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BOURDIEU, TECHNIQUE AND TECHNOLOGY*

Abstract

This paper examines the place of technology in Pierre Bourdieu's social theory, and argues for the relevance of Bourdieu's thought to the study of technology. In moving from an examination of the status of technology in Bourdieu's work through to his broad approach to social practice and his widely cited concept of *habitus*, it is argued that technologies are crystallizations of socially organized action. As such, they should be considered not as exceptional or special phenomena in a social theory, but rather as very much like other kinds of social practices that recur over time. Ultimately, through the use of Bourdieu's concepts of *habitus*, *field*, and *capital*, we are able to overcome the binary divisions such as technology/society and subject/object that have plagued technology studies.

Keywords

Pierre Bourdieu; technology; science and technology; technique; habitus; Marcel Mauss; Norbert Elias; cultural studies; new media; digital media

EVEN A CURSORY look at the human sciences over the past decade indicates an increased interest in scholarship on technology. If the human sciences underwent a 'hermeneutic turn' in the 1970s and 1980s, they may now be undergoing an even larger 'technological turn' in the 1990s and 2000s. This is not an exact parallel, since university administrations have a great deal more interest in what they call 'technology' than they ever had in hermeneutic and metacritical scholarship. Under the rubric of 'technology', universities and colleges have funded new faculty lines (especially in departments dedicated to the study of communication, business and education), new teaching initiatives and new directions in research. External funding abounds for scholars interested

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in technological questions and even more for those interested in *applications* of digital technology to business, scholarly or pedagogical enterprises. These conditions have helped to steer the study of technology toward topics and approaches particularly amenable to business, military, and other applied administrative purposes.

For instance, consider the use and non-use of the word 'digital' as a modifier to the word 'technology' in academic discourse. Academic job descriptions, grant announcements and journal articles joyfully collapse the historically specific instance of digital technology with the category of 'technology' itself. In this logic, if you are to care about technology, then your work is supposed to be driven by an interest in that which is new and digital. Alternatively, take the example of the phrase 'new technologies'. Most of the so-called 'new' technologies have been around for decades. Comparatively speaking, personal computers have been available on the consumer market just about as long as radio had been during its so-called 'golden age' of the late 1920s and 1930s, and somewhat longer than television had been during its so-called 'golden age' of the 1950s. To refer to digital media as 'new' technologies is to import the value-system of advertisement into scholarship, where 'newness' is itself an index of sociocultural significance and transformative power.

The wind also blows the other way, as corporate players in the technology field take up discourses originally intended as wholly academic. The most notable example of this trend can be seen through the travels of the idea of 'online community'. Critical scholars have shown wide interest in the problem of 'community' online: what it is, how it works, and so forth.[1] Yet, as Steve Jones and David Silver have pointed out, these same concepts of community have been widely adapted by dotcoms in an effort to market their product. Amazon.com and ebay.com are now just as likely to market themselves to advertisers and investors on the basis of their own branded 'communities' of users as they are to market themselves on the basis of the products and services they offer (Jones, 1999; Silver, 2001). One could probably tell a similar story about the concept of 'online identity'.

Under these conditions, the force of the 'preconstructed' – as Pierre Bourdieu has called it – weighs heavily upon anyone who chooses to study technology, since the choice of a technological object of study is already itself shaped by a socially organized field of choices. There are many forces in place that encourage us to ask certain questions of technologies, to define technology in certain ways to the exclusion of others, and to accept the terms of public debate as the basis for our research programs. At worst, the relevant problems in, issues of, and approaches to technology appear entirely self-evident to us, based on the ways in which we have become accustomed to thinking about technologies as consumers, readers of the press, users, investors (lest my faculty readers forget where some of their retirement funds may rest!), or otherwise players in the technological field. At best, we – with some effort – assert our

intellectual independence from journalistic or business concerns to ask questions of technology that they do not, cannot, or will not.

All this is to say the study of technology desperately needs something like reflexive sociology. Pierre Bourdieu was fond of criticizing sociologists' willingness to take up problems defined in advance in the fields of professional politics (the 'field of power'), journalism or education as if those problems were of transcendent intellectual interest or significance (see the Morooka and Stabile essay in this volume for a discussion of the 'doxosophers'). He argued instead that intellectuals need to fight for their relative independence as they form their research questions, to engage with ongoing intellectual traditions and political struggles rather than the 'current events' pages of newspapers. Bourdieu's ideal of the relatively independent intellectual is far from the reality of how technology is studied today. Instead of outlining a coherent area of intellectual inquiry, scholars' affective and intellectual investments in technology have become part of what he called the *illusio*, the investment in the game, of the academic field itself. To put it more plainly, there are often more mercenary (and unrecognized) forces at work than intellectual interest or political philosophy in scholars' choices of – and approaches to – 'technology' as an object of study.

Bourdieu's sociology has much to offer the study of technology, both because of 'technology"s own current place within the sociology of knowledge, and because Bourdieu's distinctive approach to social thought can help technology scholars resolve some of the social-theoretical problems that continue to plague us. Though Bourdieu rarely wrote about technology *per se,* his work is 'friendly' to technological scholars. Using a phrase from Robert K. Merton, Loïc Wacquant writes that Bourdieu's interest in the body led him to be interested in sport as a 'strategic research site' (Bourdieu and Wacquant, 1992: 93). As we will see below, the same can be said for the study of technology: it too is a strategic research site for thinking about the relationships between embodied experience, organized movement and the organization of society.

I have argued thus far that there are extraordinary institutional pressures on technology scholars to think about technology in certain ways, to ask certain kinds of research questions about technology to the exclusion of others. The first move must therefore be what Bourdieu and his collaborators have called an 'epistemological break' with the 'common sense' of technology. The epistemological break (or 'rupture' as he later calls it) is the moment when scholars are able to leave behind the force of the various prenotions that operate in the field they study see their objects with ''a new gaze', *a sociological eye*' (Bourdieu, in Bourdieu and Wacquant, 1992: 251, original emphasis). In *The Craft of Sociology*, Bourdieu and his collaborators suggest a variety of ways to break with available prenotions, all of which require detailed attention to method, reflection on choices of language and descriptive mode, and the use of carefully constructed sociological concepts to describe the phenomena under analysis (rather than using the available clichés). To summarize the operations involved in the break,

they quote Paul Fauconnet and Marcel Mauss, 'serious research leads one to unite what is ordinarily separated or to distinguish what is ordinarily confused' (quoted in Bourdieu *et al.*, 1991: 15; see 13–30 for a full discussion of the variety of paths to the epistemological break).

After this break is made, the task of the researcher is to 'construct the object' of study. Bourdieu has repeatedly argued that the construction of the object – the choice of theoretical stakes; the ideas, events, and processes included and excluded from the object of study; the approaches or 'methods' to be used; and the conceptualization of that object within a larger field of objects – is perhaps the most important part of social research. It is the moment at which questions are formed and problems delimited, where the researcher decides which questions are essential and tertiary, which phenomena primary and secondary, and which things to approach in depth and which to sketch (see Bourdieu *et al.*, 1991: 33–55; Bourdieu and Wacquant, 1992: 220–4). Thus, this essay is an attempt to think through the construction of technology and technologies as objects of study.

Bourdieu's unwillingness to constitute 'technology' as a stable concept for social theory is instructive for technology scholars. It allows us to consider the domain of struggle over what is and is not 'technological'. It forces us to wrestle with the messy process of constructing technology as an object of study each time we ask a new intellectual question. In other words, the lack of a well defined, governing concept of 'technology' forces us out of the realm of philosophy and into the realm of sociology, as Bourdieu saw it. The next section of this essay examines Bourdieu's approach to technological questions in his work. From there, my examination of Bourdieu's approach to technology leads out into his general approach to organized social action, and especially his concept of *habitus*.[2] The *habitus* is perhaps Bourdieu's most well known concept in the USA, but it has its own expansive intellectual history, part of which I trace here in the writings of Norbert Elias and Marcel Mauss. Like Bourdieu, both Elias and Mauss used *habitus* as a way of discussing embodied subjectivity, 'practical knowledge' as Bourdieu calls it. Bourdieu's distinctive contribution was to treat *habitus* as itself stratified across a society (as opposed to Elias and Mauss, who tended to think of habitus as stratified across different societies or epochs). Both Elias and Mauss made explicit the intricate connections between habitus as the socially organized based of physical movement – how people walk, sit, carry themselves, etc. – and the use of instruments or technologies. Though Bourdieu does not focus on this technological dimension of *habitus*, his innovation of the concept makes it all the more useful for a social theory of technology. As I will argue, technologies are essentially subsets of habitus – they are organized forms of movement. In this way, technologies are theoretically unexceptional. They are very similar to other ways in which we organize social practice through the habitus. This alternative to approaches that exceptionalize technology allows us to do away with the yawning gap between 'technology' and 'society' that has animated so many social theories of technology.

Bourdieu once said that 'what is nowadays called theory is often commentaries on canonical authors . . . or reports produced for teaching purposes' (Bourdieu, in Bourdieu *et al.*, 1991: 257). Though the language of this article may appear at times conceptual and theoretical, my goal is not to produce a grand Bourdieuean 'theory' of technology but rather to explain some areas in which I have found his thought to be applicable to or beneficial for the critical study of technology, and how I have placed 'technological' issues within his approach to society. Like other writers of his stature, Bourdieu is best read as food for thought, as someone who trains his readers to ask certain kinds of questions. Indeed, this seems a fitting approach for a memorial issue dedicated to his work. The pedagogical reading seems eminently preferable to the tendency to import Bourdieu (and other continental authors) as 'theory', where their writings are uncritically adopted as a conceptual model and distinctive jargon into which readers are told to plug whatever objects cross the horizon of their intellects. Thus, the purpose of this article simply to shed some light on the place of technology in Bourdieuean sociology and thereby suggest some ways in which Bourdieu might help us to better study technology.

Bourdieu does technology

At first glance, it would appear that Bourdieu rarely confronts technology head-on. His two books on media, for instance, seem on the surface to say relatively little about technology. Yet, they do suggest that what Bourdieu calls 'technical objects' are worthy of sociological study. In *Photography: A Middle-Brow Art*, he begins by asking the simple question: why are cameras and the practice of photography so widely diffused throughout French society? The answer is not as simple as we might think:

> There are cheap cameras and, unlike more demanding activities, such as the practice of playing a musical instrument, photography requires little or no training; [but] the absence of economic and technical obstacles is an adequate explanation only if one hypothetically assumes that photographic consumption fills a need that can be satisfied within the limits of economic means. But does this not amount to doing away with the sociological problem by providing an explanation what sociology should be explaining?
>
> (Bourdieu, in Bourdieu *et al.*, 1990: 14)

Bourdieu's answer is that photography does not simply fill a need per se, but that in order to understand the meaning of manual workers' photography, we must understand their relationship to their class condition (1990: 16). This is where the technical aspect of the camera itself enters his discussion. Photographic

hobbyists among manual workers stress their enthusiasm for simple machinery as *both* a valorization of their own skill and a recognition of the financial obstacles to buying a fancier camera: 'This sort of "do-it-yourself" attitude resists the seduction of the technical object as much as it succumbs to it. . . . Affecting a disdain for the refinement of technical objects in the name of the refinement of the technician is the most realistic way of recognizing their inaccessibility without renouncing their sophistication' (1990: 18).

Bourdieu's collaborator Jean-Claude Chamboredon also pays some attention to the physical technology of the camera, both as a fetish for photographers – he quotes one photographer saying 'I love my Leica both physically and emotionally' – and as a structuring material condition of the practice: 'the state of photographic technology obliges photographers to carry out specific operations which pre-exist their intentions, and which can therefore not be conceived as gestures freely brought about by their creative intentions and modeled on those intentions' (Chamboredon, in Bourdieu *et al.*, 1990: 138–9).

As we will see below, this is not a condition unique to the use of technology. Rather, the camera in both these examples is a little crystallized set of operations incorporated into the habitus: the technical aspects of photography are one set of relatively fixed principles (among others) upon which creative photographic practice is based. I use the term 'little' in referring to the set of operations performed by the camera because it is one part of a whole complex of social forces and orientations (many of which, such as economic constraint and class disposition as a response to that constraint, are not tied directly – or at least intuitively – to technologies) and indeed cannot act without them. A person may possess a camera and have no desire to use it, or may build an entire 'do-it-yourself' aesthetic around the enthusiastic and sophisticated use of a relatively simple camera.

If we are fishing for statements on technology in Bourdieu's work, the much more recent *On Television* (1996) reads in a fashion similar to *Photography*. Bourdieu's comments on television relate more to the habits and practices of 'the journalistic field' and its relations to intellectuals and the state of public discourse in France than they do to anything resembling a theory of television as a technology. For instance, he invokes intellectuals' long history of opposition to 'fast thinking' (a history he traces back to Plato) in his critique of the roles intellectuals are forced into on television: the kind of 'fast-thinker' required by television is most likely to 'think in clichés, in the 'received ideas' that Flaubert talks about – 'banal, conventional, common ideas that are received generally'. Fast-thinkers 'offer cultural "fast food" – predigested and prethought culture' – in part because they are easily found in journalists' little black books and also because the people 'who really have something to say' require more effort to seek out, and may not be well-trained to speak to the press at all (Bourdieu, 1996: 11, 28). While writers like Neil Postman (1985, 1999), for instance, have attributed this form of rapid-fire intellectual practice to the technological

characteristics of the television medium itself, Bourdieu takes a more sociological view, arguing essentially that the enabling and constraining conventions of the journalistic field, rather than the technology itself, shape the possibilities for action on television (see also Bourdieu, 1996: 68–9).[3]

Because he rarely deals directly with objects that we recognize as technological, Bourdieu's French interlocutors have dismissed him on the ground that he is an instrumentalist. Deleuze calls Bourdieu's approach a 'sociology of strategies' fixed within a 'closed, exchangist cycle' (Deleuze, 1988: 36, 142 n. 7). Bruno Latour, while he admits to painting Bourdieu with too thick a brush, writes that in Bourdieu's analysis of power 'science, technology, texts, and the contents of activities disappear' (Latour, 1993: 6). While it is true that Bourdieu never confronted the 'technological' aspects of social life head on, he has vitally rethought a set of fundamental social-theoretical questions that occupy scholars of technology today (which is of course not to say the *only* set of fundamental questions). These are the same questions that have traditionally challenged social theorists: the standard dualisms of individual and society, creativity and constraint, activity and passivity, and structure and agency.

For technologists, what is the first lesson is to be taken from a sociologist who resolutely refuses to substantialize (or to offer a substantive *a priori* definition of) the category of 'technology'? The answer is so simple it is easy to miss: to substantialize 'technology' as an abstract philosophical category is to bracket the very questions that are supposed to be asked when we do a sociology of technology (see Bourdieu, 1998: 4). We can see this in Bourdieu's approach to photography: technology is not simply a 'thing' that 'fills' a predetermined social purpose. Technologies are socially shaped along with their meanings, functions, and domains and use. Thus, they cannot come into existence simply to fill a pre-existing role, since the role itself is co-created with the technology by its makers and users. More importantly, this role is not a static function but something that can change over time for groups of people. One can look to the history of the record player – the turntable – as an example of this. What began as a playback device was turned into a musical instrument over the course of the 1970s. In part, this was the result of changing attitudes toward what constituted the public performance. The turntable is a classic case of people making a 'virtue' of necessity. Just as Bourdieu's French worker who could not afford a fancy camera made a virtue of (and indeed, developed a form of virtuosity from) pushing the limits of a more basic camera, so too did the lower-class (and mostly non-white) 'turntablists' convert a playback medium into a musical instrument in a world where musical instruments were very hard to acquire (see Rose, 1994; Thornton, 1996; Dimitriadis, 2001). At what point is the phonograph a playback device and at what point is it a musical instrument? These are not questions that can be answered 'scientifically' or through *a priori* reasoning. Rather, the analytical categories of 'instrument', 'playback device', and even 'use', 'function', or 'role' are derived in reaction to the practices

affiliated with the technology – the practices that essentially *make* the technology in the first place.

Beyond the ways in which we classify technologies, the category of 'technology' is itself a social artefact. At the beginning of *Distinction*, Bourdieu considers technology as a category opposed to 'art' as he discusses the difference between technical and aesthetic objects. Again, he is primarily interested in the social dimensions of the distinction between 'technology' and 'art' rather than the characteristics of technology and art 'in themselves':

> Within the class of worked-upon objects, themselves defined in opposition to natural objects, the class of art object would be defined by the fact that it demands to be perceived aesthetically, i.e. in terms of form rather than function. But how can such a definition be made operational? Panofsky himself observes that it is virtually impossible to determine scientifically at what moment a worked-upon object becomes an art object, that is, at what moment form takes over from function.
>
> (Bourdieu, 1984: 29)

He goes on to argue that the distinction is itself a function of socially conditioned perceptions of art: 'never perhaps has more been asked of the spectator . . .' (Bourdieu, 1984: 30). The converse of both statements is also true: we cannot determine, before the fact, the moment when an object becomes a technology because part of its 'technological' use comes from the ways in which it is beheld – or simply held, for that matter. This basic, definitional level is a place where the epistemological break is really important. In casual talk, we are more likely to think of cars or computers as kinds of 'technology' than we are clothes or doors. Yet clothes and doors are every bit as technological as cars and computers, and – most importantly, as I discuss below – their meaning, use, and 'role' in actual social practice may depend on their connections with things like cars and computers. In fact, clothes, doors, cars and computers are all implicated *together* in political struggles of the domains of 'private' and 'public' in social life.

Therefore, it is clear that we cannot work with an *a priori* definition of technology and graft it onto social practice. Yet to offer *no* substance to technology suggests that it is purely a matter of perception whether or not something is 'technological'. This is where Bourdieu's famous distinction between 'practical reason' and 'theoretical reason' comes into play. As academics, we work in the world of concepts: we fashion them, polish them, and apply them. Our concepts do not in any way directly reflect the essential reality of social practice: on the contrary, they are deliberately created *as* academic concepts – and 'technology' is an academic concept *par excellence*. As David Noble (1977) points out, our modern conception of technology as 'the practical arts, collectively' comes from a Harvard University lecture. However, the social world is not guided by our theoretical reason, it is instead guided by what Bourdieu calls 'practical reason'

– embodied social knowledge that may or may not be conscious. For Bourdieu, practice follows its own logic: not the scholastic logic of academics, but the embodied logic of sedimented history in everyday activity (see, e.g. Bourdieu, 1990b: 80–97; 1998: 127–40). If we do not distinguish between academic logic and practical logic (or rather, if we do not recognize academic logic as only one kind of practical logic), we wind up writing as if the people we study are running around making use of concepts we devised in the process of studying them! As Bourdieu says, we risk committing 'the fallacy of projecting into the object of study the academic relationship to the object or the constructs which this academic relationship has made possible' (Bourdieu, 1981: 305). Thus, to understand how a technology becomes a technology through social practice (rather than through logical deduction), we must turn to Bourdieu's approach to practical reason and his widely-cited concept of *habitus*.

Habitus is a concept that mediates between relatively structured social relations and relatively 'objectified' forms of economic or social agency or interest. Bourdieu uses the term 'field' to describe groups of interrelated social actors, and 'capital' to describe the specific forms of agency and prestige within a given field. These relations of power and forms of agency are in constant flux, and are themselves struggled over: the relations in a field change over time, as does the specific form of capital in that field. 'Fields' and forms of 'capital' are not once and forever fixed (as they would be in a classic structuralist model). Conceptually, the *habitus* sits between these poles, as a set of social dispositions, a kind of 'generative principle' of spontaneous and creative social action based on one's position in a field and one's access to and possession of certain kinds of capital resources. Bourdieu calls his philosophy of action 'dispositional' because it 'noted the potentialities inscribed in the body of agents and in the structure of the situations in which they act or, more precisely, in the relations between them' (Bourdieu, 1998: vii). The habitus is thus not merely a mental state; it is embodied social knowledge – it comes through in everything we do (Bourdieu, 1990b: 68–79). The way a person walks, talks, types, plays a musical instrument, drives, her aesthetic preferences, perceived health needs, etc., all of these attitudes are expressions of habitus: 'There is a particular mode of understanding, often forgotten in theories of intelligence, which consists of understanding with one's body. There are a great many things we understand only with our bodies, at a subconscious level without having the words to say them' (Bourdieu, 1988: 160). Habitus is embodied belief, but it is also a generative principle; it allows for creativity and improvisation:

> I wanted initially to account for practice in its humblest forms – rituals, matrimonial choices, the mundane economic conduct of everyday life, etc. – by escaping both the objectivism of action understood as a mechanical reaction 'without an agent' and the subjectivism which portrays action as the deliberate pursuit of a conscious intention, the free project of a

> conscience positing its own ends and maximizing its utility through rational computation.
>
> (Bourdieu, in Bourdieu and Wacquant, 1992: 121)

In other words, Bourdieu used *habitus* as an alternative to structuralism, where subjects merely carry social structure inside them, *and* as an alternative to a 'philosophy of the subject' where the subject is self-knowing, rational, and its actions are the result of conscious and deliberate will. Elsewhere, Bourdieu has called the habitus a 'nonspontaneous principle of spontaneity' (1990b) because it is essentially sedimented social history as it is lived and embodied in social life. It is spontaneous and generative because agents can act in creative ways, but it is 'nonspontaneous' because the basis of their action is rooted in education, cultural memory, upbringing, and social circumstance. Our habitus confront us as a kind of 'second nature' (Bourdieu, 1990b: 56).

Habitus is an especially powerful concept because it is historical – it changes over time – and because it contains both structural and spontaneous aspects. Thus, we know that while there is tremendous individual variation in the ways in which people carry their own bodies, our ways of 'being in our bodies' are also socially conditioned – as Iris Marion Young has so wonderfully shown in her essay 'Throwing Like a Girl' (Young, 1990; see also Bourdieu, 1990b: 211, 217). Relations to 'technical objects' are similarly organized through this play of 'practical logics' and, as the phonograph example above shows, this practical logic allows agents not only to use technologies, but through practical logic to create and transform them as well. In the next section, I offer an intellectual history of Bourdieu's notion of *habitus* that pays particular attention to its embodied features and closeness to 'technological' actions and objects. I do so to argue that *habitus* – in its relation to *field* and *capital* – can be the methodological cornerstone of a social 'praxeology' of technology.

Fieldwork in the philosophy of technology: habitus, technique and the body

Understood socially, technologies are little crystallized parts of habitus. At a basic level, a technology is a repeatable social, cultural and material process (which is to say that it is all three at once) crystallized into a mechanism or set of related mechanisms. A technology may perform labour once done by a person, which is to say that people design and use technologies to enhance or promote certain activities and discourage others. A technology embodies a particular form of practical reason, such as Bruno Latour's famous example of the door-closer, whose job it is to keep the door closed. Latour argues that a whole set of social relations, practices and assumptions are embedded in the simple mechanism used to keep the door closed at the entrance to a sociology department. The

door closer thus reinforces these structured tendencies even as it acts independently of people once it is built and set up, 'simply' closing the door each time it is opened. Of course, when the door closer does not work (or does not work quite right), this also creates all sorts of crises, simply by virtue of closing the door a little too quickly or slowly (Latour, 1988). Technologies are associated with habits and practices, sometimes crystallizing them and sometimes promoting them. They are structured by human practices so that they may in turn structure human practices. They embody in physical form particular dispositions and tendencies – particular ways of doing things.

To properly explicate what must seem like a grand abstraction, we need to first take a step back from Bourdieu to two of the many people who influenced him: Norbert Elias and Marcel Mauss. Although in his less modest moments, Bourdieu claimed that *habitus* was 'an old Aristotelian and Thomist concept that I completely rethought' (1990a: 10), we will see that elements of both Elias' and Mauss' thought are crucial to Bourdieu's use of the term. Bourdieu's later rejection of mentalist or idealist conceptions of the subject was in part based on Elias' and Mauss' earlier development of *habitus*. In particular, both authors linked the habitus with the organization of physical, bodily practice. Elias was a student of Karl Jaspers, Alfred and Marianne Weber (brother and widow of Max Weber, respectively) and Karl Mannheim. Mauss was Emile Durkheim's nephew and went on to become an influential figure in French anthropology in his own right. Bourdieu cites both as systematic thinkers, and indeed they both precede him in his effort to 'think relationally' (Bourdieu and Wacquant, 1992: 96–7), though Bourdieu is quick to reject the grand scope on which both authors wrote, trimming down the long historical periods within which Elias wrote and replacing Mauss' fuzzy notions of 'total social facts' with more specific objects of study (see Wacquant, in Bourdieu and Wacquant, 1992: 26–7).

Elias' extensive use of the concept of *habitus* in his most famous work, *The Civilizing Process* (1939/2000) has only recently come to the broader attention of English-speaking scholars. *The Civilizing Process* is a vast and sprawling history that juxtaposes the gradual transformation of aristocratic (and later middle class) conduct against the emergent process of state formation over several centuries in Europe. In the introduction to the revised edition, Eric Dunning, Johan Goudsblom and Stephen Mennell explain that 'writing in German in the 1930s, Elias frequently used the term *habitus*, which in the 1970s and early 1980s was quite unfamiliar in English and was therefore generally translated by such expressions as "personality makeup". Since then, particularly through the writings of Pierre Bourdieu, the more precise term "habitus" has re-entered the vocabulary of Anglophone social scientists . . .' (Elias, 1939/2000: xvii). So Bourdieu's own writings have allowed for a clearer retrospective reading of one of his influences: in Elias' own words, his work is about 'the connections between changes in the structure of society and changes in the structure of people's behaviour and psychical habitus' (Elias, 1939/2000: xiii).

Although *The Civilizing Process* has some important things to say about state formation, for our current purposes we should be most interested in Elias' discussions of behaviour. Most broadly, he argues that as Europe moves from medieval to 'modern' social relations, social life becomes more complex and people come to directly depend upon and interact with many more people. The result of this slow transformation is a general trend toward what he calls 'self-constraint', where inhabitants of these societies must regulate their emotional and physical activity more carefully than their medieval predecessors. His discussion of roads exemplifies the difference between either pole of the civilizing process: the medieval road is unpaved, uneven and rarely travelled. On that road, 'when people look around them, scanning the trees and hill or the road itself, they do so primarily because they must always be prepared for armed attack, and only secondarily because they have to avoid collision' (Elias, 1939/2000: 368). At the other pole, traffic in 'the differentiated society of our time' requires a completely different subjective orientation. As motorized vehicles move in an elaborate and carefully orchestrated traffic pattern, 'the chief danger that people here represent for others results from someone in this bustle losing their self-control. A constant and highly differentiated regulation of one's own behaviour is needed for individuals to steer their way through traffic. If the strain of such constant self-control becomes too much for an individual, this is enough to put him or her, and others, in moral danger' (Elias, 1939/2000: 368). Elias' driving example is meant to illustrate his larger argument that social action and social form are two aspects of the same process, and not separate phenomena. Here, we can already see an earlier version of Bourdieu's rejection of commonsense binaries like structure/agency and individual/society. As Bourdieu points out, Elias is more 'sensitive to continuity' than he is – and indeed Elias works at a much broader register of generalization. In fact, there is good historical evidence for a whole middle phase between the medieval and modern poles of Elias' description of life on the road (Bourdieu, in Bourdieu and Wacquant, 1992: 93; for a middle phase between the medieval road and the modern automotive intersection, see the description of stagecoach travel in Schivelbusch, 1986). But periodization aside, Elias' larger methodological point about the identity of social form and social action is something which is developed further in Bourdieu's work.

Elias' analysis of *habitus* goes beyond simply being an instance of a relational conception of society. The most minute physical actions and the most basic of technologies are central hinges in social practice. These actions have to be learned, managed and transmitted. Elias charts two broad-sweeping and related changes to behaviour in the civilizing process: rationalization (as in the driving example above), and a rising threshold of 'shame, repugnance or embarrassment' (Elias, 1939/2000: 414). There is clearly a nod to Freud in his discussion of the restraint of bodily drives and emotions, but for Elias it is not a psychological process *per se*, it is social all the way down. Shame, repugnance and

embarrassment are such visceral emotions, yet Elias deftly demonstrates that they are not in any sense primal: they are taught. In fact, Elias repeatedly uses the socialization of children as an example, since children must be taught the various reactions that adults take for granted as natural (Elias, 1939/2000: xi). Position and disposition are thus fully intertwined, and reproduced through education. Bourdieu's readers should find this a familiar proposition.[4]

The second section of *The Civilizing Process* is dedicated to an extended analysis of medieval and early modern conduct books, generally directed toward young nobles (and later other youth of elites). Elias shows, for instance, the development over centuries of an increasing discomfort with display of the human body, which he summarizes thus:

> First it became a distasteful offense to show oneself exposed in any way before those of higher or equal rank; with inferiors it could even be a sign of good will [for instance, when a noble would receive an inferior while getting dressed]. Then, as [bourgeois classes rose to social dominance], it slowly became a general offence. The social determination of shame and embarrassment-feelings receded more and more from consciousness. Precisely because the social command not to expose oneself or be seen performing natural functions now operates with regard to everyone and is imprinted in this form in children, it seems to adults to be a command of their own inner selves and takes on the form of a more or less total and automatic self restraint.
>
> (Elias, 1939/2000: 118)

Feelings of shame and embarrassment at exposure became a form of second nature, a preconscious disposition informing action. They became part of the habitus, as did the practical use of that most basic of technologies, clothing.

The same can be said for the threshold of disgust. Elias' classic analysis of the fork and behaviour at meals illustrates this well: 'The fork is nothing other than the embodiment of a specific standard of emotions and specific level of revulsion' (Elias, 1939/2000: 107). It serves no *practical* use as it merely lifts food that has already been cut to the mouth – something that could easily be accomplished with the hands. But as he points out, it is socially unacceptable to dirty the fingers in polite society (for a contemporary example – at least in the USA – consider the class connotations of heavily sauced foods that one *does* still eat by hand, such as barbecued meats, and where one does and does not see such food consumed). The fork was born as a technology designed to uphold, promote and refine a social taboo. While children must be taught to not eat with their hands, after years of learning and reinforcement, adults use forks as a matter of course and preference. That, for Elias, is how social prohibitions are transformed into individual dispositions, reactions and habits.

Thus technologies from the most basic – clothing and forks – to the most

complex – automobiles – are deeply tied to techniques of the body, to the ways in which people learn to use and relate to their own bodies. And here is where we find our connection to Marcel Mauss, who further developed the specifically *bodily* dimensions of habitus, and made the explicit link between the human body, instrumentality, and technology. Mauss' essay on 'techniques of the body' has in recent years come to the attention of writers in cultural studies, but it is most often used in relation to Foucault's writings (e.g. Bennett, 1995). Mauss' work serves as the connection back to Elias and forward to Bourdieu in the construction of *habitus* as a concept. 'The body is man's first and most natural instrument', wrote Mauss:

> Or more accurately, not to speak of instruments, man's first and most natural technical object, and at the same time technical means, is his body. [. . .] Before instrumental techniques there is the ensemble of techniques of the body. [. . .] The constant adaptation to a physical, mechanical or chemical aim (e.g., when we drink) is pursued in a series of assembled actions, and assembled for the individual not by himself alone but by all his education, by the whole society to which he belongs, in the place he occupies in it.
>
> (Mauss, 1979: 104–5)

Like Elias, Mauss compiled an extensive list of techniques for investigation: sleep, waking and rest, walking, running, dancing, jumping, climbing, descending, swimming, forceful movements, hygiene, eating, drinking, sexuality and care of the sick. Like Elias, Mauss saw that techniques of the body are constructed through 'physical education of all ages and both sexes' (Mauss, 1979: 108). Like Elias, Mauss choose the word *habitus* to describe the assemblage of series of actions of a given social group:

> Hence I have had this notion of the social nature of the '*habitus*' for many years. Please note that I use the Latin word – it should be understood in France – *habitus*. The word . . . does not designate those metaphysical *habitudes*, that mysterious 'memory', the subjects of volumes or short and famous theses. These 'habits' do not vary just with individuals and their imitations; they vary especially between societies, educations, proprieties and fashions, prestiges. In them we should see the techniques and work of collective and individual practical reason, rather than, in the ordinary way, merely the soul and its repetitive faculties.
>
> (Mauss, 1979: 101, original emphasis)

As this quote illustrates, Mauss extended Elias' analysis of the centrality bodily movement to a notion of *habitus*. He eliminated the Freudian overtones of 'self-control' and emotional repression we see in Elias and replaced them with an

analysis of bodily movement as fundamentally technical, informal, and historical. Thus, in Mauss, psychological conditioning comes after physical conditioning (where in Elias they are more parallel).

For Bourdieu as well, *habitus* has a certain kind of physicality and social memory to it, and the physical precedes the psychological: 'one might say that arms and legs are full of numb imperatives' (Bourdieu, 1990b: 69). It is a form of 'embodied history': 'A man who raises his hat in greeting is unwittingly reactivating a conventional sign inherited from the Middle Ages, when, as Panofsky reminds us, armed men used to take off their helmets to make clear their peaceful intentions. This re-enactment of history is the work of the habitus . . .' (Bourdieu, 1981: 305). Bourdieu makes this point even more explicitly in a speculative discussion of totalitarian institutions' use of dance and sport. He writes that 'the methodological manipulation of the body [. . .] is a way of obtaining from the body a form of consent that the mind could refuse' (1988: 161). Once again, bodily practice *precedes* belief. Social practice is organized physically, rather than ideationally. Elias' diners, Mauss' squatters and Bourdieu's gentleman on the street all meet in the same domain: social organizations or 'assemblages' of probable and improbable movements and practices that make up the habitus.

So far, I have primarily discussed the bodily dimension of habitus in relation to technologies such as clothing and forks that are 'close to the body'. But what of technologies that at first blush seem less associated with the human body? Even supposedly 'less embodied' communication technologies always have an embodied element – and in fact the forgetting of the embodied element may in some cases be part of the habitus itself (Bourdieu, 1990b: 56). As other authors have suggested, the investment in digital media – especially computers and the Internet – as somehow itself 'disembodied' is itself part of the logic of the digital media field. Like Bourdieu's gentlemen who tip their hats in greeting and thereby unconsciously evoke medieval soldiers, today's theorists of technological disembodiment reproduce – without conscious intention – a centuries-old discourse of utopic transcendence through the dissolution of the body, or at least its refusal (for fully developed versions of this critique, see Noble, 1997; Peters, 1999; Sconce, 2000). 'Cybertheorists' who trumpet the supposedly disembodied aspects of new media have not made an epistemological break with the social discourse and practices they claim to objectively describe – they are using the discourse of their object of knowledge as if it transparently describes itself: there is always a person sitting at a keyboard and staring at a computer screen. As the rising number of repetitive stress injuries demonstrates, there is very much a physicality to computer use, despite the many claims for the 'disembodied' characteristics of cyberspace.

Therefore, technologies are one part of the physicality of the habitus. But Bourdieu's specific contribution to the concept of *habitus* was to combine it in a triad with his other two key concepts: *capital* and *field*. In this approach to social

life, *habitus* is not only directly connected to the ways in which practices are organized, but is itself deeply shaped by the relations of power within a field, the kinds of capital at work, and the overall structure of the society. Let us consider another example through the Bourdieuean lens to see how this works. The simple fact that the radios in our homes, cars, and on our heads are reception-only devices is the realization and perpetuation of a whole set of social facts of radio: the commercial dominance of broadcasting by large networks and narrowly defined formats for decades (though soon satellite, cable and Internet providers will join them); a federal policy apparatus designed to reinforce that dominance; historically changing practices of radio use that have – since the mid 1920s – emphasized radio as something one *listens to*, not something one *creates* – either individually or collectively (Douglas, 1987, 1999; Smulyan, 1994; Streeter, 1996; Sterne, 2003). Of course, there are exceptions to this, but they prove the general case: 'ham radio' and 'Citizens' Band (CB) radio' are so named to distinguish them from the radios in our homes. The battles in the USA over low-powered broadcasting (and police confiscations of 'pirate radio' broadcasting equipment) also show the degree to which the configuration of radio production and consumption is itself heavily politicized. Low-wattage broadcasters use radio to reach very small audiences – a neighbourhood, a local region or even a single apartment building. They are generally non-commercial and provide content markedly different from larger commercial and non-commercial stations. But even those broadcasters purportedly oriented toward the public interest fought against the legalization of low-powered radio (Riismandel, 2002).

Technologies are of particular social-theoretical interest because of the ways in which they tend to 'sediment' social relationships, and this is exactly what has happened in the case of radio. As Lewis Mumford put it, understanding technology 'is also a means toward understanding society and toward knowing ourselves. The world of technics is not isolated and self-contained: it reacts to forces and impulses that come from apparently remote parts of the environment' (Mumford, 1934/1963: 6). But Mumford did not offer a clear way to talk about the interrelations among those apparently 'remote' part of the environment. Bourdieu's relational thought offers a more developed approach to the analysis of those very connections. In the radio example, some practices were supported while others were marginalized by commercial interest, thereby leading to the definition of radio as a primarily commercial and 'broadcast only' medium. *How* power enables and disables practices around radio or any other technology depends upon the players within the field and the moves that can be made at any particular moment. As I have argued elsewhere, we know

> to call the various kinds of wireless telephones [cellular, PCS, etc.] 'phones' instead of 'radios' because they are associated with the institutions and practices of the phone system, despite the fact that they are themselves wireless transmitters (which would theoretically, at least, make them

> radios). 'Phone' is really a linguistic shorthand for a whole set of related institutions, technologies, people, and practices that are conveniently (and perhaps necessarily) forgotten when we place our calls.
>
> (Sterne, 2003: 182)

Thus, the most basic questions of technology are always social questions.

One could imagine a whole field that contained the totality of a society's technological practices, where technological production and consumption would come together. Obviously, it is well beyond the scope of this essay to suggest what such a field might look like, but there are a few things worth noting. Like all bodily practices according to Bourdieu, technological practices are socially stratified (see, for example, his discussion of the 'field of sport' in Bourdieu, 1978). This is an obvious enough point: different groups of people use different technologies in different ways at different moments. However, Bourdieu carefully cautions against the substantialist fallacy where we come to associate certain specific practices with certain groups. This can be seen today in the argument that a particular technology is 'gendered' or 'raced'. In fact, the gender, race (and class) connotations of a technology and its associated techniques can easily change over time, as is well illustrated by the history of the typewriter. At different times, it has been the instrument of the elite and the poor, a technology suitable mainly for men or mainly for women (see Jensen, 1988; Kittler, 1999). We could say the same thing for the racial connotations of the sampler in popular music, or the gender and class connotations of the bicycle (Goodwin, 1990; Rose, 1994; Bijker, 1995). Even the initial ideology of cyberspace as 'raceless' has begun to shift over the past few years (Kolko *et al.*, 2000). A technology is always, at any given moment, socially located. It is always implicated in social struggle.

A particular 'practical sense' organized through a series of technologies is always conditioned by its social location and by forms of capital available for use and under contest in any given field. The 'practical sense' of technologies, while experienced at an individual and (dare I say it?) phenomenological level, carries with it the sedimented social history of relations in which that technology was once embedded, and the relations in which the experiencing individual is embedded. The 'techniques of the body' and the mechanized, sedimented and related techniques that make up technologies are thus, in Geertz's phrase, social 'all the way down'. They are eminently physical and socially durable, but as practices they are also always undergoing a process of transformation based on their actual use. As a concept, *habitus* helps us to approach the sociology of technology as sociology first, and technology second. But to do so, we must in turn consider the habitus as itself eminently social and political, which to say, always grounded in a specific context.

Conclusion: a social praxeology of technology?

Though I have focused here on Elias and Mauss, Bourdieu clearly blended many intellectual influences in his own work, and the best way to honour him is to continue down the path of intellectual heterodoxy. I hope this essay has shown how his distinctive approach to social thought, what Loïc Wacquant has called 'social praxeology' has much to offer technological scholars as a set of working principles and intellectual orientations. So, although I will not close with a call for a 'more Bourdieuean' approach to technology, the programmatic reading I have undertaken in this essay could be distilled into the following principles.

1.

To be intellectually effective, technology scholars must willfully construct their objects of study, and not accept 'pregiven' objects or 'prenotions'. This requires us to try and make an epistemological break from the objects we study, so that we do not simply describe them in their own terms. This is especially crucial for technology scholars who are approached from all sides with pregiven objects, approaches and programmes of study. Our job is to provide real insight into technology as a social phenomenon. It is not to settle accounts in the field of digital media, to extend analyses in the business pages, or to find new commercial applications for producers of digital technologies – though there may be appropriate times to address those different audiences in our work.

This requires that we attend to the 'construction of the object' in our research. It means that we should take seriously the notion that even in so-called 'critical' research, research *design* is a central part of our work. We must also be willing to make deep theoretical connections from unexpected places: 'The *summum* of the art, in the social sciences, is, in my eyes, to be capable of engaging very high "theoretical" stakes by means of very precise and often apparently mundane, if not derisory, empirical objects' (Bourdieu, in Bourdieu and Wacquant, 1992: 220). In other words, the relative prestige of an object of study (for instance 'science' vs. 'sport') cannot in advance forecast the quality of insights generated by the study of the object. It is on us, the researchers, to construct our objects so that they address important questions.

2.

We cannot substantialize, ahead of time, 'technology' or 'kinds of technology'. Rather, our concepts of technology must be fashioned in response to the specificity of the practices we study. An important corollary to this approach is that 'theory' and 'research' are, by definition, intertwined: theoretical reasoning happens throughout the research process, but the research does not simply 'test'

a theory. Rather, it must be a constant give-and-take between the empirical objects we choose for ourselves and the theoretical concepts we build to describe them.

3.

Because technologies do not have an existence independent of social practice, they cannot be studied in isolation from society or from one another. They are embodied in lived practice through habitus, and so even the most basic 'phenomenological' aspects of technological practice and experience are themselves parts of the habitus. Their nature (or artificiality, as the case may be) is second nature. At the level of actual practice, technologies are always organized through (and as) techniques of the body; and so the 'form', 'use' and 'function' of a technology cannot be separated from the practices with which it is bundled. As part of the habitus, technologies and their techniques become ways of experiencing and negotiating fields. Technologies are always implicated in and shaped by social struggles. Consider, for instance, the degree to which American welfare and welfare-to-work policies favour those people who have cars, despite the reality that the poor and jobless are the least likely to own an automobile (Ehrenreich, 2001). This apparent paradox reproduces a larger social logic – the privilege of transportation by automobile in American society – by directly connecting 'upward mobility' with automobility. Moreover, as is usually the case, this 'single technology' is actually tied to a whole range of technologies: the car is connected to a road system, a semaphore system, a whole civic architecture built around driving instead of walking, radio, telephony, and so forth – a point well documented by Langdon Winner (1986). Thus, the systemic marginalization of non-drivers by welfare law is part of a much larger social-systemic marginalization of non-drivers by cities in general. Technologies are always already social and always already connected to other technologies – they exist within the always-shifting totality of a technological field (this is a parallel argument to Bourdieu, 1988: 153).

Ultimately, Bourdieu's work challenges critical technology scholars to let go of our own investments in technology as somehow *ontologically special*, as somehow a unique part of social practice or an object that by its very nature provides special insight into social life. Even after the dot com euphoria has subsided, this is perhaps the most difficult thing we could be asked to do. After all, what scholar has not at one moment or another insisted upon the 'specialness' of his or her object of study? Technology scholars are not only encouraged to do this by our own typical academic hubris; we are also surrounded by institutional imperatives to study technology, to study it in a certain ways, and to fetishize it as a matter of particularly grand significance.

In accepting this challenge, we accept more hard work. We are forced to

reconstruct technology as an object of study each time we encounter it in a new context. For once we let go of technology as having some kind of inherent, special significance in itself – we are thrust back into the messy questions of social theory. A social praxeology of technology is really just a subset of social praxeology, just as technologies are just particularly visible sets of crystallized subsets of practices, positions and dispositions in the habitus. They are merely one sort of 'sedimented history'. Technologies may indeed 'influence' us, but only because all of our actions influence our future actions. All of our actions – whether creative or repetitive – are structured by enduring dispositions and techniques of the body. While technologies may contribute to shaping practice, it is only because practice is always shaped by the sedimented history within it, even as its spontaneity becomes the basis for the creation of new practices, experiences, and social relations. The reading of Bourdieu's thought in this essay casts technology as a deeply and inextricably physical human enterprise. When we refuse a conception of technology as ontologically special, we are set free to pursue it as a fully constructed object of study. When we obliterate the long-imagined distinction between technology and society, we are able to unite what is ordinarily separated and distinguish what is ordinarily confused.

Notes

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1 I use the term 'critical' to avoid definitional questions such as 'what counts as a cultural study of technology?' (For my answer to that question in the context of Internet research, see Sterne, 1999.)

2 A note on usage. I have italicized *habitus* when referring to the concept (e.g. 'Bourdieu's notion of *habitus*'), and left it unitalicized when I mean it to designate the referent of the term (e.g. 'the habitus is a durable set of dispositions').

3 The same could be said for his analysis of television's powers of dissemination, though I think here Bourdieu comes too close to the intellectual fashion of denouncing dissemination *qua* dissemination: 'When the information supplied by a single news medium becomes a universal source of news, the resulting political and cultural effects are clear. Everybody knows the "law" that if a newspaper or other news vehicle wants to reach a broad public, it has to dispense with sharp edges and anything that might divide or exclude readers' (Bourdieu, 1996: 44). As Bourdieu points out elsewhere in the book, the problem is not the fact of dissemination but rather the assumption that dissemination requires this kind of condescending, 'inoffensive' relationship between a medium and its audience. A hostility to dissemination in communication

per se, as I have argued elsewhere, leaves intellectuals far too little room for progressive visions of large-scale societies (see Sterne, 2003: 341–51).

4 Clearly, there are connections to be made between Elias' interest in children and Bourdieu's (and his collaborators') interest in the institutionalization of education (Bourdieu and Passeron, 1977), but that is a topic to pursue elsewhere.

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