502, 504-505, 507-508, 510-511, 513-514, 516-517, 519-520, 522-523, 525-526, 528-529, 531-532, 534-535, 537-538, 540-541, 543-544, 546-547, 549-550, 552-553, 555-556, 558-559, 561-562, 564-565, 567-568, 570-571, 573-574, 576-577, 579-580, 582-583, 585-586, 588-589, 591-592, 594-595, 597-598, 600-601, 603-604, 606-607, 609-610, 612-613, 615-616, 618-619, 621-622, 624-625, 627-628, 630-631, 633-634, 636-637, 639-640, 642-643, 645-646, 648-649, 651-652, 654-655, 657-658, 660-661, 663-664, 666-667, 669-670, 672-673, 675-676, 678-679, 681-682, 684-685, 687-688, 690-691, 693-694, 696-697, 699-700, 702-703, 705-706, 708-709, 711-712, 714-715, 717-718, 720-721, 723-724, 726-727, 729-730, 732-733, 735-736, 738-739, 741-742, 744-745, 747-748, 750-751, 753-754, 756-757, 759-760, 762-763, 765-766, 768-769, 771-772, 774-775, 777-778, 780-781, 783-784, 786-787, 789-790, 792-793, 795-796, 798-799, 801-802, 804-805, 807-808, 810-811, 813-814, 816-817, 819-820, 822-823, 825-826, 828-829, 831-832, 834-835, 837-838, 840-841, 843-844, 846-847, 849-850, 852-853, 855-856, 858-859, 861-862, 864-865, 867-868, 870-871, 873-874, 876-877, 879-880, 882-883, 885-886, 888-889, 891-892, 894-895, 897-898, 900-901, 903-904, 906-907, 909-910, 912-913, 915-916, 918-919, 921-922, 924-925, 927-928, 930-931, 933-934, 936-937, 939-940, 942-943, 945-946, 948-949, 951-952, 954-955, 957-958, 960-961, 963-964, 966-967, 969-970, 972-973, 975-976, 978-979, 981-982, 984-985, 987-988, 990-991, 993-994, 996-997, 999-1000

impaired

enhancement. Among art producers, knowledge of cultural artifacts within an artistic and technical framework, provides prestige to the extent one is capable of participating in legitimating discourse. Preferences and judgments on quality and effect are created in the *context of discourse*

environment of broad dependency and loyalty upon these masters. To the contrary, I argue that the

evaluated along the processual dimensions provided in the cultural mediation paradigm presented elsewhere in this paper. The article text and headlines were scanned to determine if experts through critical coverage mediated techno complexity, and if so, how that critical mediation was presented. Text was evaluated to determine how the genre's media and its related discourse fulfilled the criteria for differentiation, perception, evaluation, and rewards.

Content that enabled consumers to distinguish cultural objects from each other were categorized as part as the process of cultural mediation known as *differentiation*, while content that enabled consumers to interpret cultural products within frameworks of familiarity were categorized as part of the process known as *perception*. Similarly, content that revolved around status enhancement, prestige, or other opportunity for recognition was categorized as *rewards*. The most prevalent category encountered, however, was part of the process of cultural mediation known as *evaluation*. Criteria to categorize content included the knowledge base of writers (i.e. reviewers/editors/technician expertise), objective of the articles (i.e. evaluate software, compare hardware, motivate participation in competition), and the information contained (i.e. innovation announcement, judgment dissemination, utilization reviews).

RESULTS

Once headlines and text were dichotomized into the necessary categories, two of the four processes were found to represent relatively straight-forward reporting, without significant filtration or interpretation through critical expert testimony.

particular forthcoming cultural artifacts (i.e. CD promotion). The instruments used in the production of these CD's, while merely mentioned, were not the primary focus of these articles. Perception processes, rather than fulfilling any particular need for critical evaluation, served instead as a legitimation strategy. Often this legitimation went beyond the boundary of techno, and incorporated musician and producers from other more mainstream musical genres as well.

The content that dealt with the cultural mediation process of differentiation, however, did tend to focus on the instrument. The actual critical mediation was limited however, as this process was merely an opportunity to announce the development of 'cutting edge' technologies soon expected on the market.

TABLE 1
Cultural Mediation Processes by
Individual Techno Periodicals

10/99 v67	Mirror Maker takes a piece of music and reverses it's scalar step sequence	Jamiroquai	Ray Dolby Awards
	Digital Watermarking is security software that etches digital information into an audio file which can be read by special software, thereby designating authorized users.	Lisa Stansfield	
	Ceramic coated CD's		
06/98 v70	Sibelius 7 the ground-breaking musical word processor	Kraftwerk	MOBO Awards
	Koan Pro 2 the music authoring system	Björk	
	Smart Content encoding replicates the finest acoustic details of live performance. Engineers designed the codes by taking internal measurements of clubs/arena/garages and then converted these measurements into codes that tells the DVD player to gate some frequencies and amplify others and add delay before the sound reaches the speakers, thus reproducing live sound.	Funkadelic	
07/98 v07	Ensoniq PARIS [Professional Audio Recording Integrated System] An all in one simplified package that turns your computer into a digital audio workstation.	Madonna	John Lennon / EMI Song of the Year

Differentiation, in the case of the techno media examined, was actually a preparatory stage, acclimating and preparing consumers for the inevitable technological changes to expect in newly released SOHE electronica technological innovations. This preparation process of differentiation distinguished new and innovative cultural objects from those already in existence, but did not specifically do so from the perspective of the expert. Access to the new technology seemed to be the only significant barrier

limiting full critical discourse. The information about what to expect, as disseminated by the manufacturers, and without the trusted and judicious assessment of experts, is cautiously described to consumers. Table 1 provides subject matter of representative issues of techno media analyzed in light of the cultural mediation processes outlined thus far.

The cultural mediation process of evaluation, on the other hand, is the most salient, complex, and extensive section of the issues of techno media sampled for this analysis. The evaluation is entirely about the instrument. It is through the discourse that the instruments are evaluated. Costs, performance, features, technical ability, compatibility, and ease of use are meticulously compared, elaborated, and assessed. Specific interests of consumers are taking into account, and the depth and breadth of those involved in the production of techno music is well understood. Culture, economics, social preferences, intended audiences, their ethnic ties, the consumption environment, consumer capabilities, absorption limitations, technical formats, and taste are distinctly taken into account; and hence, it is here that cultural mediation is in full effect.

TABLE 2
Evaluation as Cultural Mediation Process

	console manufacturers have been falling over themselves to include the words "British EQ" somewhere on their spec sheets.
	There's a built-in SCSI interface and optional digital and analogue output expansion boards.
	Professional results and very quiet in operation having almost noiseless circuitry and a smooth quiet disk drive. One way of judging a new piece of kit is seeing what safety net it offers when things go wrong. You can keep the take but do a re-record on another track or you can undo 999 steps.

DISCUSSION

The text and subject matter presented in Tables 1 and 2 provide support for the processes of cultural mediation. In the case of cultural production of techno music, the primacy of evaluation is highlighted in techno media. Several relevant postulates can now be asserted. Evaluation occurs through discourse which increases in complexity, as tools needed to produce artifacts (the instrument) increase in complexity. The more that media focuses on the instrument producing techno music, the more important expert testimony is in deciphering its uses. In cultural music production, the more complex the

cultural production. Through discourse and related expertise, culture is mediated and thus, cohesion among the techno community is observed.



CONCLUSION

The classical theories presented in the current treatment have significant relevance to the contemporary genre of techno music. Although the analysis presented was not able to comprehensively dispute the Hegelian notion of antagonism as a necessary state for the pursuit of human knowledge, the case of techno does provide, nevertheless, substantial support for the Marxian position where cooperation and harmony is viewed as the necessary state to facilitate the production of cultural artifacts and hence optimize the potential for human creativity. The case of techno music, however, provides evidence to fully dispute Marx's notion of mechanistic complexity as a *barrier* to human creativity. On the contrary, the analysis focusing on techno music suggests that inherent mechanistic complexity *enhances* the potential for human innovation in the production of cultural artifacts. Here antagonism diminishes as rationally self-interested communities concentrate resources around the development and optimal use of the techno musical instrument, hybridized electronica. This harmonious cooperation occurs through fluency in relevant hybrid vocabulary and artistic/technological discourse. Discursive elements are guided by expert critics who provide cultural mediation (primarily through evaluation) to the techno community. The techno community accesses highly valued critical discourse through techno media. Trust further solidifies these communities, as financial, technological, and artistic risk under conditions of extreme postmodern uncertainty is minimized.

Hybrid electronica, developed and refined through the process of cultural mediation, has led to cohesion among consumers, producers, engineers, and artists concerned with techno cultural production. This article was intended to discredit the contention that technological complexity is universally responsible for postmodern alienation and the rise of fragmented communities in our social world. Although fragmentation and alienation by some measures appears to be on the increase, there remain areas of contemporary cultural production where technology is celebrated as a *source* of unity and integration across technical, artistic, cultural, ethnic, gender, and racial boundaries. The individuals involved in the genre of techno music, centered around the demystification of complexities inherent in its instrument, is one such example of mechanistic technology enhancing the social, cultural, and economic

status of those involved. Substantial caution should be exercised therefore, before ubiquitously criticizing music technology and overlooking its beneficial consequences to postmodern music. Information technology, in the case of techno music hybridization, has not rendered mechanisms of human expression obsolete, but has instead become *another* creative vehicle by which to make musical (and hence cultural) expression possible.

Though IT and related technology may have indeed caused alienation and fragmentation in some industries, it has had a diametrical effect in music. Computer technology has actually unified fragmented communities involved in techno music production, increased the quality of manufactured goods available to produce techno music, and facilitated cooperation across artistic and technological community factions. Through hybridization of computer-synthesizer electronica, elective affinities have flourished. This has resulted in comprehensive collaboration arrangements and prolific works of music production, thus optimizing aesthetic potential and maximizing opportunities for human creativity. Furthermore, reliance on major record labels to produce and disseminate cultural products is no longer required, due largely to electronica production technologies made available. With this increased autonomy, comp-synth hybrids continue to dramatically transform the music industry. It will be important to observe what effect these evolutionary changes have for future elective affinities or further cooperation among art/tech communities within the music industry. More research incorporating cross-cultural techno media may answer these questions or perhaps lend further support to the assertions presented in this analysis. In and of itself, the techno industry has not necessarily been proven to be capable of returning humanity to a state of utopian equilibrium, but this preliminary investigation involving a small sample of English-language techno zines

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