HCI as Heterodoxy: the Queering of Interaction Design

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Abstract
I present a thought experiment into socially-responsible technology development through a process of likening the rise of HCI as a field and a practice to the progress of feminism in the 20th century. This framing allows me to explore HCI, first, as part of a duality, next, as the Other, and, more recently, as damaged by oppositional relations that have emerged through attempts to define its value and scope. I argue that, if computers 'disappear' into a ubicomp world as predicted, oppositional positioning becomes increasingly inappropriate and that a 'queering' of interaction design needs to take place. In the process, I discuss what a critical practice based in experience would involve.

Introduction
This paper uses gender theory to investigate the design of digital technology. Much can - and should - be said about gender and who does what in interacting with computers. It is fair to raise the question of whether an industry of men can design for women as computers become integral to our domestic, personal and social lives as well as our work. But my intention here is to leave evaluating gender inconsistencies of numbers and characteristics to others (such as Trauth 2002, who explodes essentialist beliefs about why women do not work in IT) and take the discussion of designing

interactive systems to a conceptual level, while acknowledging that these inconsistencies form the backdrop against which I comment. I wish to use this space to question the positioning of HCI, which as a potentially powerful discipline engaged in the shaping of society and the forming of identities, can challenge gender - and other - inconsistencies, but only by stepping up to the challenge of critical thinking.

Situating HCI

Alan Newell once said: 'psychologists want to understand the world; computer scientists want to change it' (pers comm). Human-Computer Interaction, which could be articulated as the *applied study of the impact of computing on people and social structures,* has a history of attempting to bring together these visions in the research and design of interfaces and interaction processes.[1] It makes day-to-day interventions, turning ideas and code into applications. But the discipline as a whole, with roots in improving military success and workplace productivity, is badly positioned to see itself in radical terms, despite its interventionist nature.[2]

Nevertheless, the activity of interpreting digital technologies for use is highly charged with political possibilities. To draw examples from other areas of applied science: it might be the difference between nuclear fission and the nuclear bomb; it might be choosing between showing pale skins and darker skins effectively in designing film and photographic techniques (Dyer 1997). As people devise the means to provide connectivity anyplace, anytime, anywhere with any thing (ITU 2005), the potential to shape society moves to a new level. It does so in two respects. First, digital tools are now mediating many of our relationships as well as providing the means to earn our living, organise our shopping and banking, etc. They are no longer confined to working and learning, but prevalent through many of the more intimate activities with which we define ourselves. Second, structures that are socially maintained at present can be hard-wired into (semi) intelligent, autonomous digital systems. Here, possible examples include health monitoring, care of the elderly, voting, delivering school curricula, etc.

Trends in like this affect the type of research that is funded, whether by industry or academia. A discipline that is dependent on these sources of income for its continued freedom to practice - that is, in some ways, validated by its relation to successful R&D - will produce a research program that is risk averse and technically orientated. But Bauman warns of a situation where: 'technology does not serve the solution of problems; it is, rather, the accessibility of a given technology that redefines successive parts of human reality as problems clamouring for resolution' (Bauman 1990: 220). This technocentric agenda leads to an extraordinary relationship between people and their tools; one that becomes harder to detect the more successful it is and which is likely to enshrine itself ever more deeply as a norm if not challenged. How does HCI respond to this predicament?

Feminism / Gender / Queer Studies

In the mid 20th century, Simone de Beauvoir presented the *Second Sex* and woman as the Other: 'She is

[1] HCI and interaction design are treated together, because of the similar methods and commitments of their adherents.

[2] With notable exceptions, such as Sengers et al (2005), Blevis (2007) and Flanagan and Nissenbaum (2007).

defined and differentiated with reference to man and not he with reference to her; she is the incidental, the inessential as opposed to the essential. He is the Subject, he is the Absolute – she is the Other.' (de Beauvoir 1972/1949, quoting Julien Benda). Unlike many theorists of social relations at the time, de Beauvoir doesn't attempt to investigate the 'true' nature of women and specifically resists attributing an essential female nature, seeing identity and position in society defined in relation to men: 'No group ever sets itself up as the One without at once setting up the Other over against itself' (de Beauvoir 1972/1949). And 'the reason why otherness in this case seems to be an absolute is in part that it lacks the contingent or incidental nature of historical facts. A condition brought about at a certain time can be abolished at some other time.... it might seem that natural condition is beyond the possibility of change. In truth, however, the nature of things is no more immutably given, once for all, than is historical reality.' (1972/1949).

In presenting women as the Other, she tapped into and furthered a long history of feminist thought that took its position in opposition to the current treatment of women and critiqued society for its injustices to groups that were marginalised. There followed many years of political debate (which I shall jump over here) about whether women had essential characteristics or not and therefore what equality would look like. One branch that emerged as part of the newly formed field of *Women and Gender Studies* questioned how identity is formed, as well as what it might be. A group of theorists moved away from considering gender as foundational and began to explore women's lived body experience. Young (2005) demonstrates how this more phenomenoligical approach both radicalised women's studies and withdrew it from its former critical stance.

In the early 90s, Judith Butler's position on identity as something inscribed by others on the body in society's constant rehearsal of behaviours – or *performativity* (1990) – began to find favour as both expressive and critical. Influenced by Foucault's work on sexuality and identity, it developed into a body of work known as Queer Theory. To quote Mimi Nguyen (http://www.theory.org.uk/ctr-que4.htm): 'The notion of performativity makes all the difference. In suggesting that there is no "essence" to the self, only acts whose repetition constitute an identity to be duly attached, queer theory's given me the tools to examine the violence of … kinds of normativity that concern me. For example: those that define both nations and diasporas as given communities tied by the concepts of "blood" and "kinship;" and how patriotisms and claims to citizenship (to any nation, queer, diasporic or otherwise backed by state apparatus) are always repetitive performative acts that, as such, consolidate the logic (and law) of nationalism.' Here we can observe that, while queering began as a way of reconsidering gender and choice of sexual partners (and even the construction of 'sexual orientation' itself – see Ahmed 2006), Nguyen is using it to talk about identity in much broader terms, such as how she sees her relation to nationhood.

In general, to 'queer' something, taking the Greek root of the word, is to treat it obliquely, to cross it, to go in an adverse or opposite direction. In other words, 'queering' is problematizing apparently structural and foundational relationships with critical intent, and, within this, clowning is as legitimate a way of

problematizing as more solemn means of turning the world upside down. Star uses the analogy/method of queering in a talk in 1997 (Ess 1997) to consider how infrastructure might be regarded more radically. My goal here is to use this analogy/method for queering HCI and what we might come to understand as the interaction design of the future. But, further, I will use other moments in the history of feminism to argue that queering is a particularly necessary and apt perspective to apply to this domain.

Reconsidering HCI

It is impossible to present more than a rough image of the arguments in what is supposed to be a position paper. The first relation I wish to roughly sketch is that of technology to being human. Here I draw on Bernard Stiegler (1998), who argues that it is impossible to separate technics ('the organisation of inorganic matter') from the evolutionary development of the human being, since it was/is a process of externalisation - or the 'pursuit of life by means other than life' made possible through language, technique, and culture - that allows us to capture and share our existence. In other words, we need no justification for the act of inventing – it's what we do to *be* human. Stiegler is not alone; Pitt gives an account of technology as *humanity at work* (2000). If this is the case, we can see Technology as the norm, as the essential productive behaviour of being human[3], and HCI as the Other, that shapes it to fit (other) people in the world, since Technology always comes to us with a context: inventors, values, social systems, etc, but not necessarily an explicit use.

We can play with this idea further, using it as a lens for the development of interest in applications for digital technology. We can watch the domain grow from the study of *Man Machine Interfaces*, in which there is already a duality being established,[4] to the discipline of HCI, emerging as the Spare Rib of computing courses: an elective module that carries connotations of softness and secondariness to the main pursuit of building architectures and hammering out code.

The discipline, in turn, has resisted this marginalisation. The rhetoric of much user-centred design and usability exemplifies the occasionally militant, oppositional culture of interaction design, where 'advocates' and 'zealots' are sought as part of job descriptions, where an iterative design process is repeatedly juxtaposed with the waterfall methods used in the IT industry and where designers and technologists are criticised for paying too little attention to the user. HCI is 'bolted on', to the detriment of the conceptual work conducted (eg http://www.nma.co.uk/opinion/letters-usability-still-tends-to-be-a-design-afterthought/27932.article). However, this militancy in defending the activities of the practitioners has not led to a radicalisation of a more general kind. Energy has largely been turned on establishing credibility to help in the making of tools that work well, rather than questioning their form.

[3] I am not oblivious to the role reversal implied in seeing Technology rather than Motherhood as the 'essential productive behaviour' of being human. Motherhood is shared with animals, though, in ways that Technology is not.

[4] The man-machine duality is not the final opposition. It stands in for the growth of ergonomic/cognitive/psychological methods/processes on the one hand and computer science on the other.

Elsewhere, the field of interaction design has sought to move beyond its cognitive beginnings in ergonomics and psychology to become more socially, culturally and philosophically orientated (Harrison et al 2007).[5] This has manifested as an interest in aesthetics, affect and, like feminist theory, experience. Adopting phenomenological approaches and experience (centred) design produces a far richer understanding of the human condition.[6] However, the degree to which this includes critical reflection varies. By equating this with the move to see gender and identity in terms of lived body experience (Young 2005), we can ask the same question she does: is the experiential prioritized at the expense of examining relations in a more critical form?[7] However, where feminism was moving away from a critical stance, we can see a more reflective understanding of HCI in these embodied approaches.

There remains the danger, though, that if we bring in diverse social aspects but ignore overtly political relations, we embed our practices further in the service of the commercial technology industry of the present, using our skills and our understanding of embodied and situated experience to help produce more effective and efficient machines and perpetuate the social status-quo, not find a more effective context for life. This works to further the transcendance and embedding of technocentric values.

Can we uncouple HCI from servicing technology in its present incarnation of market-led development under global capitalism? Can we instead consider how the values of diversity and flexibility can be incorporated into the 'network society' (eg Castells 1996)? The challenge, as we move towards ubiquity and in(di)visibility for computing in everyday life, is how to respond with our moral nature as well as our intrinsic creativity[8], and avoid oppositions between development and application; experience and criticality.

Thus the thought experiment can continue by adopting Queer Theory as a model. It allows us to explore experience as a meeting place, but one that remains off-centre and therefore critical, reflexive, eccentric …self-analytic. And the meeting place is both virtual: a point where individuals and teams choose their paths, and physical: for researchers, designers, technologists and others with a stake in the production, such as potential beneficiaries, to meet, but it is never a stable dogmatic encounter. To be out of alignment in this way, unlike an opposition, doesn't need a One to respond to. We can remain uncentred using our own energy and the dynamics of intersections. In this way we can reject oppositional positioning and locate a positive and independent status for HCI and interaction design practices. This will enable us to begin to answer the question: in a world where everything is becoming HCI, what should the study and practice of HCI become?[9]

[5] Arguably this is still driven by technological developments, such as the domestification, networking and mobility of new products and the different way these are marketed and used.

[6] As seen in Coyne (1996), Dourish (2001) and McCarthy and Wright (2004).

[7] Critiquing my own allegiance in questioning these practices (eg Light and Wakeman 2001, Light 2006, Light 2008).

[8] Another feature that divides us from other animals, which gets better treatment in Virilio (2000) than Stiegler.

[9] After all, an HCI discipline that took upon itself the task of knowing best and conducting social engineering is also a spectre to view with dismay.

Thinking obliquely: the naughty limb

Last, then, let us play with the idea of what the discipline would look like if it stood out of alignment with itself to keep an experiential and critical integrity. I will illustrate a possibility with another analogy. Many children go through a phase of having a 'naughty' hand or foot. It is a limb they can blame for their wrongdoing when they feel like kicking a sibling, grabbing things at table, etc. 'It's not me; it's my naughty foot.' they say. In this way, they operate with a limb that is out of line, both in terms of its literal behaviour – sneaking off or shooting out to do its own business – and in terms of what is expected of it as part of the body it belongs to. It is a convenient, if implausible, scapegoat as the child learns how to hold its own in family life.

I'm going to suggest that HCI needs to cultivate its naughty limbs; limbs out of alignment with the main body of research; limbs that can be blamed for excess of high spirits, experimentation and just plain stubborn branching out. …Limbs which ignore sensible streams of funding or subvert them. These limbs will explore positions which posit chaos in the system; which turn conventional wisdom upside down; and which create sites of resistance that are not defined in terms of oppositions. Such tactics make space for the unthinkable to be conceived. This is the queering that HCI needs.

Disruptive tools already exist. Some, like enacting the role of the maverick or the Lord of Misrule, are ancient practices. Some, like methods of gentle disorientation, have been used to good effect in research and design but remain particular to their authors (eg Light, Blythe and Reed 2008, Light et al 2009). Some have become better known (eg Gaver et al 2003, altchi 2007 on).

And some position papers for this workshop have a distinctly naughty air.

The reason we need this sabotage/saboteur comes back to what Butler and her followers have been telling us about ourselves. If we take a non-essentialist position on the formation of identity, it follows that we have been, and are going to be, inscribing identity through the new sociotechnical initiatives we devise (see Light, forthcoming, in relation to health and monitoring technologies). The application of the notion of performativity in this capacity becomes both a means of analysis and a disruptive tool with which to challenge orthodox design (Light, forthcoming). It is a *self*-fulfilling prophecy in both senses of the word. There is something fractal about queering the making of products that define our sense of who we are, with infinite patterns of intersection between personal experience and societal norms.

Thus, to resist the endless furrow of a 'straight orientation' (Ahmed 2006); to make the space for women and men to define themselves as products of rich and various inscripting (and not regard their position in the network as enduring and essentially given), we need to embrace 'the choices and dangers, reasons and insanity embodied in the relations of computing' (Star 1995). And we need much disorderly mischief and mayhem on the way. It is only the oblique route that puts the flexibility in the system for diversity to flourish and allows for the 'virtues of agency, fulfillment, negotiation of identity, equity, empowerment, and social justice' (Bardzell and Churchill 2010), or whatever a future generation, allowed the freedom to conceive of them, considers the key virtues to be.

In conclusion

Vision: the future should be messy.[10]
Vision: The future should be flexible. It should be varied.
Vision: the future should be feasible. It should be slower. (Light 2007)

These visions came from a meeting of women: of senior computer scientists invited to talk about the future of computing. Having discussed the technological visions of influential thinkers such as Mark Weiser (Weiser 1991), they spoke modestly, not about technical potential, but about quality of life and the world they wanted to live in. Indeed, they spoke at length in resistance to the organizing effects of computing, as a diverse and occasionally contradictory chorus of voices…

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This paper shows none of the tact that I associate with Susan Leigh Star, but it is suffused with her influence. She was an exemplar of obliqueness and wit. Not least, she was an inspiring and challenging presence at the meeting described above. I know I won't be the only one to miss her.

References

[1] Ahmed, S. (2006) Queer Phenomenology: Orientations, Objects, Others, Duke University Press

[2] Bardzell, S. and Churchill, E. (2010) CFP: IwC Special Issue on "Feminism and HCI: New Perspectives", Archives of CHI-ANNOUNCEMENTS@LISTSERV.ACM.ORG.

[3] Bauman, Z. (1990, 2000) Social Manipulation of Morality: the European Amalfi Prize Lecture in *Modernity and the Holocaust*, Cambridge: Polity Press, pp 208-221

[4] Blevis, E. Sustainable Interaction Design: Invention & Disposal, Renewal & Reuse. CHI'07 (2007)

[5] Butler, J., (1990) Performative Acts and Gender Constitution: An Essay in Phenomenology and Feminist Theory. In: Case, S. (ed.) *Performing Feminisms: Feminist Critical Theory and Theatre*. Baltimore: John Hopkins University Press

[6] Castells, M. (1996) The Rise of the Network Society, The Information Age: Economy, Society and Culture, Vol. I. Oxford: Blackwell

[7] Coyne, R. (1995) Designing information technology in the postmodern age: from method to metaphor. Cambridge, MA: MIT Press

[8] de Beauvoir, S. (1972/1949) *The Second Sex*, transl. H M Parshley, London: Penguin

[9] Dourish, P. (2001) Where the action is: the foundations of embodied interaction. Cambridge, MA: MIT Press

[10] Dyer, R. (1997) White. London and New York: Routledge

[11] Durando, M., Wastiau P. and Joyce, A. (2009) Women in IT: The European situation and the role of publicprivate partnerships in promoting greater participation of young women in technology, European Schoolnet: http://resources.eun.org/insight/Science%20girls5.pdf

[12] Ess, C. (1997) Susan Leigh Star, "The Politics Question in Feminist Science and Technology Projects: the queering of infrastructure." (Saturday, January 18, 1997): http://www.drury.edu/ess/Technology/starr.htm

[10] I note that G. Bell's CHI'10 keynote talk addresses "Messy Futures: Culture, technology and research".

[13] Flanagan, M. and Nissenbaum, H. (2007) A Game Design Methodology to Incorporate Social Activist Themes. CHI'07.

[14] Gaver, W.W., Beavers, J. and Benford, S. (2003) Ambiguity as a Resource for Design. Proc. CHI'03.

[15] Harrison, S. Tatar, D. and Sengers, P. (2007) The three paradigms of HCI. Ext. Abstracts CHI 2007

[16] ITU Internet Reports (2005) The Internet of Things Executive Summary: http://www.itu.int/osg/spu/publications/internetofthings/InternetofThings_summary.pdf

[17] Light, A (2006) Adding Method to Meaning: a technique for exploring peoples' experience with digital products Behaviour & Information Technology, 25 (2), pp175-187

[18] Light, A. (2008) Transports of Delight?: What the experience of receiving (mobile) phone calls can tell us about design, Personal and Ubiquitous Computing 12 (5), pp 391-400

[19] Light, A. (2007) The future of computing: visions and reflections. *Oxford Internet Institute Forum Discussion Paper No. 11*, University of Oxford

[20] Light, A. (forthcoming) The Panopticon reaches within: how digital technology turns us inside out, Journal of Identity in the Information Society.

[21] Light, A., Blythe, M and Reed, D. (2008) Defamiliarising Design, *Design Principles and Practices* 1(4) 63-72

[22] Light, A., Simpson, G. and Weaver, L., Healey, P.G. (2009) "Geezers, Turbines, Fantasy Personas: Making the Everyday into the Future" Proc. Creativity and Cognition 2009, Berkeley, Oct 2009

[23] Light, A. and Wakeman, I. (2001) Beyond the Interface: Users' Perceptions of Interaction and Audience on Websites, Interacting with Computers, 13, pp325-351

[24] Martin, U., Liff, S., Dutton, W.H. and Light, A. (2004) Rocket science or social science? Involving women in the creation of computing. *Oxford Internet Institute Forum Discussion Paper No. 3*, University of Oxford

[25] Pitt, J. (2000) Thinking About Technology: Foundations of the Philosophy of Technology. Seven Bridges Press, New York.

[26] McCarthy, J. and Wright, P.C. (2004) Technology as Experience. Cambridge, MA: MIT Press

[19] Sengers, P., Boehner, K., David, S. and Kaye, J. Reflective design. *Proc. CC '05,* ACM Press, (2005) 49-58.

[27] Star,S.L. (1995) Introduction. In S.L. Star (ed) The Cultures of Computing, Cambridge, MA: Blackwell

[28] Steel, M.V. (2001) Women in Computing: Experiences and Contributions Within the Emerging Computing Industry: http://www.computinghistorymuseum.org/teaching/papers/research/steel.pdf

[29] Stiegler, B. (1998) *Technics and Time, 1: The Fault of Epimetheus*, Stanford: Stanford University Press

[30] Trauth, E. M. (2002) Odd girl out: an individual differences perspective on women in the IT profession *Information Technology & People*, Vol. 15 No. 2, 2002, pp. 98-118

[31] Trauth, E. M., Kvasny, L. and Greenhill, A. (2006) Conducting Feminist Gender Research in the Information Systems Field, In: Stahl, B.C. (ed) *Issues and Trends in Technology and Human Interaction,* London: IRM Press, pp 1-24

[32] Virilio, P. (2000) *The Strategy of Deception*, London: Verso Books.

[33] Weiser, M. (1991) The Computer for the Twenty-First Century, *Scientific American,* Sept 1991, pp. 94-100

[34] Young, I.M. (2005) *On Female Body Experience: "Throwing Like a Girl" and Other Essays*, Oxford: Oxford University Press