

When Mobiles Go Media: Relational Affordances and Present-to-Hand Digital Devices

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Abstract: This article argues that the reasons people adopt—or resist adopting—media capabilities on their mobile devices are largely concerned with their experience of control over technology. In particular, the ever-present, ready-to-hand nature of media on mobile devices plays a strong role in establishing and mediating these relationships of control. To substantiate this argument, I draw on findings from a qualitative research study undertaken of Canadian users of digital screen devices. This work is significant not only in helping us to understand why certain technologies fail to catch on, but also to shed light on our continued concerns about technology. These concerns may be voiced as worries about our needs, our pleasures, our identity or our status, but they boil down to our ability to feel in control of our technologies.

Keywords: Mobile; Media; Present-to-hand; Actor-network theory; Technology; Culture; Phenomenology; Affordance; Resistance; Control

Résumé : Cet article soutient que les raisons pour lesquelles les gens adoptent—ou résistent à adopter de nouvelles fonctions sur leurs appareils mobiles ont grandement trait à leurs expériences de contrôle par rapport à la technologie. En particulier, le fait que ces fonctions soient toujours à portée de la main joue un rôle important dans l'établissement et la médiation de ces rapports de contrôle. Pour appuyer mon argument, j'ai recours aux résultats d'une étude quantitative portant sur des utilisateurs canadiens d'appareils comportant des écrans numériques. Cette étude est signifiante non seulement parce qu'elle nous aide à comprendre pourquoi certaines technologies sont des échecs commerciaux, mais aussi parce qu'elle peut nous éclairer sur nos préoccupations à l'égard des technologies. Ces soucis peuvent se manifester comme des inquiétudes par rapport à nos besoins, nos plaisirs, notre identité ou notre statut, mais au fond ils ont souvent trait à notre habileté à contrôler ces technologies.

Mots clés : Mobile; Média; À portée de la main; Théorie de l'acteur-réseau; Technologie; Culture; Phénoménologie; Affordance; Résistance; Contrôle

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By this time, everyone knew what ‘the killer application’ . . . was, at least in broad terms: the hybrid device, most notably, combining telephony with music. Still, it was thought, but probably with little conviction, that more people could be persuaded to watch television on their mobile phones.

—Jim McGuigan (2006)

It would be an understatement to say that mobile phones have been popular over the past decade. Reasons for this popularity have been the subject of various academic inquiries, which have examined issues such as the impact of these devices on fashion, identity, information consumption, social networking, and social control. The specific focus of how people make use of the media capabilities on their mobile devices has been less well studied. I argue here that the reasons people adopt—or resist adopting—media capabilities on their mobile devices are largely concerned with their experience of control over technology. In particular, the ever-present, ready-to-hand nature of media on mobile devices plays a strong role in establishing and mediating these relationships of control.

To substantiate this argument, I draw on findings from a qualitative research study undertaken between 2005 and 2007 of Canadian users of digital devices. The findings indicate that the devices’ ever-presence-to-hand is key to all forms of portable media use. At the same time, many are resistant to media use on their devices. Users express disdain for media options available, and are unable or unwilling to incorporate these capabilities into their everyday lives. Further, users’ rejection of these media capabilities suggests a need to reclaim control as technologies take on an ever-more-pressing presence in our lives.

This work is significant in helping us to understand why certain technologies fail to catch on; it also sheds light on our continued concerns about technology. These concerns may be voiced as worries about our needs, our pleasures, our identity, or our status, but they boil down to issues about control and our ability to feel in control of our technologies. To understand these concerns is to understand a fundamental contemporary experience. This study takes a step in the direction of understanding user experiences of control over their technologies.

Methodology

The study that informs this paper consisted of in-depth semi-directed interviews with 38 users of mobile digital devices. Participants were selected through face-to-face recruitment and snowballing

Table 1: Demographic attributes of study participants

| | | |
|--|----------------------|-----|
| Annual income | Negligible—\$24,999 | 18% |
| | \$25,00—49,999 | 33% |
| | \$50,000—74,999 | 27% |
| | \$75,000+ | 21% |
| Highest level of education attained | High school | 39% |
| | Undergraduate degree | 45% |
| | Postgraduate degree | 16% |
| Age | 18–24 | 18% |
| | 25–39 | 39% |
| | 40–54 | 24% |
| | 55+ | 18% |
| Sex | Male | 53% |
| | Female | 47% |
| First language | English | 63% |
| | French | 18% |
| | Other | 18% |

to fill a sample reflecting the age, occupation levels, language, and ethnic background of the larger population (see Table 1). The study took place between 2005 and 2007 in Ottawa, Ontario, which borders the neighbouring francophone city of Gatineau in Québec, where several of the participants resided. Participants ranged from 18 to 66 years in age and were from a range of ethnic, linguistic, and occupational backgrounds. Income levels ranged from negligible (students, persons on disability or unemployment insurance) to high (over \$100,000 per year), with most falling in the moderate (\$25,000-75,000) range. A number of the participants spoke more than one language; English was the most common first language, followed by French, Spanish, and Arabic. This was due

Table 2: Familiarity and comfort with information technology

| | | |
|--|------------------|-----|
| Occupation | Non-IT-related | 67% |
| | I.T.-related | 13% |
| Comfort level with technology | Low | 13% |
| | Medium | 45% |
| | High | 42% |
| Years of experience using a computer | 1-5 years | 8% |
| | 5-10 years | 31% |
| | Over 10 years | 61% |
| Internet at home | No | 14% |
| | Less than 1 year | 14% |
| | More than 1 year | 54% |
| Own or had owned a mobile phone | Yes | 76% |
| | No | 14% |
| Self-rated knowledge of mobile phone* | Low | 15% |
| | Medium | 41% |
| | High | 44% |
| Frequency of mobile phone use* | Daily | 67% |
| | Less than daily | 33% |
| Own or had owned a PDA | Yes | 25% |
| | No | 75% |
| Self-rated knowledge of PDA* | Low | 38% |
| | Medium | 0% |
| | High | 62% |
| Ownership of other mobile devices | Yes | 14% |
| | No | 86% |

(* = of those who owned one)

to the ethnic composition of the largely bilingual, somewhat multicultural Ottawa/Gatineau region. Familiarity with technology varied, with some participants new to mobile devices, computers, or the Internet and others long-time mobile device users or employed within technology fields (software assurance, systems analyst, web advisor) (see Table 2). All participants owned or had owned one or more of the digital technologies under examination. The interviews were semi-structured to allow for comparison among participants, but with enough flexibility to truly capture the individuality of user experience (see Table 3). The data generated was considered to have high internal validity as it was “real, rich, deep and thick” (Singletary, 1994, p. 268). External validity is not an outright goal of qualitative research, and this is certainly a limitation of the study. However, the interview subjects were selected to offer a range of socio-economic and technological literacy profiles. Further, the interview data did reach the point of saturation, where there was little to no new information generated by the latter interviews. Finally, the length of the interviews resulted in huge amounts of data that allowed for a great depth of analysis even if the number of

Table 3: Types of questions asked

- Can you describe your device for me?
- What do you like about your device?
- What do you dislike about your device?
- Have you changed or modified anything on your device?
- Would you classify your device as user-friendly?
- Would you say you use your device in similar or different ways from other people you know?
- Can you describe for me the last time you discussed your device with another person?
- How do you feel about owning your device?
- What other devices have you had of a similar nature? How does this one compare?

interviews is small compared to large quantitative studies. The interviews were taped and transcribed, resulting in 1,406 transcribed pages. Data was coded in its entirety using NVivo software. It was coded separately by

Table 4: Common codes

| | |
|------------------------|---|
| Time filler | Territorializing: status Trade-off Not necessary Not worth entertainment commitment Value/status Competition among time-filling strategies |
| Media appendage | Utilitarian Omnipresent time filler Habit forming Attachment Mobility and creativity Background use Embodiment experience |
| Immersion | Mind/matter Personal space Hybrid appendage/immersion |
| Monitoring | Information seeking |

two researchers for intercoder reliability, then common codes were extracted and quotes arranged thematically (see Table 4).

The relational quality of technology

Mobile digital communication technologies have become a focus of recent academic interest. Mobile phones, personal digital assistants (PDAs), and other portable information and communication technologies have been shown to engender specific social and cultural effects. For instance, a number of recent studies have found cross-cultural similarities in the use and enjoyment of mobile

phones (Ling & Yttri, 2002; Wei, 2006; Wei & Lo, 2006). Fashion in particular has been suggested as a major influence in mobile use (Campbell, 2007; Fortunati, 2002; Katz & Sugiyama, 2006). A related area of inquiry has interrogated the way in which people constitute their identities in part by using their mobile phones as a portable, embodied status marker (Campbell, 2007; Fortunati, Katz, & Riccini, 2003; Katz & Sugiyama, 2006; Oksman & Turtiainen, 2004). A common theme in the literature indicates a split between needs for self-presentation and social differentiation on the one hand, and security and social connection on the other.

Further research has focused on the way in which mobility provides opportunities for increased control over information consumption such as news (Snowden, 2003) and museum content (Fleck, Kindberg, O'Brien-Strain, Rajani, & Spasojevic, 2002; Hsi, 2003), or over social management, such as coordinating personal social circles (Ishii, 2006; Ling & Haddon, 2003; Ling & Yttri, 2002; Wei & Lo, 2006) and building up social capital (Ling, 2004). Other research has looked at the capacity afforded by mobility for broader forms of social coordination that might work toward undermining power structures, such as moblogging and social movements (Castells, Qiu, & Sey, 2007; Goggin, 2006), or conversely, which work as forms of hyper-individualized social control, as users continuously produce "participative" work (Andrejevic, 2006) or become "encapsulated" or "mobilized" to aid the securitization of the state (de Caeter, 2004; Hay & Packer, 2004; Packer, 2006).

Although mobile digital devices are increasingly well studied, the integration of media capabilities on these devices has not received the same attention. Mobile phones are the most recent communication technologies to integrate media capabilities, termed 3G (or third generation) mobile devices (Wilson, 2006). The question arises regarding what distinguishes these mobile devices from their counterparts, given that mobile phones and personal digital assistants could be considered "media" technologies in their own right; after all, every communication technology undoubtedly mediates communication in some form, whether it is interpersonal, networked, or mass. The specific object of study here are those communication technologies that have newly added on the capacity for media content, or media worlds: they open up an imaginative space of visual and aural stimulation. For the sake of clarity, I will refer to the devices themselves as mobile digital devices or mobile devices, and to the new-media enrichments as media content, media worlds, or media capabilities. This distinction is supported by research showing that users consider the multimedia functions on their mobile phones as "optional/added services" (Matel, Faiola, & Wheatley, 2006)—hence, the technology of the phone is most present in users' minds, with the media capacities viewed as tacked-on extras.

The last finding points toward the way in which users exert a good deal of latitude in the interpretation and uses they make of technologies. Research has indicated that tastes for technology develop unevenly, a process that has been examined by many studies of technological adoption (e.g., Donohew, Palmgreen, & Rayburn, 1987; MacEvoy, 1997; Rogers, 1995; Wei, 2006). Studies have also demonstrated the ways in which technologies need to become "domesticated" before being accepted into the home. They need to be drawn into patterns of everyday life, made usable, become familiar, and so on (e.g., Bakardjieva & Smith, 2001; Lehtonen, 2003; Silverstone, Hirsch, & Morley, 1992). Alternatively, the reasons for a technology's adoption and use might be related to the nature and quality of its "affordances" (e.g., Hartson, 2003; Norman, 1988). Functional affordances are how a technology allows us to do something useful in the world: a mobile phone allows us to communicate with others, and a personal digital assistant allows us to organize our lives. Perceived affordances are what allow us to make use of the technology in the first place: buttons and on-screen icons allow us

to indicate to the mobile phone that we want to make a call. Much current interest in human-interface design concentrates on how programmers and designers should develop technology in such a way as to optimize all these types of affordances. The idea is that the better a technology's capabilities, the more a user will choose to use that technology.

Is the concept of affordance helpful in explaining why people resist media features on their portable devices? That depends on whether people really do use technologies because they work for them. Although this seems to be a rational, even obvious, assumption, it overlooks crucial aspects of human behaviour. People use computer programs they find quite irritating and difficult to use, even though they might state that they find them user friendly when asked. Conversely, people might fail to use convenient digital organizers that would make their lives simpler for them. People are capable of forming strong attachments with their ugly old pagers and of irrationally hating their easy-to-use mobile phones, without really knowing why. What these observations tell us is that affordances do not merely inhere in the technology. They are mutable, depending on the experience they afford the user.

What is a way to capture this relational aspect of affordances? An approach that has been useful in highlighting the relations between people and their technologies is actor-network theory (ANT). ANT stresses that technologies are actors alongside people. A technology's technical characteristics—the way the keys on the phone pad or menus on the screen are laid out, for instance—create scripts that users of the technology follow in order to operate it. A user must punch a certain sequence of buttons and navigate through a defined series of menus to access her missed calls. In doing so, the mobile phone inscribes her into a particular relation with it. In turn, she inscribes the phone in her own routines, delegating it to act as her alarm clock, message service, or pager. ANT also reminds us that these delegations always take place within larger social, cultural, and political networks.

Certainly there is a strong element here of what Harmeet Sawhney (1996) calls liberties of action. There are only so many ways the user is able to respond to the scripts embedded in the coding and interface design of her mobile phone. But these are not the only influences on her use. Although it is well designed, a user might avoid using her phone, often letting it languish uncharged or purposefully misplacing it. Her dislike of mobile phones might be called a question of taste—but it is far from mere personal taste. As Pierre Bourdieu (1983) has demonstrated, our tastes are socially constructed. Objects in the world claim our attentions thanks to the dispositions we accumulate through cultural networks.

When do we enjoy our devices the most? A device pleases us when we have at our disposal pertinent resources to value it. These include knowledge about how it works, appreciation of its aesthetics, and ability to use it. Taste is a matter of having access to these affective resources, which Bourdieu refers to as social and cultural capital. As we interact with our portable technologies, we develop cultural capital: dispositions, discernments, vocabularies, and rituals, such as familiar ways of organizing icons on our screens or displaying multiple windows. Social capital shapes our access to cultural capital by exposing us to networks of people who

pass along capabilities, desires, and assistance. For instance, we are more likely to enjoy our devices when we circulate in groups that include “warm experts” who help us adapt to new technologies (Bakardjeva & Smith, 2001; Lehtonen, 2003).

But as with economic capital, we do not all have access to the same cultural and social capital. We do not all travel in the same circles and develop the same likes and dislikes, even though we are for the most part subject to similar discourses on a national level through mass media. We also do not all have the same network of people to draw on when we have a problem. Tastes for technology develop unevenly, a process that has been examined by many studies of technological adoption (e.g., Donohew et al., 1987; MacEvoy, 1997; Rogers, 1995; Wei, 2006).

Actor-network theory and Bourdieu’s (1983) theory of taste demonstrate that a technology’s affordance is a relationship it has with its users, rather than a static trait. Each explains this relation by pointing to structural and social factors. A full understanding of affordance also needs to recognize, however, that within these social, cultural, and technical scripts, people also experience technologies on an individual level. Perhaps this might explain why a user might hate her mobile phone, even if it is well designed and everyone else she knows uses one religiously. Experiences individuals have with their technologies are described well by phenomenology of technology (Ihde, 1990).

Phenomenology looks at the individual’s relation, through technology, with the world around us. Because we use technologies to accomplish things in the external world, most of the time the intentionality of our relationship with technology is directed toward that world. When we hammer a nail, our intentionality is directed toward accomplishing the task, and this will only shift to the technology itself if we hit our thumb. Similarly, when we yell at our phone as the network drops out or caress our new PDA, we bracket out the world and focus on the technology. Thus the only time we really relate to the technology itself is when we focus on it as another actor, perhaps out of anger or gratitude. In general, though, our relation with technology is utilitarian, and the quality of the experience depends on how well it allows us to manipulate our circumstances.

When it fits, it can feel as though a technology becomes a part of our bodies. For instance, if the hammer fits comfortably in our hand, we hit the nail with a fluid, embodied movement. More complex technologies can also prompt this relation, for instance, the ergonomic shape of a mobile phone. Normally, though, when the technology is more obscure, we need to interpret rather than just embody it. Using desktop icons on a computer takes some practice: we have to interpret the way information has been codified. Finally, there are times when we let our technology just buzz away in the background, such as when we leave our music on unattended. In each case, the technology mediates our relationship with the external world.

These perspectives emphasize the relational quality of how technology works for us. They suggest that affordances are experienced by a user in specific, mutable relationships each time she flips open her PDA to watch a movie or fails to download a game from her mobile phone’s browser. The following two sections present findings regarding users’ choices to use and not to use media capabilities on their mobile devices. In the final section, I discuss and analyze these findings

using the idea of relational affordance developed here. I summarize what they can tell us about the use of media content on mobile devices as well as the underlying reasons and rationalizations for failure to make use of these capabilities. At the heart of these reasons is the returning issue of control.

How people make use of the media capabilities on their devices

The first set of findings explores the uses respondents made of media capabilities on their mobile digital devices. Ethnographic research has revealed that a large part of media use takes place in the background. People use television and radio, in particular, not so much for message transmittal, or even entertainment, but often just as a way to fill the space of silence. Portable media use is also squeezing its way into the background of daily life, as the exploding use of MP3s on portable devices indicates. But as these devices are worn on the body, much like clothing, our relationship to the “technical actors” (Callon, 1986; Latour, 1988) that constitute them is often one of embodiment. Portable devices easily become appendages, contoured to hands, clothing, rituals, and habits, always accessible, ready to hand. The affordances of the technical actors that constitute the device are often geared toward such an end, such as the ergonomic shape of a PDA or the belt attachment on a flip phone. Don Ihde (1990) describes both these relationships in his discussion of the phenomenology of technology. He calls the first of these—when, for example, we let a technology just buzz away in the background, such as when we leave our music on unattended—background relations. He calls the second—when it feels as though a technology becomes a part of our bodies, such as a hammer which fits comfortably in our hand as we hit the nail in a fluid movement—embodiment relations. In each case, the technology mediates our relationship with the world around us, but also colours this relationship in some way, depending on how we relate to it.

Respondents expressed a variety of embodiment relationships with their portable digital devices.

CATE: I like that you have access to a centrepiece, so it’s really good for the thumb. Like, I can go back and forth this way, you know, and choose what I want. [Dials phone] See, this is how easy it is to . . . I’m already opening the Web; I don’t wanna do that.

The technical actors perform their roles so well sometimes that, as Cate finds out, the slide into a media world is almost inevitable. This smooth slipping extends the embodiment relation beyond the technical surface, opening up an internal world that users can inhabit to extend their organizational habits, memories, and social feelers further than their own limits, as Patty describes:

PATTY: I have not uploaded games, but I have uploaded software for an online Bible—very handy—because I like keeping a Bible handy, and the smallest one I’ve got is bigger than the actual PDA unit! So I have the complete New King James version of the Bible in electronic format on this PDA. That’s very handy, and you can do a very fast verse search . . . or word search, for that matter.

Here, Patty’s focus is not directly on the media content, as it would be were she engrossed in *reading* the Bible. Instead, the media content opened up is a

means to an end, an external appendage that extends her capacity to remember biblical verses. Here, the incorporation she experiences with her device enables her to act on the world—*do* something to it—rather than just live in it.

Rather than one of pure background *or* embodiment, the role of media capabilities in these devices tends to hang between the two. The media-enabled device stands in wait, ever-present, “handy.” The “handiness” of portable devices is facilitated not only by their affinity with embodiment relations, moored to our physical hands. They are also “handy” in that they are ever-present, as easily fading into our background routines as nagging us of our continual technologically aided ability to monitor our external environments. Portable devices meld background and embodiment modes, lending their technical agency to open up media worlds at our disposal, creating an always-on environment.

This ever-present handiness, and its eternal beckoning—its ability to inscribe us in a Web search without so much as an effort—is perceived as threatening as well as powerful, as Paul indicates:

PAUL: You can get drawn into thinking about it like an animate object that’s part of you. . . . You know, you identify with it, so in a way, sometimes you wanna, like, pull back from it to be . . . to be more . . . human.

The intimate relation we allow not just the technical actors, but also the media content, in extending our aptitudes is powerful but creates a certain vulnerability. Indeed, media on portable devices appears to be of a profoundly personal nature, more so than attachments to traditional media. One reason could be the proximity to the body. Another possible reason might be the *generative* nature of some of the media use, which leaves traces of the user in ways not relevant to TV or radio—in other words, digital technologies allow for greater customization and even creation of media-enabled content, which seems to prompt an unprecedented level of intimacy.

PAUL: It’s got to do with my world [awkward laugh]. I don’t see it as connecting to anybody else. It’s pretty much . . . my world.

CATE: [Guarded tone] Well, just . . . it’s my thing. Even though I’m only using it for games, it’s . . . my little world. It’s my thing, nobody else’s business.

Media use on mobile devices tends to be of a more personal nature focused on the private and intimate space of a portable microworld, a hybrid media world generated by self and other.

In sum, ever-presence is key to all forms of portable media use. It is a persistent time filler, an always-ready, always-on companion. At the same time, there is a more intimate connection signalled by this proximity to personal space, indicated by the importance of the appendage and of the private world experience, and perhaps also of greater vulnerability.

How people explain why they are *not* making use of media content on their devices

Although respondents discussed a number of ways in which they incorporated media content into their use of mobile digital devices, many also professed rea-

sons for why they were not enamoured with these media capabilities. This section explores two main themes that arose regarding why respondents chose *not* to use media content on their portable devices.

Oversaturation and disutility of media content in everyday life

Many respondents were vocal in expressing their disdain for the technical quality of portable devices. As Carlos exclaims, “Don’t buy a phone for taking pictures; the pictures are *horrid* and . . . what for? Playing music? It will sound *horrible*.” Tom voices a similar sentiment: “I can download them, but I haven’t because I already spend enough of my time playing games and the screens are kinda crappy for it. . . . If I want games, I’ll get some hand-held thing.” In many users’ minds, the added functions do not necessarily equate with added functionality. It would seem then that a common reason justifying apathy or even antipathy toward media use hinges on a user’s perception of how well the device’s technical actors fulfill their role.

BRAD: I honestly don’t. My impression is that it kinda, you know, probably has all the functions that the cellphone has, you know, duplicated. It seems like every thing you pick up these days they *all* have all these functions: . . . calendar, games, . . . calculator, things like that . . . music files and I haven’t even touched that.

Brad describes here the cross-pollenization of similar functions across digital devices. The current trend to move toward 3G phones and similar media-heavy PDAs means that every digital device appears to have roughly similar media capabilities. Paradoxically, this has meant there is even less incentive to extend a portable device into media functionality.

For Tom, the density of the contemporary media environment where digital devices are omnipresent means that he does not have to compromise on the low technical functionality of his phone:

TOM: It has access to the Web, but I don’t pay for it, ’cause why would I sit there with a keypad and type out messages when there’s computers everywhere that I can just use instead?

Cory found his PDA to be useless outside his work life. He could still use it as an MP3 player or to organize his calendar, but he found these functions were already replicated by his computer—and it would not take as long to enter data either. He ended up transferring all of his MP3 files off his PDA and onto his MP3 player:

CORY: I don’t even know what’s on my media card on my Palm Pilot anymore. There might still be songs on it, I don’t know. But, yeah, I mean, just everything now just gets transferred through to my MP3 player.

Cory’s PDA hangs as an “in-between machine,” its utility called into question by overlapping devices.

Other respondents assert the disutility of media capabilities in their lives due to the lowly status they accord to media content in general. Consider the derisive remarks of Andrej, Cory, and Cate directed toward portable media use:

ANDREJ: I wouldn’t play a game on the cellphone, you know? I mean, I think my IQ would suffer enormously [laugh].

CORY: I just find some people use them too much, it's like, are you gonna walk around down the sidewalk with your laptop trying to key in things? But people seem to do it with their Palm Pilots . . .

CATE: My son spent a lot of money on [my PDA], too. Because then, you had to pay a lot of money for these things, you know? [Sheepish laugh] I won't tell him I just use it for games.

Users such as Casey and Tom even go so far as to exert self-discipline in order to control any wayward impulses:

CASEY: I used it just mainly as a communication device. I tried not to use it for actual entertainment.

TOM: I understand that when I'm playing video games, there's more productive things I could be doing. [pause] But at the same time, it's so much fun.

Most respondents recite common prejudices against traditional media items such as television, popular music, and video games (Cohen, 1980; Nuzum, 2001; Springhall 1998). Media-enabled portable devices have thus not benefited from the luck of their more illustrious digital counterpart, the computer, which tends to connote education and productivity (Oppenheimer, 2003).

Master or slave? Portable media use and control issues

The ever-presence-to-hand of portable media is a recurring theme in users' responses, as we saw above. But it does not always cash out as increased media use. The amplified personal nature of media experiences on portable devices also hints at a greater vulnerability. The second theme that surfaced regarding why respondents fail to make use of the media capabilities on their portable devices relates to a need to exert control, not only over the private contents of their portable worlds, but also over the ever-extending reach of media use into their lives.

Some users re-establish boundaries and control by constructing categories of appropriate use of technologies. According to this rationalization, technological actors have an essence, a preinscription (Latour, 1988) that determines their capacity to be usefully delegated by users in everyday life. Media use is seen as either part of that teleology or not. Accordingly, certain devices are deemed to be purely functional: meant for interpersonal use and organizational functions, not entertainment.

CASEY: [Irritated tone] I don't know. It just seems kinda pointless, stupid. A cellphone's a tool for interacting with other people. It makes communicating easier, but you'll see people just interacting with their cellphone! There's people on the bus, they'll pull their cellphone out and they'll play around with it and they won't call anybody, but just, I don't know, play some games.

FRANÇOIS: Pshhh . . . games . . . pshhh . . . way too much stuff for what—it's just a phone, God, you know? On and off, "Hello," "Bye now," you know? To me, that would be the ideal, but that's my use, you know? That's how I see a cellphone. I don't see the cellphone as: "Oh, man, I wish it would have a bigger screen to play a movie or flick my TV

on.” It’s just a cellphone. To me, I just have a picture of a cellphone: the use it’s got, it does what I want, and the bells and whistles—I couldn’t care less, I couldn’t care less.

CARLOS: So I try to buy function-driven. A PDA, what’s it for? Contacts, appointments, synchronize with Mac and PC, that’s it. If it gives me something else, nice, but I won’t buy a PDA for playing music. No, buy an iPod; that’s it. Same for my phone—I want a phone just to talk; that’s it. No pictures, no music, no games, no. Talk.

Casey, François, and Carlos construct a taxonomy of devices, where mobile phones and PDAs are firmly located in a separate category from entertainment and media devices. To cross this boundary is misguided.

This view of the appropriate use of technological actors demonstrates a clash between a device’s media world and its technical agency. In this way, it is similar to complaints about media quality, which blamed low use on an incompatibility between promised media world experiences and the delivery of technical actors. The difference here is that the clash is not a technical one but a teleological one. For these users, devices have an essence that transcends their functionality. Even if the technical actors prove competent at their roles in delivering a media world, the problem is that this is not in their essence. The argument draws on essentialism to head off criticisms that may come about if the technical agency of these devices does indeed improve, as we would expect from technological trends.

For other users, something akin to a Master-Slave dialectic plays out as the user exerts control through the choice of whether or not to use media functions. The choice not to use *all* the functions available on a device—by ignoring, for instance, the games or the Internet capability—confirms for the user his control over the time and energy the device otherwise demands.

MARK: I haven’t adapted to it in the sense that it’s got all these things that perhaps I maybe could make use of that I don’t really need. So, perhaps it’s adapted to me because I haven’t utilized those different things that I could be using with it: games and Internet and things like that.

Alternately, the choice to make use of these media functions is rationalized as being under the user’s control.

CATE: It’s just me playing games and having fun, right? But I’m in control of it. It doesn’t do anything unless I told it to do it.

Mark puts his technology back in its place by purposefully *not* using media world functions. Cate *only* uses media world functions. In either case, media use sets the boundaries for control.

Mobile media: Ever-presence and resistance

For the most part, respondents do not immerse themselves in the media on their mobile devices as they might in another context. Instead, they engage with media functions not in and for themselves, but to accomplish something in the world around them, such as to recall a significant quote. Media are transformed on mobile devices into tools, valued because they are present-to-hand. Media capa-

bilities are thus used as a way to extend a user's capabilities in the external world. In particular, devices are useful for their handy ever-presence and ability to monitor surroundings. Even when respondents make use of media capabilities, they tend to dip in and out. Media-enabled devices are an ever-present appendage within users' lives.

Nevertheless, although ever-presence may set common parameters to portable media use, it certainly does not indicate that all media are ever-present to all users. Many people resist the lure of new media functions. The first category of reasons given by respondents relates to the apparent quality of media content on portable devices. Complaints about quality are familiar to traditional media use. Part of media enjoyment hinges on the competence of technical actors, common to other technologies. Does the screen have adequate resolution? Do the speakers provide enough bass? At first glance it seems that these responses have a simple explanation: respondents are resisting the functional affordances of the technical agents on their mobile devices and the inability of these affordances to make the grade.

But another level of resistance is apparent in the respondents' comments. These devices mobilize technical actors for the delivery of a media "world," an imaginative space opened up for users by such content. A user experiences a *dual* phenomenological relation with both sets of technological actors: one with a device's technical actors (as for other technologies) and one with its media world (unique to media technologies). This means that media functionality also depends on the compatibility between these technical actors and the media world to which they provide access. A successful fit demands that the technical actors and media worlds do not undermine each other. This seems to be the central issue in these respondents' comments. Media is both useful in the external world and offers a world within itself. Portable devices are asked to cross this line repeatedly and explicitly—and this is why so many problems potentially arise. The technical characteristics of the PDA or phone not only have to be adequate for the job, but they must fit the media world experience *expected by the user*. It is important to signal here that the fit between technical agents and media worlds is not an objective or absolute one, but exists as a relationship between users' expectations of each relation—to the technological agency (the device in its physicality) and to the media world (the content they engage with). Indeed, users' responses are never merely statements of a problem with the technical agency of the devices. It is always in relation to *an ideal media world* that these complaints are made. It is the purity of the media world as imagined by users that acts as the ultimate justification for why users do not engage with the functions of their portable devices. The media world is held up to an ideal of visceral fidelity and social utility that proves hard for portable devices to meet.

The disutility of media capabilities, as seen by respondents, was also related to the lack of status granted to media content in general. Deleuze and Guattari (1987) coin the phrase *territorializing machines* for the processes that work to forge strong attachments. Media thus territorialize us, creating patterns of intensity and affect. Similarly, Bourdieu (1983) argues that an object pleases us when we have at our disposal pertinent resources to value it. These resources include

knowledge about how it works, appreciation of its aesthetics, and ability to use it. Dispositions accorded to media forms are varied, depending on their associated connotations. Television and video games have so far claimed the brunt of social derision, with couch potatoes on one hand and overstimulated addicts on the other. Whereas digital devices might territorialize respondents' attachments due to their ever-presence-to-hand, portability, and always-on capacity, they do not remain untainted by their association with their delivery of media content. Although the technical actors of a portable device are clearly digital in nature—a characteristic associated with high-status performance in the context of computers—this characteristic appears not to count for much when it comes to mobile phones and PDAs. In this case, it is the devices' association with entertainment that appears most salient to users. Once again, the device's technical agency and media content affect and undermine each other. Further, these findings demonstrate that the network of media technology use extends beyond merely the device and its media content to the swarms of related technologies and their relevant cultural connotations, in a process similar to remediation (see Bolter & Grusin, 1999).

A second theme underlying respondents' lack of interest in media capabilities is driven by an undercurrent of fear over losing control of technology. John MacGregor Wise (1997) has noted that the battle for control between humans and technology is a central modern concern. A technological determinist view obviously encourages a worry about our mastery of technology, as those adopting this view accept that technologies have important and inescapable effects on psychology and social structure. But even a social constructionist view, Wise notes, betrays a similar preoccupation with control over technology. Here, people are understood to collectively shape and modify technology through social processes of adaptation. Either way the main question asked of technology comes down to whether it has control over us or we have control over it. It is very hard to sidestep either of these worries when talking about technology, since both discourses are so pervasive. In respondents' comments, we see the resonance of these discourses manifest as a preoccupation with the ability to control technology. Respondents attribute power to technology and try to re-establish control by making choices about the use of their devices. In particular, media functions seem trivial and can thus be swept aside without too much fuss. In making these decisions, respondents take some small step toward the underlying goal of mastering their technologies.

Nevertheless, a person's phone or PDA is obviously not the source of power. As actor-network theory argues, technologies, just like humans, are actors within larger networks (e.g., Callon, 1986; Latour, 1988). The relations among these actors channel and accumulate power, certainly. But it is the broader networks that are the real source of power. These are the networks that incorporate organizational decisions about the development of particular technologies at the expense of others, the design decisions about the form these technologies will take, and institutional processes that increasingly implement these technologies in workplaces, markets, and public life. All of these networked processes have far-reaching social consequences. Respondents' anxieties here ultimately boil down

to concerns over modern networks—networks in which we are demanded to be ever-present, always-ready. Technologies function as the sign of this always-on society. Turning them off is a simple way of asserting control. But it does nothing to deal with the core issue. A related anxiety underlying respondents' comments concerns a power imbalance over the constitution and makeup of this network. Although technologies are important actors with which we relate on a daily basis, we have very little control over the function and design of these complex machines (see Feenberg, 1999). Again, the superficial choice to use some functions over others does not solve the underlying issue about the design and purpose of the technologies we use. But for respondents, it does seem to at least symbolically reassert some control.

Relational affordances of mobile devices

Media on mobile devices is enjoyed most by users when it is available and ever-present. But media use is certainly not present to all users. Many users construct elaborate categories and distinctions to justify the parcelling off of media from other ever-present functions available on their devices. We can explain this apparent contradiction if we take into consideration two factors. First, media use is always characterized by the duality of its phenomenological relations: each experience is mediated at the same time by technical agents *and* by its media world. Indeed, it is the *tension* between the two types of relations that produces the patterns of use characteristic of portable media devices. Second, not only are users engaging with both of these relations at once, but each is also embedded in a larger network. This is what ANT teaches us: technologies are not independent, but are embedded in *long networks*, stretching all the way from Ethernet cables and global satellites to the factory floor of silicon manufacturing plants. Humans could be said to be embedded in the same long networks: social, economic, and cultural linkages, which as we saw above leave traces in the forms of taste and desire.

I have argued that affordances are relational. But relational with what? The first assumption was that rather than inhering in technology, affordances create relations between users and technology. When it comes to media, though, two layers of technology bump up against each other. Thus we must also consider the relations between technical agents and the delivery of a media world. This is evident in the case of portable devices, which are asked to cross this line explicitly. Even when technical agents are to blame—and certainly, PDAs and mobile phones have poor-quality screens—the blame is recast in relation to the media world. Either the device cannot sustain an ideal of media world fidelity, or the tarnished reputation of media in contemporary culture rubs off on the relational affordances set up among the actors.

The last point illustrates that the device-user relation also has a position within a broader network. This network encompasses related technologies and their connotations. It involves the territorializing machines of taste—circles of friends and habits of use. It includes the distributing machines of power—non-participatory chains of design and always-on systems of work. Users of portable devices display a strong tendency of disparaging the media functions on their devices, whether or not they use them. Their portable media practices function as leverage to exert symbolic control over an increasingly technological society.

Perhaps, then, we should embrace resistance to media use on portable devices. Sadly, the same tendency does not seem to translate to suspicion over pressing digital trends such as digital rights management or increasing surveillance. But is this our only strategy—to leave unexplored the multiplying functions of our devices? A small luddite protest seems inadequate in the face of user concern.

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