Power over Mediated Agency and its Ethical Implications for Interaction Design

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Abstract. There is little discussion about power within Interaction Design field. To call attention to this issue, we present a model for discussing conflicts that arises at the human-artifact interface. We argue that artifacts support human behavior by providing adaptations, but these adaptations can expand or restrict human actions. Human action cannot be fully controlled by artifact adaptation because humans have power over their agency: they can readapt the artifact or not use it at all. Many times, interaction designers try to impose structures upon human action by shaping coercive environments where people are punished if they do things the "wrong way" and by hiding or not providing options for changing artifact adaptations. Interaction design mediates human agency and power, but if it does not provide choices for action, there is no room for ethics: people act based on conditions, not on considerations of what should be done.

Introduction

Interaction Design is concerned with the design of interactive artifacts, things that play a more active role on mediated human action than others. These artifacts have some embedded characteristics that shape the mediation, encouraging certain aspects of human behavior and discouraging others. This relation of human agency and mediation characteristics should lead to seriously ethical considerations, because, as Robertson (2005) notes, "when people are required to act according to the prescribed behavior of particular representations of human activity then there are questions to ask whether some of these representations and their associated options for action are better or worse than others". Unfortunately, there is little associated literature about the topic and we hardly see it mentioned in the practice. We believe that ethics don't get the deserved attention due to implications that don't fit with currently dominant discourses in the field of Interaction Design.

When dealing with technology, there are two dominant discourses that permeate research and practice: determinism and non-determinism. For the former discourse, ethics is only an issue for the designers of technology, because they determine what users should do; for the latter, ethics is only an issue for users, because they ultimately define what to do with technology. Both visions lead to an uncritical practice, because there is no possibility of conflict in these equations. Criticism arises from conflicts and is essential for changing current statements. Also, criticism is a precondition for ethics, since if there is no questioning about human action, there is no reason for ethics.

We're looking for a third discourse through the concept of *mediation*, drawing from the work of Kaptelinin & Nardi (2006) and Verbeek (2005). Mediations are social processes for negotiation of meaning, conflicts of power and hybridism that occur through technology, media, space, and actually even people. Those processes are not deterministic: neither people are subject to the properties of the mediator nor are they free from constraints. In the process, people and mediators mutually transform each other. We are particularly interested in the co-shaping of human agency and interactive artifacts. Human agency cannot be fully understood without the concept of power, indeed, because it constrains human agency. Power, as Foucault notes, comes from multiple sources — individuals, institutions, communities, and there are constant conflicts between these powers. We consider agency power relations an important ethical concern for Interaction Design.

Mediated agency

Human agency is defined by Kaptelinin & Nardi (2006) as the ability to produce an effect according to an intention. Things have agency too, but they don't have intentions. An erupting volcano can affect other entities, but there is no will involved in that. According to their approach, agency is not an *a priori* capacity of living and non-living entities, but a property that unfolds within the enactment of a specific activity. Thus, human agency cannot be understood as a feature of the mind, but as all real possibilities of human behavior within an activity. These possibilities are altered by mediation of an artifact: people can act in many ways that without the artifact would not be possible. That's what we call *mediated agency*.

One type of mediated agency that is typical of humans is the capacity of shaping artifacts. People use things to shape other things, like grinding stones to make a hammer or agglutinating words to make new words. They tailor artifacts to adapt them to their behavior, giving agency to artifacts to act upon people. McLuhan proposes in *Understanding Media* that "we shape our tools, and thereafter our tools shape us" to sustain that social changes came from technological revolutions. Vygotski, precursor of the Activity Theory, would agree with the phrase, but not with the reasoning. For him, the mutual shaping of human beings and artifacts is dialectical in nature, meaning that changes come from contradictions and not by determinations. The adaptations embedded into artifacts can be ignored, resignified or changed if there are contradictions with human behavior or intentions. People, unlike artifacts, have power over agency but, like artifacts, are subject to the power of others.

Conflict at the Interface

Michel Foucault explains that power in our society is not centralized in some elite class or some figurehead. Instead, everybody exerts some power in social relations, i.e. power relations. In *The Subject and Power*, Foucault defines *power as agency over other's agency* or, in other words, the ability to influence human behavior. As we saw, artifacts can be adapted to (and shape) human behavior, but in doing so, they mediate the power of those who shaped their agency.

Power spreads smoothly if there is no *breakdown* (Winograd & Fores, 1987), a type of conflict characterized by inadequacy of adaptations for current human behavior. At that moment, people are challenged, having to overcome the unexpected outcome and *work around* it. Spinuzzi (2003) criticizes designers for treating people as victims of breakdowns waiting powerlessly for their heroes to save them. He shows ethnographic data that suggest people are capable of overcoming inadequacy, even if the computer system doesn't allow readaptations. They put pen marks on maps, create reference tables, glue stickers on monitors, etc. All those solutions live on the *genre ecology* that supports work, eventually getting incorporated by new versions of the computer system.

To protect users from unexpected results, interaction designers try to impose structures on human action by shaping coercive environments where people are punished if they do things wrong (by an annoying beep, for example) and by hiding or not providing options for changing artifact adaptations. The discourse legitimates alienation from the artifact functioning by limiting user's interest to being merely consumers of the commodity things provide (Verbeek, 2005). When artifacts break or function in an unexpected way, there is nothing the user can do: the artifact is a black box to non-technicians.

We think this happens because participation of non-technicians (including designers) in the process of production of interactive artifacts is still rather peripheral. Designers were firstly integrated into the production of these products primarily for crafting attractive boxes (Moggridge, 2007, p.14). Later, they acquired the role of semioticians, translating artifacts' input requirements and output messages in plain language for users (de Souza, 2005). Access to participation in the practices that shape artifacts' functioning has been barred by strict division of labor and conservation of power. Designers cannot be programmers and users cannot be designers because, if they could do that, the current production process would break up. That's why the interface between people and artifact functioning has remained opaque.

Lave & Wenger (1991) argue that transparency regarding the inner working of an artifact is essential to become a full participant in a community of practice, because artifacts connect participants to the cultural and historic dimensions of the practice. This transparency (or the lack of it) constitutes, for them, the cultural organization of access to power. Alienated from full participation, people are subject to the power of other social entities; they can shape artifacts' adaptations that mediate the power of others. But, at the time of interaction, people can, as Spinuzzi notes, redefine their agency. The

interface between humans and artifacts is a social arena where power coming from multiple sources conflicts and produces negotiated effects.

Power over agency

Power is, as we saw, power over agencies of the individual himself, other individuals, institutions and artifacts. As artifact agency can be used to mediate all these other agencies, it's a crucial matter to discuss power over artifact agency. The diagram in figure 1 outlines relations discussed up to now.

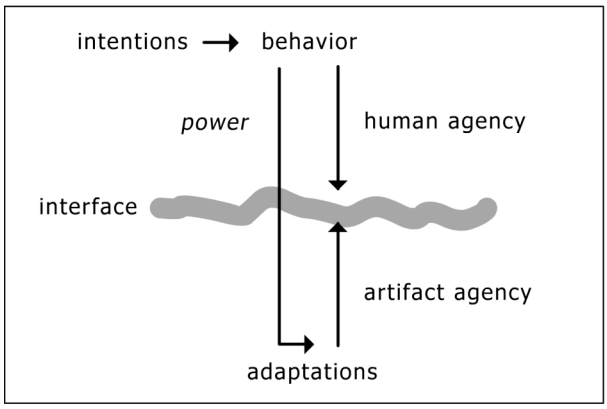

Figure 1 – A model for human-artifact interaction and its inherent conflicts

For better understanding, we will briefly describe some conflicts we found at the interface between Brazilian people and Orkut, a social-network maintained by Google. We're basing our assumptions on an ongoing qualitative research we're conducting to discuss the role Orkut plays in Brazilians' lives (see van Amstel, 2007 for partial results).

People use Orkut mainly to maintain contact with family members, friends and acquaintances. Each user of the system has a public profile that includes a scrapbook where everyone, accepted friends or not, can post and read scraps. The scrapbook is public as well as personal, because messages left are directed not to the public, but to the person who owns the profile. Social protocols arose from scrapbook use: each message should be replied exclusively onto the sender's scrapbook, for example. That was a daunting task: people had to click on the sender's photo to get their profile and click again to get their scrapbook, where they could reply the message. Ajay Martin, a Computer Science student at Stanford, created an extension to Firefox browser called Orkut Scrap Helper that altered the scrapbook interface by putting a text form to reply scraps directly on the receiver's scrapbook. His intention was to overcome the limitation for fast scrapping, probably, for smoother conversations. 10 days after he published his extension, Orkut officially added this same functionality.

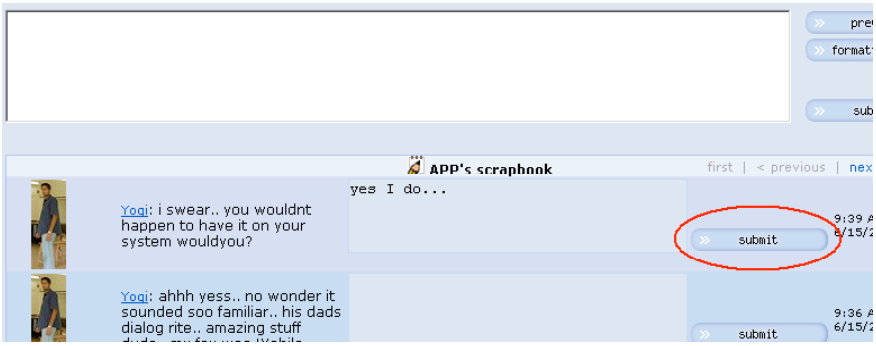

Figure 2 - Firefox extension Orkut Scrap Helper in action

Ajay Martin was not a typical user. He had knowledge about scripting languages Firefox employs to their extension. Firefox is not a typical software too, for it supports relatively easy readaptations through extensibility. People at the time who didn't use Firefox and didn't have the knowledge to create solutions like these, had no choice. If they wanted to talk to someone, they had to go through the longer sequence. Ajay had power to change artifact agency and thus, change his mediated agency,

enabling him to engage in more conversations in fewer time. Other people, who hadn't this power, were restricted by the power of the creators of the system, that didn't provide options for readaptation like Firefox. After creators realized that this was burdening users, they added the functionality, maintaining the old sequence if users need it.

Empowering people is at the heart of user-centered design discourses, but if they treat people as mere users, that becomes only a rhetorical phrase. Jensen Harris, lead interaction designer from Microsoft, put on his blog that Office 2007 project goal was "to empower people to do great work in Office as easily as possible" (Harris, 2006). They had chosen to minimize customization of Office 2007 interface because only 2% of people used this feature intentionally in the previous version and many people were observed using this feature accidentally without knowing how to come back. In their paternalistic discourse, they divided people into two categories: "normal users", that wouldn't bother customizing, and "power users", that would need more easy customization features than previous version. They disabled direct-manipulation customization of the interface for "protecting" normal users against misuse and for power users they provided XML files to change interface elements. None of them could, nevertheless, enable the old menu bar of previous version that was replaced by the "ribbon", a combination of tabs and toolbar that provide the tools for editing. Many people were complaining that the transition to the new interface was cumbersome, so a Chinese company called Addintools created an extension for Office 2007 that brings back the old menu if users want it.

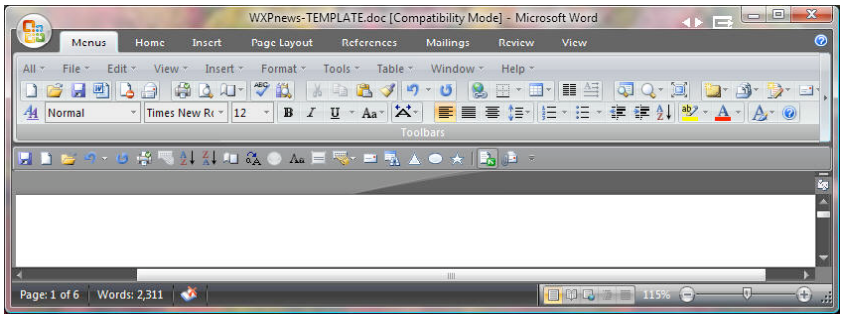

Figure 3 – Microsoft Office 2007 interface with the "Menus" tab provided by Addintools extension

Office 2007 and Orkut don't provide many options for adapting their software. Power to change their agency is concentrated inside the corporation that holds its ownership. They cannot open too much, or else their production process, business model and profitability will change. When they say they want to empower their users, they're not talking about real power. *Real power is power over self-agency* and, if it's mediated, power over mediator's agency. People who claim this power, cannot be treated as mere users: they are co-creators of the artifacts they appropriate.

Ethical implications for Interaction Design

If power is over the possibilities of actions, the question for the individual is "what can I do?" Given the possibilities, there comes a second question: "what should I do?" According to Verbeek (2005, p.212), that's the fundamental question of the ethics of behavior, that has two varieties according to the criteria for moral evaluation. Consequentialist ethics consider an action moral when its positive consequences outweigh its negative ones. Deontological ethics focuses on the moral value of the act itself and the intentions behind it, regardless of the consequences. Artifacts lack intentions and capacity of moral judgement over their agency consequences, but "the mediating role of things can be judged in moral terms itself, whether this role has been explicitly delegated [by humans] to things or not" (p. 216) because it shapes human actions and, in turn, their moral considerations over those actions. Verbeek states that "when designers do not pay attention to this mediating role of things, ethical reflections in the design process remains incomplete" (p. 216).

Industrial Design is the focus of Verbeek's "material aesthethics" because the field is already intertwined with everyday social life and there was little attention to the mediation role of the artifacts it produces. Interaction Design has a different *ethos*. Since it's beginning, the area's primary object was mediated interaction between humans. In his introduction to Interaction Design, Dan Saffer (2006) defines the scope of Interaction Design as "the art of facilitating interactions between humans through

products and service" (p.222) and in his concluding remarks, states that "any serious examination of interaction design has to include a discussion of ethics" (p.4). His criteria for ethics is presented as that:

> Interaction designers try to promote certain kinds of interactions between people. Thus, the fundamental ethical baseline for interaction designers should be *the quality of those interactions on both sides of the equation*: the person initiating the interaction (the e-mail sender) and the person receiving it (the e-mail receiver). The content of the communication aside (e-mail spam, say), the quality of those interactions is strongly determined by the decisions the designer makes while designing the product or service. In this context, even the placement of buttons on an interface is an ethical act: Does the designer have respect and compassion for the users? Does this product or service afford the users human dignity? In short, is the design *good* — good for the users, good for those indirectly affected, good for the culture, good for the environment? (Saffer, 2006, p.223, original emphasis)

Saffer gives emphasis to the designer's responsibility for ethical choices because in the design process he outlines, users don't participate in design decisions. He recognizes that "users will always find ways to use products and services for purposes they weren't designed for" (p.224), but the designer could be responsible for "potential negative consequences of their designs on those who aren't users or who are forced users", like the people who were arrested in a World War II concentration camp and had been tattooed with a number generated by a system provided by IBM. Designers of those systems could, as German lower echelon militarists did, justify their action in terms of unavoidable accomplishment of superior orders. Even though they considered immoral what they were asked to do, they had little or no choice; they not only had to comply with the Nazi ethics, but also internalize it as their own ethics or else they would be punished or undergo even worse sanctions. Nazi leaders were acting over their agency, that's why the leaders were condemned at Nuremberg and not so the lower echelon. That could only be characterized as power in Foucaultian terms, if the subordinate had freedom to choose what to do and yet did what leaders wanted:

> When one defines the exercise of power as a mode of action upon the actions of others (...) one includes an important element: freedom. Power (relations) are exercised only over (through/with) free subjects, and only insofar as they are free. By (freedom) we mean individuals (subjects in subject- positions) (...) who are faced with a field of possibilities in which several ways of behaving, several reactions and diverse comportments, may be realized. (Foucault, 1982, p. 790)

We're not discussing if designers or soldiers could be responsible nor if they had freedom or not; instead, we're interested in the relationship between ethics, power, and freedom. When Foucault says that freedom is a precondition for power, he is recognizing the capacity of the subject to resist the normalizing effects of disciplinary power. Thus, it becomes understandable why Foucault considers ethics in his *History of Sexuality* as "the relationship you have to yourself when you act." (p.131). Toni Robertson, reflecting upon Foucault's ideas on Interaction Design, speculates that:

> This could suggest the possibility of a range of strategies, beyond the development of human-centered design principles, that can range from education to resistance and that can be used by those outside of technology environment to continually problematise and undermine the naturalness, necessity and inevitability of the specific kinds of our behavior that the use of communication technologies ask of us. (Robertson, 2005)

The work of Anthony Dunne and Fiona Raby (2001) must be mentioned in this regard. The Placebo Project (2000) is a collection of electronic objects that explore mental well-being in relation to domestic electromagnetic fields. They gave some prototypes of conceptual products for self-selected people to bring home and live with them. They were interested in the narratives people created to explain these electronic artifacts. One of them was the GPS Table, a table that showed it's exact location in a display. When it's indoors, it often cannot communicate with the satellite, so the display shows "lost". The table asks people to take it to the garden and let it communicate to fulfill itself. People reacted to the table very differently: some people treated them as a sensible work of art, some sort of electronic pet, or a reminder of satellite presence. People reported taking the table from place to place in and out of their home to see whether it could communicate with satellites at that particular moment.

Figure 4 - Placebo Project, GPS Table - photo by Jason Evans

Dunne (2005) observes that "while electronic objects are being used, their use is constrained by the simple generalized model of a user these objects are designed around: the more time we spend using them, the more time we spend as a caricature" (p.21-22). He gives the example of camcorders that have built-in features for generic usage, like the warning light that prevents you from taking a different photo. He justifies his critical approach, for it might increase critical awareness of technology usage: "by poeticizing the distance between people and electronic objects, sensitive skepticism might be encouraged, rather than unthinking assimilation of the values and conceptual model embedded in electronic objects" (p.22).

Through the work of Dunne and Raby we see that Interaction Design should be more critically debated, for it plays a crucial role in shaping ethical considerations people make about technology. Verbeek (2005) agrees with Achterhuis that artifacts should be subject to public discussion of their ethical implications for society. Participatory Design (Schuler & Namioka, 1993) is a practical approach for enabling people to engage in discussions like these, but inside an actual process of shaping an artifact. Activity Theory (Kaptelinin & Nardi, 2006) offers a complete framework for understanding the dynamics of human activity and its inevitable contradictions. Foucault (1982) provides a refreshing way for considering power relations as more complex than dominator-dominated equations. And finally, the free software community provides us examples that make us consider these concerns as more than divagations, but as some of the underlying concepts of a real production (and productive) process (Lakhani & von Hipppel, 2000).

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References

de Souza. C. (2005) *The Semiotic Engineering of Human Computer Interaction*. Mit Press;

Dunne, A. (2001) Raby, F. *Design Noir: The Secret Life of Electronic Objects*. Birkhäuser;

Dunne, A. (2005) *Hertzian tales: Electronic products, aesthetic experience and critical design*. MIT Press;

Foucault, M. (1975) *The History of Sexuality*. Volume One: An Introduction. Penguin Books;

Foucault, M. (1982) *The subject and power*. Critical Inquiry, Vol. 8, No. 4;

Harris, J. (2006) Let's Talk About Customization in *Jensen Harris: An Office User Interface Blog*. MSDN Blogs. http://blogs.msdn.com/jensenh/archive/2006/06/27/648269.aspx

Kaptelinin, V. Nardi, B. (2006) *Acting with technology: Activity Theory and Interaction Design*. MIT Press;

Lakhani K., Von Hippel E. (2000), *How Open Source software works: 'free' user-to-user assistance*, MIT Sloan School of Management WP #4117;

Lave, J. Wenger, E. (1991) *Situated Learning: Legitimate Peripheral Participation*. Cambridge University Press;

Moggridge, Bill. (2007) *Designing Interactions*, Mit Press;

Robertson, T. (2005) Ethical issues in interaction design in *Ethics and Information Technology*. Vol 7;

Saffer, D. (2006) *Designing for Interaction: Creating Smart Applications and Clever Devices*, Peachpit Press;

Schuler, D., & Namioka, A. E. (1993). *Participatory Design: Principles and Practices*. Lawrence Erlbaum & Associates;

Spinuzzi, Clay. (2003) *Tracing Genres Through Organizations: a sociocultural approach to information design*. Mit Press;

van Amstel. F. (2007) *O Orkut mudou minha vida! Incorporando resultados de pesquisa social no design de interação*. http://tinyurl.com/2qcch5

Verbeek, P. (2005) *What Things Do: Philosophical Reflections on Technology, Agency and Design*. Penn State Press;

Winograd, T. Flores, F. (1987) *Understanding Computers and Cognition: A New Foundation for Design*, Addison-Wesley;