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Bourdieu, Actor Network Theory and Contemporary Music

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Putting a Glitch in the Field: Bourdieu, Latour and Contemporary Music[1]

Keywords: music, technology, Bourdieu, glitch, field

Introduction

What can the sociologist bring to the study of contemporary popular music? This is, of course, not a straightforward question. Indeed, it less begets a single answer than invites a series of further questions concerning what "music" consists of, as well as when "contemporary" begins and how one defines "popular". As the questions proliferate, certainty over terms gives way to a more guarded attention to the boundaries of the terrain, its contours and defining shapes. The terms loose their substantiality and become contingent accomplishments of actors and groups of actors engaged in interpretative struggles. Indeed, perhaps this is one of sociology's key contributions: it serves as a watchdog for uncritical and unreflective assumptions about the discourses of music itself. In other words, it sensitizes us to the constitutive and relational, the conflictual and performative, thereby widening the focus of analysis beyond the musician and the cultural work in order to situate the latter in its proper social context.

This, at least, has been a recognisable thread in much sociological writing on music. From industry-specific patterns of ownership and control (Negus, 1999) and the role of gatekeepers in decision-making chains (Ryan and Peterson, 1982) to technological mediators (Hennion, 1997) and the everyday experiences of listeners (DeNora, 2000), sociologists have oriented to the ways in which music is imbricated with the social. Here, music is understood to be produced by an increasingly globalised culture industry predicated on the exchange of music as a "basket of rights" (Frith, 1987: 57), its status as a text dependent both on the meaning-making dynamics of media forms (videos, images, songs, lyrics) and on the negotiations of stratified audiences with particular subcultural affiliations or strategies of consumption (Longhurst, 1995; Thornton, 1995). As for genre, the active constitution of labels attached to loose conglomerations of style, people and practice speaks of the extraordinary social effort needed to crystallise such constellations into something tangible and productive: categories in record shops, subcultural accoutrements, music reviews, encyclopaedia entries, and so on (Negus, 1999; Frith, 1996). Indeed, it has been an insight of sociologists of culture to show how a complex social network of institutional forces and actors is central to the attribution of artistic labels, where

[1] I am grateful to discussants of previous incarnations of this paper and to the many musicians whose practices I have been observing during its writing.

such labels often tell us more about the organisational context than any stylistic uniformity amongst the cultural workers themselves (Becker, 1982, White and White, 1965).

This is all well and good, but it still begs the broader question of what holds these different levels of analysis together. What exactly *is* the social? Where is music's place within the nebulous entity called "society" and how might we understand the ways in which macro, meso and micro levels of the music-society problematic fit together? If one does, indeed, wish to move beyond the antinomies of structural(ist) and individualist accounts of music, some options present themselves. A radically interdisciplinary approach in which insights from ethnomusicology, economics, psychology, sociology and aesthetics are applied does reveal music to be multi-faceted but risks over-eclecticism. A critical rejuvenation of Adorno's "grand approach", on the other hand, recognises the need to attend to music as a fulcrum for social consciousness and social structure (DeNora, 2000) but carries with it the weight of cultural Mandarinism. Meanwhile, Giddens' (1984) structuration theory in which actors are presented as reflexively making and remaking their social life, provides some interesting inroads into the problem, but it is rarely employed in the sociology of music, partly because its formulation remains obdurately conceptual and abstract.

In comparison, the work of Pierre Bourdieu, much of whose writings are dedicated to overcoming subjectivist and objectivist accounts of the social world, has become an increasingly attractive alternative for sociologists of music (see Clayton *et al*, 2003; Negus, 1999; Sterne, 2003; Regev, 1989; Théberge, 1997; Thornton, 2005). This is not surprising given Bourdieu's centrality to recent debates about culture, action and power, as well as the relative ease with which one can put his concepts to work in empirical settings. Yet, despite his obvious popularity, there remains a tendency to reduce Bourdieu's complex *oeuvre* to a few phrases and to tack on "Bourdieu-isms" in rather simplistic and partial ways. This leads to two outcomes: 1) a failure to capture the full range of phenomena covered under Bourdieu's ideas – for instance, wielding the twin concepts of "taste" and "cultural capital" without returning to the force-field of relations that frame patterns of consumption; 2) a largely uncritical acceptance of Bourdieu's concepts and an unwillingness to test their boundaries and inadequacies.

This paper adds to the attempt to apply Bourdieu's ideas to music, but does so with a critical orientation. That is, whilst it recognises the need to get inside some of Bourdieu's ideas, it also aims to reveal their limits. The focus of the paper is the *fin de millennial* music style called "glitch" and asks to what extent one of Bourdieu's

meta-concepts, the field (*champ*), is able to shed light on its emergence and trajectory. Glitch has become an influential presence in music since the late 1990s and has gained credence as a contemporary form of sonic experimentation based on computer-generated clusters of rhythmic pulses, skips, clicks and scratches. Its development out of commercially-restricted scenes into more mainstream musical environments follows a logic present in Bourdieu's analysis of the chiasmatic structure of cultural fields, where the position-takings of artists is meaningful only in relation to a dynamic space of social relations governed by the twin poles of economic and cultural capital (Bourdieu, 1996).

In this sense, it will be argued, we learn a lot about the social dynamics of stylistic practice from greater sensitization to its position in a structured setting of socio-economic relations partly defined by the social characteristics and position-takings of the musicians themselves. Bourdieu's cultural sociology pits itself very effectively against aesthetic writings on glitch, here, precisely because it refuses to cut analysis off at the stylistic boundaries of the work. But there are some outstanding questions, one of which is addressed towards the end of the paper. In a context that cries out for attention to a range of agents involved in cultural production, to what extent is there room for a sufficiently complex treatment of technology under Bourdieu's corpus of ideas? At best, it will be argued, the problem of technology does not feature highly enough in Bourdieu's work to give it the strategic status it deserves; at worst its inclusion stretches his arguments to the limits of credibility. The issue then becomes to what extent it needs to be supplemented with other approaches and concepts for it to be properly useful to contemporary music sociology. One possible supplementary position comes from Actor Network Theory, a theory that treats the realm of technologies as bound to the human world in ways other than that of instruments, tools or social weapons. When technology is considered a true form of mediation, it will be argued, it is possible to extend the range of objects in Bourdieu's fields to include those devices, techniques and artefacts that permit the solidification and transformation of field relations. Despite some conceptual incommensurability, in other words, rubbing these two traditions against each other sheds light on the complex human / non-human entanglements and field trajectories of contemporary styles such as glitch.

The Properties of Fields

Bourdieu's concept of field has received a great deal less attention than his other concepts cultural capital and *habitus.* Indeed, most commentators on Bourdieu are quick to treat *habitus* as the keystone to Bourdieu's work. This is understandable

given the weight of explanation Bourdieu himself places on the *habitus* concept as a way of moving beyond dichotomies such as individual/society. Yet, Bourdieu himself always stressed the importance of the field concept as a way of reading the objective relations that define the social space within which *habitus* functions. Its significance is reaffirmed by the attention Bourdieu gave it in his later works, particularly *The Rules of Art* (1996) which in some respects is a better reflection of the maturity of Bourdieu's theoretical position than *Distinction* (1984).

What Bourdieu provides is an heuristic for the analysis of "historically constituted areas of activity with their specific institutions and their own laws of functioning" (Bourdieu, 1990a: 87). These fields consist of sets of historical relations between positions grounded in specific forms of power or capital. Conceptually, the field is an immediate invitation to think *relationally* about the actions of social agents who, propelled by their *habituses*, compete for particular values specific to that field (Bourdieu and Wacquant, 1992). It is the interactions and conflicts between these agents over the prizes available that define the precise contours of the field, particularly the limits of what is found to be acceptable *as* the stakes in the field. In which case, the field is also a space of competition, the analogy being a game of chess where players enter the game and position themselves according to the powers and moves available to them. This is why *habitus* and field are intertwined, for transposable dispositions incline the agent towards acting and reacting to the game in particular ways.

In Bourdieu's hands, then, the field becomes a network of objective relations between agents, but also larger groupings and institutions distributed within a space of possible positions. Its function is not merely to describe a logic of struggle between agents, but also a grander attempt to examine how modern societies are themselves defined by an architecture of overlapping spheres such as artistic fields, economic fields and scientific fields. In fact, it is the relationship that particular fields have to what Bourdieu calls the "field of power", the broader political field, that defines its ability to resist the penetrations of outside forces such as the market. In the case of the cultural field, autonomy is dependent on the increasingly dualistic structure of a space defined by two logics of capital, economic and cultural. It is these species of capital that internally divide the cultural field into two sub-fields: on the one hand, the "de-limited" sub-field of production and, on the other, the "large-scale" or "heteronomous" field of production. Whilst the delimited field is defined by its distance from commercial mass markets and its appeal to specialised audiences, the large-scale field is defined by its proximity to the broader field of power and economic determinants (Bourdieu, 1990a: 145). Here, we might recognise the conventional

opposition between “high” and “low” culture and the symbolic positions occupied by avant-garde artists and commercial producers in the cultural field.

What I want to do in the following, then, is examine how these general features might illuminate certain characteristics of glitch as a form of contemporary music. What kind of analytical leverage do Bourdieu’s ideas afford when they confront a particular case in music? What happens when the field concept is applied to the emergence of a contemporary musical style? What happens, in short, when a glitch is put in the field? This follows a brief description of glitch music and the work of some of its practitioners and protagonists.

Glitch: A Short History

Glitch
a. A surge of current or a spurious electrical signal; also, in extended use, a sudden short-lived irregularity in behaviour.
b. *Astronauts' slang.* A hitch or snag; a malfunction.

(Oxford English Dictionary)

In popular usage, the word “glitch” has negative connotations. It refers to mechanical error or a rogue signal present within an electronic system and is conventionally seen as a problem. Whilst its derivations from the Yiddish “glitshn”, to slip, slide or glide, suggests a physical movement, it is commonly used to describe errors in computer-based systems that result in a short electrical pulse. This meaning can be traced back to its usage by astronauts describing electrical malfunctions during the first U.S. manned space-flight in 1962. Glitchy systems are systems prone to errors, the outcome of which are often discernable as small audio spikes.

It is these sounds of error and related secondary audio phenomena such as static and interference that have become used as source material for musicians associated with the music style known as glitch. From the late 1980s, a cluster of bands such as Pan Sonic, Matmos and Oval, as well as a vast array of “sound hackers” from Germany, Japan, the U.S. and elsewhere, turned to glitch as a way of creating and performing music. Drawing on the technological artefacts of error, as well as a rich history of avant-garde experimentation associated with *elektronische musik* and *musique concrete*, these musicians compose music as a series of micro incidents - bleeps, cuts, clicks and pulses - rendered by digital techniques and tools.

Not the modernist celebration of technological achievement, then, but what Cascone (2000) has termed an “aesthetics of failure”, glitch explores the digital interruptions of machines commonly used only to omit mistakes or improve sound. At one level, it is what happens when the idea of human presence is almost totally

subordinated to the machine, when music becomes pure programming. At another, it comprises the digital music of a technophilic generation negotiating its relationship to the history of electronic music.

Japanese-American sound artist, Yasunao Toné, is reported to be one of the first musicians to exploit the internal interruptions of the CD player as a digital machine by cutting the surfaces of CDs with razor blades in the late 1980s. Toné drew the resulting sonic fragments into compositions such as *Solo for Wounded CD*, based on the glitches produced by one his own previous CDs. Many of the first compositions of German band Oval, similarly, were achieved by painting small images on the undersides of CDs to make them skip. The 1994 album *Systemisch* was entirely based on a CD version of Aphex Twin's *Selected Ambient Works vol. II* which had been glitched by the doodlings of a felt-tipped pen. In both cases, the sounds of technological failure had become an inherent part of the arrangement, re-aligning a malfunction (a machinic disturbance, an annoyance) with a creative gesture (a human expression, a joy).

It was during the 1990s that glitch really took off, however, as a steady increase in the amount of music produced under the category was matched by a visible expansion in the networks, discourses and accoutrements of glitch-related phenomena. Not only did glitch extend the sources of error to include computer-based system crashes, clipping and distortion, but the "scene" had developed enough of a following and presence to warrant specialist CD compilations as well as a network of independent record labels based in Germany, France and the United Kingdom. Key support personnel such as critics gravitated to the category as the latest in a long line of (post)modern sonic interventions with counter-cultural connotations. Indeed, its intellectual appropriation as avant-digital deconstruction lent it the kind of leftfield *gravitas* so central to electronic arts festivals and specialist academic journals, two of which - *Parachute* and *Contemporary Music Review* - ran special issues on glitch and laptop music in the early 2000s.

Whilst glitch's origins in experimental art music are significant, however, its more recent dalliance with less restricted domains is also noteworthy. Just as electronica itself has become relatively normalised through channels of popular and consumer culture, so glitch has seeped into the mainstream via electronic and dance music festivals, film scores, radio airplay, as well as the odd car and mobile phone advert. Moreover, glitch bands such as Matmos, Autechre and Aphex Twin have attained a degree of popular (albeit far from superstar) appeal and coverage, and the style has very quickly crystallized into an established genre with recognisable gigs,

stylistic signatures and labels - Mego, Touch, Thrill Jockey and Mille Plateau to name just a few.

Autechre, for instance, are signed to the popular dance-based label, Warp, and, along with Aphex Twin, are as close to "electronic pop stars" as one gets (Davis, 2002). The former's music involves the intricate manipulation of audio files and the meticulous programming of digital rhythms and pulses. Sometimes called "sound mangling" or "crunching", this technique is reliant on specialist software programmes with names such as Cloud Generator, Reaktor and Max/MSP to generate what Curtis Roads calls "microsound" (Roads, 2004). This is sound lasting less than one-tenth of a second, decomposed into constituent particles and presented, often during laptop performances, as sonic grainlets. With Aphex Twin, on the other hand, digital transformations are set upon both synthesized noises and sampled sounds from everyday scenes and locations. Richard D. James of Aphex Twin is seen as one of the pioneers of "intelligent techno" and many of his tracks comprise warped, bit-reduced or time-stretched vocals, multi-layered harmonics and microtones. Like Autechre, the emphasis is on complex sonic transformation and shredded beats "aimed as much, if not more, at the head as at the limbs", to quote one influential music critic (Stubbs, 2003: 5).

This emphasis on the cerebral provocations of glitch is common in contemporary writings and directly maps onto the relatively small gap between musicians, critics and audiences. In most cases, glitch's support writers are themselves directly involved in the unfolding of the style, and their interventions are either internalist in content – fulfilling aesthetic, formalist or stylistic criteria - or posit glitch as somehow outside the field through the maintenance of a cool distance from pop. From the perspective of evolutionary formalism, for instance, the stylistic fundaments of glitch are aligned to internalist mutations driving the history of music, the latest in a series of socio-biological progressions dependent on imperfection (Sangild, 2004). From the perspective of theoreticism, on other hand, glitch is a musico-philosophical intervention possessing a certain quality of alterity onto which are piled avant-garde aspirations towards cultural critique, shock and deconstruction (Cascone, 2000, Vanhanen, 2001).

Glitch and the Field of Music Production

Powerful as these writings are, what is lost are the sets of social relations that make glitch-based interventions possible, as well as the broader socio-economic webs and networks that traverse them. Indeed, it is precisely because descriptive histories of

glitch move us towards describing the style from within that we need to add the kinds of critical insights that Bourdieu's cultural sociology brings.

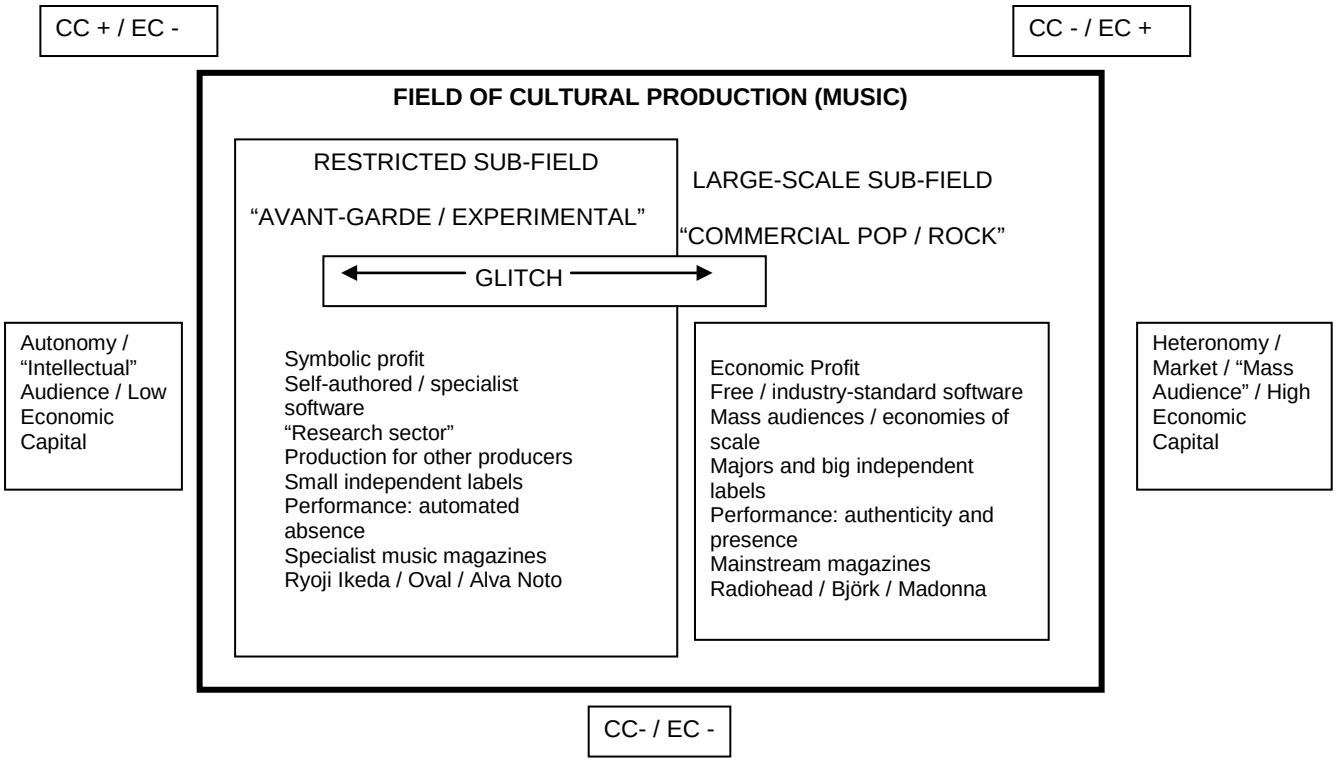

Figure 1: Glitch and the Field of Music Production (adapted from Bourdieu, 1996)

Prima facie, glitch fits Bourdieu's model rather well, its rules of engagement mappable according to five key elements in Bourdieu's schema above.

Firstly, whilst it is stretched between the two poles of production, glitch's aesthetic orientations are skewed towards the principles of the restricted sub-field. This is evident in glitch's connections with and origins in a rarefied world of academic computer music and audio research. In its "pure" form, in fact, this kind of computer music stretches the limits of the possible forms of productive activity itself: that is, the limits of the field and therefore the limits of music, as it bleeds into "sound", "noise", "research", and so on. Even in its less restricted forms, glitch music is aligned by critics and musicians to a kind of "scientific approach" that yields experiments in form (Young, 1997). This is not to assume that it is somehow self-referential or "outside", but that it owes its experimental dispositions to certain structural pre-conditions operative in the field itself.

Secondly, then, glitch's protagonists comprise a culturally-privileged fraction of specialists. My own (albeit informal) encounters with musicians and attendance at

glitch-related events suggests high participation rates amongst graduates with humanities, music technology or sound design degrees, committed to innovation and autonomy. This commitment is made possible by the accumulated history of the field itself, including the positions occupied by previous electro-acoustic musicians - Pierre Schaeffer, Iannis Xenakis and John Cage being notable figures. Glitch audiences, on the other hand, tend to be drawn from a similarly restricted group of young educated technophiles and *aficionados* with a preference for experimental-art music. This includes a large number of other musicians, restricted in size, but sharing, as with Bourdieu's symbolist poets, a structural affinity towards autonomy. Whilst key electronic sites of discussion such as web-sites and discussion forums serve as semi-public means for disseminating glitch-related projects and ideas (www.microsound.org is a particularly influential staging post) bigger audiences and wider audiences are less important than the social *quality* of the audience and the production of belief regarding total creative freedom.

Thirdly, revered as the most recent example of sonic experimentation, glitch's aesthetic credentials are regularly defended with respect to both avant-garde practice and high theory to the extent that critics and fans are as likely to evoke the work of Deleuze and Guattari and describe the genre as "rhizomatic" (Vanhanen, 2001: 8) as they are to place it in the pantheon of dance music. That one of the most renowned labels of glitch is named after Deleuze and Guattrari's *Mille Plateaux* is a clear indication of the homologies between educational and cultural capital, here. Transposable inclinations between education and experimental music are revealed in a mastery of words and concepts around discourses of glitch. Here, the importance of the consecrating actions of influential critics is essential to the positioning of glitch as relationally distinct to mainstream pop.

Writers such as Kim Cascone, himself a formally-trained musician and contributor to high-brow music magazines such as *The Wire*, are significant agents in the socio-genesis and impact of the style. Like the dense explanations accompanying contemporary art, writings on glitch are essential to its symbolic legitimacy. Liner notes, in particular, are a key site of its discursive presence, with a typical compilation bearing a dense accompaniment of essays packed with Deleuzian allusions. Notwithstanding the question of whether anyone reads these notes, their mere presence is testament to a belief among those equipped with the esoteric codes that glitch is distinct. This is why criticism is the site of an "objective connivance" (Bourdieu, 1993: 94) between readers and critics as the homology

between the two is also a structural correspondence between the intellectual field and the readership's location within a dominant class field.[2]

Through such homologies, glitch has come to take on the symbolic credibility reserved for those who make a value out of disinterestedness in a restricted position in the field. Like esoteric forms of modernism, we might find it difficult to listen to say its protagonists, but that is partly the point. It disrupts, it "interrupts, it grabs us and forces us outside of our habitual territory" (Vanhanen, 2001: 2). It is non-tone as opposed to tone, particle as opposed to rhythm, middles rather then beginnings and endings, nomadic as opposed to hierarchical. In short, whilst still part of an ever fragmenting music industry, glitch is closer to what Bourdieu calls a "research sector" (Bourdieu, 1996: 120) its position secured by an opposition to the incumbents of more commercial styles of music dubbed as "easy" or "formulaic". Even the physical sites of some glitch performances are telling, many becoming the staple diet of classical concert halls and avant-garde galleries. A recent performance by Ryoji Ikeda at the Sage at Gateshead, for instance, had all the trappings of a classical sojourn for the refined cultural intelligentsia, the purpose-built concert hall graced by an audience that would not have looked out of place at a Schönberg concert.

Boundaries between sub-fields are not impermeable, however. Indeed, as Bourdieu himself states: "one must be wary of establishing a clear boundary, since they are merely two poles, defined in and by their antagonistic relationship, of the same space" (Bourdieu, 1996: 120). Fourthly, then, an interesting recent development has been the way glitch as a technique and style has migrated into more commercial forms of music. Both Björk and Radiohead have appropriated glitchy sounds for their own works with some degree of commercial success. In the case of her 2001 album, *Vespertine,* Björk even went so far as to call in the specialist glitch band Matmos for programming duties on three of her tracks, whilst Madonna's hit "Don't Tell Me" (2000) contains an array of glitchy interruptions. Unsurprisingly, mainstream artists and producers have picked up on the fact that glitch carries with it bleeding-edge connotations. Just as "cool", "edge" and "risk" have become commodified offshoots of the domestication of the avant-garde, so glitch is becoming one of the latest targets in a long succession of *outré* styles considered fair game for appropriation. Indeed, a host of software companies are already coding glitch-making

2 A single exchange reveals these homologies. In 1995 a journalist from the British classical radio station, Radio 3, took it upon himself to send avant-garde composer, Karlheinz Stockhausen, a selection of works from bands such as Aphex Twin and Scanner. The ensuing commentary follows a typically Bourdieusian logic of conservation, succession and "social ageing" as Stockhausen moves to recognise the experimental credentials of the newcomers but distances himself from their naivety and repetition (Cox and Warner, 2004).

"plug-ins" that automatically produce the sounds of computer error to order, without the musician having to slice their CDs or tinker with the insides of computers. This accommodation and commercialisation reprises the historical trajectory of vinyl scratch (itself once considered radical and annoying) from the likes of Grandmaster Flash and Christian Marclay into the pop mainstream.

As Bourdieu notes, however, these on-going struggles over classification, practice and use are the very stuff of cultural fields. Indeed, logics of consecration, succession and subversion are essential to the positioning of cultural agents as the game moves on. Under such conditions, glitch protagonists are regularly forced into a position of distantiation and defence, calling for continuous experimentation to stave off the risk of becoming an orthodoxy. It "must find itself new challenges" as one critic puts it (Finney, 2001), a contemporary manifestation of which is the formation of new sub-styles within glitch such as "click-hop", as well as struggles between critics over the nomenclature and classifying principles of older styles such as "oceanic glitch" and "minimal click" (Sangild, 2004). Nevertheless, despite the possibility that it will itself be overtaken by a successive intervention as newcomers enter the field with their own innovations in techniques of production, for the time being glitch remains a sonic signifier of experimentation and its defence is felt by protagonists to be a matter of cultural purity: "Autechre's approach is strictly *antithetical* to most popular music", states David Stubbs (Stubbs, 2003, emphasis added).

Finally, there's the question of performance. Ethnomusicologists and sociologists have identified the significance of live performance for the idea of authenticity in rock music. Whilst the idea of unmediated contact with one's heroes is belied by the actual complex forms of mediation that allow it to happen – from mixing desks to pitch correction tools – there nevertheless remains a residual affirmation of a metaphysics of presence in rock music. To witness the live performance is to assume privileged access to an originary and un-automated materiality – Benjamin's "aura", if you like, or what Antoine Hennion calls the "primitive scene" (Hennion, 1997: 428). Music made and performed with laptop computers, on the other hand, is characterised by an attenuation of the signs of humanity and presence (Prior, 2006). Typically, the laptop performer will rely on a single computer, a mixer, a MIDI controller and a handful of small digital boxes. The spectacle of rock is thereby replaced by a more ascetic performance of the computer and an affirmation of the automated. This releases a set of anxieties over who is producing what - musician or machine. "This is clearly not rock and roll", complains Erik Davis (Davis, 2002: 4).

In fact, many laptop musicians maintain their symbolic distance from commercial pop by playing in complete darkness, hiding their laptops in pizza boxes or taping over their Apple logos (Toop, 2004). Thus a Bourdieusian doubling is evident: what is already an icon of symbolic creativity amongst cultural capital-rich producers (the Mac) is further obliterated to give added distance from both Microsoft and corporate culture in general. Here is Cascone describing just such a distance: "The resulting difficulty most people have with laptop performance is exacerbated by the fact that most people today arrive at electronic music through the cultural framework (and hence expectations) of pop culture" (Cascone, 2001: 2). For Cascone, laptop performance belongs, instead, to the live experiments of avant-garde composers such as John Cage, its distance from the spectacle of rock enforced by a kind of performed alienation and deferment of presence.

Bourdieu's Hits

We can begin to see, then, how the field concept can "sociologise" spheres of cultural practice in important ways. As an overall map of the terrain of culture and its dialogues with power, the field orients us to positional co-ordinates and their logics. It shows us how alliances and differentiations really matter in the making of movements, genres and styles – yet also how manoeuvres between and within such styles still end up reinforcing a collective adherence to the value of playing it, Bourdieu's *illusio*. It finesses our approach to the music world by describing how the cultural field is internally configured according to a series of associations and schisms between genres, institutions and associated personnel. It also makes good sociological sense of the pre-conditions of autonomy, moving us away from statements that affirm the cultural "independence" of musicians without reflecting on how this independence is actually a profound dependence on the joint histories of *habitus* and field.

As for broader, contextual issues, the field concept gives us analytical purchase on the mechanism by which spheres of practice like music re-translate the incursions of economic and political forces. I do not have the space to develop this, but a more substantive paper would need to ask, as scholars like Paul Théberge have done, how the take-up of music technologies feeds off global circuits of the commodity and the structure of the contemporary music instrument industry (Théberge, 1997). It is no accident, after all, that a geographical shift in the consumer electronics industry to East and Southeast Asia – led by companies such as Sony, Panasonic, Roland, Korg and Yamaha – mirrored the take off of the Pacific "bubble economy" during the 1970s and 1980s and changes in global patterns of productive

activity and trade (Gregory, 1985; Chandler, 2005). Again, the precise effects of these global forces depend on the intermediaries of specific forces and forms of the field, but they are forces nonetheless.

If pushed a little further, Bourdieu's ideas might even be able to make sense of the gendered conditions under which glitch functions: not perhaps the rhetorical emergence of post-gendered cyborgs *a la* Donna Haraway or Deleuze's "Body Without Organs", but the re-entrenchment of the *mensch-maschine* of male electronic bands and macho technophilia. Although women are making electronic music, they are still constrained to a large degree by ideologies of technical incompetence, sexualisation and subjectification (Friz, 2004). Bourdieu's attempts to incorporate gender into his analysis have not always been well received by feminists. Nevertheless, the relative lack of women in the glitch scene, particularly compared to rock and pop, might be sighted through the concepts of *habitus* and "symbolic violence" in a field whose networking mechanisms and rules are inclined towards male games. This is even more important given the uncritical celebration of glitch by high theorists and academics who, at one and the same time, laud the style as a line of flight from convention but disavow the privileged social origins of the protagonists.

Bourdieu's Glitches

And yet for all these benefits, there is still something missing. No concept, of course, is perfect, but cracks are beginning to show in Bourdieu's ideas. Recent attacks on him for ignoring the sensuous specificities of art, getting Kant wrong, and over-sociologising the aesthetic encounter are mounting up, even amongst sociologists, whilst the claim that he fails to adequately explain social or cultural transformation is well known (Hennion, 2007; Jenkins, 1992). I want to leave these questions aside, for now, to concentrate on another problem to do with technology. Bourdieu rarely addresses technology. Even the article "Men and Machines", which one might reasonably assume to be Bourdieu's big statement on the topic, is concerned with organisational structures such as bureaucracies (Bourdieu, 1981). In later works such as *On Television and Journalism* (1998) Bourdieu opts for a diatribe against the industrialisation of popular media, without once reflecting on the different forms that media technologies themselves take and the consequences - intended and unintended - of their existence.[3] Bourdieu's collaborative study, *On Photography* (1990b) contains a few scattered comments regarding how different camera groups either embrace or reject photographic technologies depending on their social class

[3] Including the possibility of Bourdieu's own appearance on television where *On Television and Journalism* was first aired.

origins, but it is telling that these comments belong to the chapters written by Bourdieu's collaborators. Equally telling is the alarmingly thin analysis of the sociology of technology in the posthumous work *Science of Science and Reflexivity* (2004) where Bourdieu largely ignores the contribution made by Science and Technology Studies (STS).

Well, perhaps these are just missing details and oversights. After all, Bourdieu can't be expected to cover everything. Indeed, it is entirely possible to construct a Bourdieu-inspired take on technology without too much difficulty. Jonathan Sterne, for instance, has argued that Bourdieu's sociology "allows us to consider the domain of struggle over what is and what is not 'technological'" and to wrestle with technology as a "little crystallized set of operations incorporated into the habitus" (Sterne, 2003: 370, 372). This connects with the ways the body incorporates the social as a memory but also to how different social groups use and consume technologies in different ways. In the case of glitch, for instance, we could quite easily plot how hierarchies of capital correspond to different choices and uses made of particular technologies such as software applications.[4] This would follow a logic whereby the more popular an application is, the less likely it will be adopted in good faith by avant-gardistes. We could also examine how techniques of authoring highlight dispositional consumption practices and aesthetic investments in the field: does the musician use samples from mass-produced CDs or generate their own audio material in the field? Do they use preset sounds bundled with software applications or programme their own sounds and patches? Do they use a Mac - the *sine qua non* of the "culturally enlightened" - or a PC?

These are all lines of inquiry befitting a field approach. Still, if we keep asking these questions, we are left continuously rehearsing the mantra of technology as an instrumental "badge" or a "thing" that secures and reproduces. Technologies rarely open up, they close down; they are technical and symbolic resources, extra weapons in the game. What's missing here, I would suggest, is the texture of technology, not just in relation to the more phenomenological aspects of tweaking and twiddling but to the multifarious modifications and translations that technologies afford, to their efficacy beyond reproduction, to what they make possible.

[4] With respect to software programmes there is a clear symbolic hierarchy homologous to degrees of autonomy within the field. Towards the autonomous pole are highly-specialised programmes such as Max/MSP. This programme is commonly used in music departments in universities and amongst experimental musicians. Towards the middle are more popular studio emulation programmes such as Cubase, Logic and Reason that map onto a more diffuse middle markets of amateurs and musicians. Towards the commercial pole are a series of entertainment-based packages more suited to Karaoke and computer gaming, such as E-jay.

ANTs to the Rescue?

It's been an insight of Actor Network Theorists such as Latour and Callon to explain the importance of non-human actors in the social world. Actors like chemicals, airbags and door knobs, impose their presence in all sorts of ways that make them partners in interaction. This means that action is no longer perceived as the sole realm of the human actor, but also the realm of the non-human actor, including the technological artefact. For their presence, the world is not exactly as it was before, a positivity has been made that changes the course of events. This position adds to Becker's (1982) notion of an "art world" as collective activity the important understanding that techniques, settings and devices, exchange their properties with humans. These entities comprise a cluster of elements - inanimate and animate - that might at any point add their identities and relationships into the collective (Callon 1987).

When one opens action up like this, the points of articulation and influence between a range of entities are enlarged such that "production" becomes a full and expansive concept. It also allows for a degree of slippage between the prescriptions encoded in the manufacture of artefacts, implying what Latour calls the "inscribed reader" (Latour, 1988, 307) and the unforeseen uses that these technologies end up affording through breakdown, error and misuse. Indeed, the history of music bulges with cases that point to the unpredictable, productive and unstable: turntables as DJ instruments, monophonic bassline generators such as the Roland TB303 mis-programmed to beget acid house, telephone bandwith-saving technologies turned into vocoders.

Perhaps the computer itself might be a case where digital audio flexibility and the increasing availability of music software sends all sorts of forces into the practices of music making and the inevitability of new forms and genres. After all, glitch is glitch (and not grunge, hip hop, trip hop or drum and bass) not just because of its field position as conventionally understood by Bourdieu; not just because of the *habitus*-derived uses its protagonists have made of hardware and software; but also because of these technologies themselves. That is to say, the gathering of digital objects around glitch changes not only how the music is made, but also what the music "is". The codes, the coding, the graphic user interface, the CDs, the various hardware interfaces and their design – these all make a difference. They don't determine the style alone, but neither are they merely a backdrop to or weapon for the purposeful action of the acquisitive human actor. They are objects essential to the relay of social relations in the formation of glitch to the same extent as non-human objects are in the formation of all styles and genres. We might, indeed,

speculate that Bourdieu fails to tackle non-human objects head-on precisely because they introduce elements of presence, uncertainty and deviation into fields in a way that poses a series of problems to Bourdieu's own schema.

One does violence to the intricacies of the social world when technology is framed as a passive recipient, tool or "subset" of the *habitus* enacted in fields (Sterne, 2003: 370) and not also an active force in those fields. Adequacy can only be attained in the sociology of music if enough space is given to how machines produce as well as get produced, enable as well as constrain, act as well as react. This recognition is important in a contemporary context where musicians enter into increasingly immersive relations with their instruments and form increasingly complex machine-body assemblages. Yet, throughout music history, as Hennion has shown, material devices such as scores, concert staging, acoustic treatments and musical texts have always formed an "interconnected series of mediations…creating an irreversible movement which none of them alone would have been able to achieve" (Hennion, 1997: 424).

Do these devices have independent agency? Of course not. In fact, warning bells should start to ring at the point at which technology is claimed to possess a radically autonomous "life of its own". Amongst other flaws, this accepts the terms of reference of the computer music industry itself where the "revolutionary qualities" of each successive device feeds a belief in its transformative power and separation from social settings. One needs to be guarded against work that claims a self-organised, machinic evolution and genesis of technology independent of its uses and meanings amidst social spheres of practice. This is precisely the reason why the best work in Actor Network Theory alerts us to how the technical and the social are inextricably linked, in turn sensitizing us to the fact that instruments and associated devices are not passive intermediaries but active mediators. Such a position gets us beyond the tendency shared by certain traditions in the sociology of art, particularly prevalent amongst "production of culture" scholars, to separate "distribution" as a self-contained set of organisational practices and locate technology as a separate mediating process or infrastructure. It is just not possible, during the process of what Small (1998) calls "musicking", to distinguish between discrete logics belonging to the technical, the aesthetic and the sociological. And it is certainly not the case in music production that sociological questions are more relevant at the point at which the product finds its way through distribution processes, leaving the creative process itself to aesthetics or musicology.

Conclusion: Temporary Alliances

So, a series of questions present themselves. Is it possible to keep the field concept intact whilst allowing for a more agential approach to technology? Should we drop the field completely as too clotted and static, or work with it but twist it in the process of application? More generally, to what extent can Bourdieu's ideas be used alongside those of Actor Network Theorists without conceptual negation? After all, theorists like Callon (1987) have explicitly positioned themselves against Bourdieu in some of their writings, claiming that power is not merely a stock of capital (however one differentiates it), but is composed and performed by networks comprising heterogeneous associations between "traditional" social actors and non-human entities. Latour's invocation of a "flat" conception of the social, on the other hand, is also a critique of conceptions of society like Bourdieu's which attempt some compromise between actor and system-led explanations. The trick, Latour claims, is not to find some sophisticated balance "between the two clichés of social science" (Latour, 2005: 170) but to redraw the map of the social such that "action is always dislocated, articulated, delegated, translated" (Latour, 2005: 166).

Yet, a logic of differentiation afflicts social theorists as much as musicians and we would be remiss to simply cast aside points of contact without taking stock of how one set of theories might supplement, reinforce or subvent the other. From this exercise in mutual engagement, sharper and more relevant tools may be forged or modifications to pre-existing concepts suggested. Indeed, Latour himself states that whilst Bourdieu's emphasis on social distinction and Goffman's interactionist accounts are "not wrong", they remain only basic starting points in approaches to bundles of action, including the "many entanglements of human and non-humans" (Latour, 2005: 84). Here, one could conceive of theoretically-grounded empirical studies of music that, at one and the same time, look for dynamic relations between musicians, genres and bands *á la* Bourdieu, but do not discount how these relations are also joined by other types of materials coming into play. This would adhere to Latour's call to increase "the type of actors at work" (Latour, 2005: 64) at the same time as recognising the historically-developed space of relations in which actors struggle.

To return to the case of glitch, then, one needs to hold together objects, trajectories and materials without loosing sight of its socially-organised formation in successive phases of attachment and opposition. The field clearly does set certain limits, particularly in how specific modes of operation and intervention amongst glitch musicians are played out, but glitch is also held together by an array of other objects which populate these relations and without which the style becomes unthinkable: transistors, electrical pulses, keyboards, software, graphic user interfaces, laptops,

CDs, Digital Signal Processing tools, the Internet. It is the latter, for instance, that has been the proliferating condition of knowledge under which glitch musicians have learned the tricks of the trade, including how to use and abuse particular forms of software; it is an earlier breakdown in the material properties of technologies such as the CD and CD player that gave glitch its source materials; and it is the visual streams and blocks of MIDI data in applications such as Ableton Live, Max/MSP and AudioMulch that have enjoined the glitch musician in new modes of working.

If we say that these objects are not *merely* badges of social distinction, then it follows that we need to examine their properties and attachments in greater depth than is conventional in the sociology of music, necessitating a more charitable orientation to the performative and integrating ability of things to fix and hold the social. Indeed, what better way of making sense of the way glitch represents an inter-meshing of humans and technologies *at one and the same time* as it has accreted symbolic validity in a field of relations, than to strategically deploy insights from both Bourdieu and ANT. One only has to see (or be the victim of) a spectacular laptop failure in a live gig situation to see how important technologies are in stabilising the order of things, even whilst recovery may be a product of glitch musician's "feel for the game", turning unexpected glitches into new sources of glitch. In any case, such a commitment to glitch's materiality is not to ignore the position-takings of the musicians, critics and labels themselves, but to examine human and non-human materials as co-producers of the field, as heterogeneous assemblages on-goingly exchanging their properties in relatively structured settings: to open the black box of technology as well as the well-regulated ballet of the field.

Whilst it remains the case that the field is one of the most sophisticated frameworks we have, it should not be wielded uncritically without articulations (Prior, 2005). Only when applied with caveats and supplemented with additional interventions can it be usefully be put to work. It is not watertight, but if tweaked to allow for moments of disruption and the unscripted, for the non-human and the transformative, it might be able to confront the challenges posed by the emergence of genres such as glitch. To invoke the metaphor of the prism, sighting the actor network through the field and vice versa might give us some valuable insights into the strengths and weaknesses of both. This would be to create temporary intellectual adjunctions between two of the most advanced tools available, not necessarily to synthesize them, but to create points of friction in a spirit of mutual critical practice. In this process, we don't disavow the blind spots within contemporary theories, but deploy them in productive ways to reveal how the blanks might be filled. Only through

this movement will a theoretically-advanced sociology of music be able to tackle the intricacies of contemporary style, form and practice.

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