

A sense of body

Richard Harper, Microsoft Research Cambridge, September 2011.

Contact: r.harper@microsoft.com; <http://research.microsoft.com/en-us/people/r.harper/>

Introduction

A colleague emails me and my colleagues at 12pm; she will do the same two hours later and then again at 6 am. Why? Is she doing this to imply she is on a night shift? This seems unlikely; our workplace is a research lab, not a manufacturing plant. Our hours tend to be civilised. Nevertheless she is doing so because she has an agenda that is related to hours of work. She wants to give the impression that she works so hard that in effect she works all the time. Being at work, sitting at her desk in her office, her bodily presence at work, won't convey that impression of course: none of her colleagues would notice. After all, during the times she emails, they will be at home, probably in bed, tucked up nice and warm. She is using one of the properties of email to create this sense of her body, of her body being somehow present in the domain of labour, the 'office', all the time, not just at night. She is doing this in a particular way, one might say. But one might also say it is an odd way, odd at least in the sense that it is only something that has been possible recently. To put it in digital argot, she is using electronic messaging to create a sense of her 'presence' when the presence is not of her real body, its fleshiness as it were (and all that implies about the mixed things that people are: brains and bones, minds and hearts, rational creatures yet emotional too, and so on). Her presence is her - whatever that might be if not flesh and blood.

Technology is allowing what I will call a shift in what 'being somewhere' means, where that assumes physical presence in that place or location to one where that means digital presence – which consists of an absent bodiliness. With one, she disappears when her body goes; with the other, the one she turns to, she is always 'there', wherever there is and despite where her body might be.

She manages this remarkable metaphysics through digital actions.

Shifting metaphysics

An obvious way of developing on this point, on this metaphysics, would be to say that this is a manifestation of modern ways of working, where distance has been dissolved by technology. In this view, one can work anywhere, as long as one has the Internet. One can work anytime too, indeed all the time if one so wishes. One is merely a point in a system of connections. Yet this allows us to play with the metaphysics of space, the body and all that means: presence/absence, distance/nearness.

But that is not the shift I am wanting to think about. I want to think about the relationship between the things people do, their body as a thing related to this, and the connection between this and what computers let that thing, them, their body do or be understood as. I want to suggest that there are a number of possible shifts that can be imagined in relation to this duality: a duality about the self, the

body, on the one hand, and how this is mediated by digital technologies on the other. There is an intertwining of the two, the body/self and the computer, I want to suggest, that can lead us in to strange places where what we understand is the 'who' or the 'what' (a particular body say) behind the digital act shifts and alters. It alters not simply as we make new constructions of ourselves, of our bodies, but also through changes brought about in computers too: what the body is is sometimes affected by technology: what computers afford lead us to see different things about what bodies afford too.

These shifts are not all analogies of this first example, the one to do with presence/absence but are rather better thought of as diverse and subtle; altering some aspects of what is represented as bodily and what is possible in terms of computing viz-a- viz that sense of body.

Consider the following shift: with digital technology my colleague is no longer merely the recipient of information. The fact that she sends email attests to something else: it notifies us of the fact that she is the *producer* of information and not solely (or even) a consumer of it. This shift is often talked about especially as regards organisations because it is said to be virtuous: making organisations better than in the past. It turns around the idea that, with communications technology, with the Internet as a kind of synonym for all kinds of contemporary ways of communicating, the relationship between information and the human body is reversed in organisational contexts. Before, organisations (somehow) produced content and this was consumed by the organisation's staff, by its bodies, as it were. Now, with digital connectivity, with the Internet inside and between organisations, people, embodied members of the organisation, come to produce it. The contrast is one between information produced through the limiting, unidirectional prism of organisational hierarchy and constraint on the one hand, and, on the other, a turn to the expressive freedom of individuals, real bodies speaking thing 'from the heart' rather than from the 'rule book'. A further contrast used to illuminate this distinction is the one between 'Corpspeak' and 'blogging'. Lots of people have remarked on this change; a revolution is occurring in organisational life as well as in the public polity, some would have us believe (see for example, Hewitt's 2005 book, *Blog: Understanding the Information that is Changing your World*; also Scoble & Isreal's *Naked Conversations* of 2006). Never mind that one cannot quite understand how in the past organisations produced information if not through the embodied actions of staff – this is the contrast made: between a dehumanised world of organisational information and one made creative by the presence of real active bodies (see for example, the now somewhat old book, *A Thousand Tribes*, by Lissak & Bailey, 2002).

It maybe. But my interest in this characterisation is, as I say, to do with how it is said to constitute a shift from a body that consumes to one(s) that produces. Outside organisations, outside of work contexts, outside debates about, say, the digital commons, this shift has a number of corollaries: an obvious one has to do with the impact of User Generated Content (UGC) on broadcast content. But another, less often drawn, has to do with how digital technology creates a shift from the body being the thing that *receives* to one where it is the body that is becoming neither the consumer nor the producer but the *subject*. Consider the following images taken from Flickr. It is the body that is the thing represented, the body is the thing-as-topic; it is the body that is the information presented and conveyed. The body seen is not the thing that consumes nor the producer of content. It *is* the content.



Figure 1: the body as subject

The metaphysics of machines

All of the preceding turns around the relationship between the human body and computer systems: the entities constitutive of the duality I am concerned with. Bodies and systems have always been paired, particularly in terms of how bodies are thought to be fitted or fit-able-to systems (computer systems). There are a number of views here, and each view can be thought of as a shift in the perspective chosen, a shift from one, a shift to another.

A typically shift is this: one where the relationship between computer systems and the human body turns around making both alike: by treating both as information processing machines. This is the view of ergonomics, for example, and this is the view that underlies what has come to be called HCI or human computer interaction. In this view, the task of design, research and engineering is to build human-computer systems that balance what the human body is good at with what the computer is good at. It turns out they (the human and the computer) are good at different things. Humans are good at short, consequential qualitative judgements, computers at vast binary choices.

It turns out, furthermore, that one can get a long way with this shift, when measured in terms of well-regarded systems design, especially for very large and complex systems – nuclear power control rooms, military hardware. But it turns out also that there are limits to what can be understood with this shift. As Bainbridge notes (1983), the ultimate problem for ergonomics is not to model what each machine is good for, the human and the digital, it is designing systems that ensure the ‘person machine’ in the overall ‘person-machine system’ doesn’t get bored and hence ‘perform’ (as machines) as well they might. Boredom is a kind of moral phenomena, of course, and so the problem that this shift cannot deal with is not machine-like. To be sure, when bored, people process badly, making poor judgements about the qualitative matters that are their responsibility. But noting this, seeing this, identifying this, accounting for this, leads to explanations that this rendering of the human, as a machine, cannot encompass. This is the paradox of ergonomics: drawing attention to this boredom is achieved by the very fact of excluding it from the properties of the human body in the first place, the properties in scope of this vision, the ergonomic one.

There are many other shifts as regards the person-computer duality, less often thought about. Take Shelly Turkle’s analysis of the relationship between programmers and computers in her book *The Second Self* (First edition 1984). Consider how her view of this relation has altered by the time she produced a second edition (2005). Both views can be thought of as presenting a fitting of one kind or

another of the human body to the technology. In the first, the fitting has to do with how programmers make the machines become their mirror, in to their 'second selves'. In the second view, the shift has to do with how programmers make the systems they programme (or users, as they have become by the time the second edition was produced) make systems that create fictional versions of the programmer, the user, the self in question. In the first, the marvel of the human body, that it is sentient, is reflected in the apparent sentience of the PC; in the second, the marvel that is the body with all its uniqueness, its identity, is abandoned and hidden from view through the creation of a different body, a fictional one, a false identity albeit in virtual form only.

Other views about the relationship of the human and computer systems have different hues, emphasising different properties about how the body is fitted to the computer. For example, in the social network theorist Clay Shirky's work (See his *Here Comes Everybody*, 2008), the view is presented that says that people are vain but they also like to exercise their mental capacities. Social networks, computer systems in other words, can let them do this (exercise their minds) in a fashion that lets them show civic generosity, Shirky says. In this way, so he implies, the vanity of people (of those who use social networking technologies) can convert itself into vaingloriousness. The fitting here, the shift that is being made, is to offer a view of the human where the human is thought to have all too human frailties, ones that can only be accounted for by treating the human as having emotions and drives, ones that emphasise all-too human frailties. Humans in this view aren't all bad of course: for besides vanity, people are also convivial. Computer mediated social networking can enable this too, Shirky claims.

The point is that one can think of this as a shift, a shift that (re-)characterises what is being mapped or portrayed in the duality of the human and the computer system. This shift, this vision, this thing fitted to systems in this case, offers only a pallid conception of the human, embodied with all too human frailties though they might be. Many theorists of social networking are very keen on this lightweight vision of the human: without wanting to explore the literature in detail, one often reads how behaviour on social network sites can be understood in terms of 'transaction costs'. Here human action is rendered in terms of the game theory or behavioural economics: this view shifts the human into being remarkably less human than even Shirky's pallid view. At least he allowed vanity; the game theorists' only allow calculation (See Benkler's *The Wealth of Networks* of 2006).

These curiously anodyne visions of the human bring to mind other researchers who generally make very little comment on the duality that concerns us, though they like to make a great deal of comment about the human part. One is led to think of Maffesoli, for example, and his theory of Dionysian tribalism (*The Time of the Tribes*, 1996). In this view, the humans who go to work do so as to sweat with their colleagues, to laugh with them and to share and relish in their joint success when it comes (of it comes). In this view, a human is emphatically a bodily thing, and a human's body is emphatically bound to the social identity that that body enables and demands: the Dionysian, the sensual (and the sexual) in the workplace and elsewhere.

But this view, rich though it may be, seems so far from what is normally conceived in the body-computer dualism. The properties of computing seem to have no influence on this view. Doubtless this is right: Maffesoli wasn't writing about computers. It was no concern to him. But the richness of his view makes all the more stark how odd the view of the body that is so often drawn when the computer is used to help craft it, as the examples above attest.

This view, though often pallid, is constantly altering, sometimes in startling ways. Inside digital technology research such as my own institution, for example, we have been creating a technological landscape where the bodilyness that I describe above, one that makes the body the subject of itself, almost slips completely from view. If, with one shift, an archaic one perhaps, the body came to be seen as a consumer of information, and if a more recent view that the body is a producer, and if, following that, a third view came to be one where the body becomes the subject, then my colleagues and I have invented yet another possibility, another shift in the body part of the duality in question. In this view, the body completely disappears from view – altogether. It is not seen nor is it the subject as is the case in the Flickr images above. Yet the view is produced by making the user's body the vehicle for the technology, the computing. The computing in question is a wearable camera, called a Sensecam (see Figure 2) (Harper, et al, 2008). But once this is 'put on', worn, carried, whatever the word one wants to describe the orientation of the user to the device, the user's own body ceases to be pertinent to what is produced. What comes to be manufactured through this duality is a view of everything other than the body of the user. It is the world as seen from that point of view, but not of where that view is. The images below in Figure 3 show this emphatically. Other's bodies may be seen; the world as seen from the body might be presented - but the body itself is gone.

I started this essay with remarks about how my colleague manages to use digital technologies to create a sense of presence even when she might be absent. With Sensecam the presence of the user is somehow made invisible, almost ghost-like. One understands that it must be there, but one's attention is cast elsewhere, to everything else. In this, the body becomes a void, a nothing, a distraction from what should be looked at.



Figure 2: A Sensecam placed on a user's body



Figure 3: Images from a Sensecam showing how the body of the user disappears from view

Fixing the body

These last two examples emphasise the geographic relationship between the body and the computer. Other examples can easily be brought to mind: my own company's Kinect cameras, (much of the technology behind them also devised in my own lab, like the Senscams) also treat the body geographically, as a thing seen – in the case of the Kinect, from the point of view of the PC or Xbox screen, or more precisely from the stereo cameras affixed to the top of the screen.

But this painterly orientation to the human in the person computer duality is still not by any means the only shift that can occur. There is one more I want to draw attention to and in this the painterly aspect, the body as a thing seen as a whole or as a thing that allows a painterly point of view from afar, is hardly pertinent at all. The shift I am thinking of has to do with how the body is treated merely as a thing that points and touches, as an instrument that controls a mouse and keyboard. This might seem an odd way of putting it but in the examples above the body's bodyliness is the stuff of interaction. But another shift in the duality of concern looks at how the touching of keyboards and the clicking of the mouse on different web pages allows the computer – in this case remote systems linked to the keyboard via the Internet – to construct a vision of the body doing the typing.

For example, most browsers now 'intelligently' fill out forms for the user by keeping a history of how similar forms were filled out in the past. Similarly, some websites will auto complete forms. More importantly, the dialogue between a user and nearly all search engines is stored by those search engines and used to predict what a user wants. Thus if a user enters the search term 'Pompidou' and is offered connections to the history of French Presidents and to Parisian arts centres, and then clicks on the latter, the next time that the user enters that search term into the search engine, the search engine will promote the arts centre listing to the top of the information presented to the user as 'targets' or 'hits'. This is called 'personalised search' when what is meant is not that the user personalises their own search in anyway so much as the search engine does the personalisation.

The search engine companies show much excitement about his technique since it allows them to sell advertising space on the basis of predicted volumes of search enquiries and 'click-thru's'. If a known proportion of those who enter the term Pompidou are interested in art, then arts supplies companies are likely to pay for adverts about their wares on the search pages presented to those users, for example. These adverts are not replacements for search targets but use up space alongside those targets. Many commentators view this as a sinister development. They think this will lead to social fragmentation, with people not discovering what everyone else is looking for and thinking about but only things that they themselves and a few other like-minded souls are concerned with. It will lead to people search and gather information in small bubbles, as Eli Pariser puts it in his *The Filter Bubble*, of 2011.

This may be, though I think it massively exaggerates the effectiveness of the technology in question. It also in my view misunderstands its consequences. When seen from inside the companies devising such technologies, what becomes clear is how very gross are the results of these predictive calculations and how very broad grained. It's not so much personalisation they offer, as the blanding of search: more people find the same: this seems to be the consequence of it.

But this itself has other consequences. For the same that is found is largely derived not from the current search that a user undertakes but on the basis of an assessment of prior ones, in which each instance is used to weigh the likely 'meaning' of any subsequent instance. A property of this technique, involving what is called machine learning, is that after a certain volume of data examples, it tends to always produce the same result. It fixes, as it were, it hones on what it thinks of as a certainty. Once it has come to predict that a user wants 'arts related information' and not 'political related matters, it will always deliver arts targets when the term Pompidou is entered, for example. This disregards whether, in some new search, this is, in fact, what the user wants to seek.

The impoverished view of the human –as they act and change through time - that uses such systems can be further illustrated by noting that Facebook uses a similar technique. This is why people that are linked to each may find that they don't see what the other has posted since the system has 'calculated' that they don't have a likelihood to show much interest in that other's postings. In this view, a friendship through Facebook is equal to the frequency or the likelihood that a reading of that friend's Facebook account will occur. In so doing, it is creating another shift, this time not effecting how the bodies of its users are seen, or seen from, or one that explores the distinction between what is created or consumed. Facebook is shifting the human in the duality of computer/person into one where the human is seen solely in terms of the frequency or likelihood of contact to another human. Thus friendships that are so profound as to need few catch up calls or regularised though frequent, even weekly cossetting, slip from view.

Conclusion

This arithmetical account of friendship, it hardly needs saying, is little better than a kind of autism if it is meant to account of real friendship. It barely grasps its diverse and complex forms, the truths of friendship as between people. It simply offers a way of seeing friendship when rendered in the duality of computer and person, and this rendering is of a particular kind, one of many I have illustrated above. My purpose has not been to suggest that there will be eventually a 'correct' or 'better' view of the human, the body in this dualism. My suggestion is that there will always be lots of ways of shifting the view of the human in this duality. One might be dismayed at some of these shift and sometimes enchanted, one might get vexed or amused. One can only giggle at what Facebook is doing with its machine learning algorithms, for example, giggle because they produce a wonderfully distorted vision of friendship. But this very giggling is suggestive of something more important. It is suggestive that how users orient to the dualities they are confronted with is one where they see it as a resource, an interpretive resource for their acts of communication. Think of the colleague I mentioned at the outset- the one who emails at all times of the day. How are those she works interpreting her digitally mediated actions? I suggested that she sends messages at all times of the night to make herself 'present' despite her bodily absence. Is it then that my colleagues and I imagine she is working all the time, irrespective of her body's locale- it being a home, at work, anywhere?

Derrida in his *Signature, Event Context* (1972) said that the metaphysics of the word communication implies that bodyliness and place, identity and content, are wrapped together. He also said that with the written word, identity dissolved if by that is meant *context for identity*. Thus, if Derrida is right, it would appear that in the case of my colleague, since she uses written means of communicating, email, she manages to strip the links that bind placeness to her body and at the same she strips identity and content from one another. So what then does she create? Something weirdly other? – a

ghost-like thing perhaps, disembodied, placeless, without a certain identity? But when our colleague messages to us we don't think she is like this - a virtual ghost in our organisation, acting but not being. We think something much more prosaic. We think she is making a mockery of us by giving false impressions about how hard she is working. She is playing a game and trying to fool us. But we laugh at her in turn just as she mocks us: we know that these efforts to imply one thing are no guarantee that that thing is in fact the case. We know too that they are indeed more likely to be attempts to dissemble, to cheat, to fool us. Knowing this we look at the timestamps on her email and smile: how hard she tries to give the impression she works all the time, we think to ourselves. For we know that she cannot be working all the time. We know how a real body cannot work 24/7 even if the body as seen through the digital world suggests it. We know she is leveraging the various ways that the body can be presented through the digital. But we know and doubtless she knows too, that there is no fixed link between the body as seen through the computer, in the duality of that, and what the real body does in how the real world is.

The truth is as follows: there are only various ways of rendering when bodies and computers are brought together to interact in a dualism. And how we use this rendering to give an impression of the body in this dualism is one of the arts of the contemporary world, I want to suggest. How we interpret that artfulness is another fact of that art. We put ourselves in to one view of the body so as to convey a perspective, a line of sight, a point of view that aids us somehow. But we know that this is instrumental, not veridical (veridical as regards the world of bodies, outside of computer –human duality). All of our actions in the digital are artful in this sense.

It is no wonder, therefore, that oftentimes we look at our colleague's emails sent at 2am and mutter, 'Who is she kidding?' Digital identity is not an opposite of corporeality. It's always anchored, mirrored, played with, used and abused by reference to itself, to what it affords (See my book *Texture*, 2010). But beyond this it is anchored to the real world through our artful use of it and our artful interpretation of that use. And this art, if art it is, is all about who we want to be (and where, why how and what for.)

Links and permissions

Figure 1

1) <http://www.flickr.com/photos/kygp/2603117633/>

2) <http://www.flickr.com/photos/woordenaar/2274675416/>

3) <http://www.flickr.com/photos/bitca/522374320/>

Citations

Bainbridge, L. (1983). 'The Ironies of Automation', *Automatica*, 19(6): 775-779, Elsevier, reprinted in Moray, N. (Ed), 2005, *Ergonomics: Major Writings, Vol IV*, Taylor & Francis, London and New York.

- Benkler, Y. (2006). *The Wealth of Networks: How social production transforms markets and freedom*, Yale University Press, Yale.
- Derrida, J. (1988, originally 1972). 'Signature Event Context', in *Limited Inc*, G. Graff (Ed), Northwestern University Press, Evanston.
- Harper, R. (2010). *Texture: Human Communications in the Age of Communications Overload*, MIT Press, Cambridge, Mass.
- Harper, R., D. Randall, N. Smyth, C. Evans, L. Heledd, and R. Moore. (2008). The past is a different place: They do things differently there. In *Proceedings of DIS (Designing Interactive Systems)* (271–280). ACM Press, New York.
- Hewitt, H. (2005). *Blog: Understanding the Information Reformation That Is Changing Your World*. Nelson Books, Nashville.
- Lissak, R., and G. Bailey. (2002). *A Thousand Tribes: How Technology Unites People in Great Companies*. New York: Wiley.
- Pariser, E (2011) *The Filter Bubble: What the Internet is Hiding from You*, Viking Press, London.
- Maffesoli, M. (1996). *The Time of the Tribes: The Decline of Individualism in Mass Society*. Sage, London.
- Pariser, E.(2011). *The Filter Bubble: What the Internet is Hiding from You*, Viking Press, London.
- Scoble, R. & Isreal, S. (2006). *Naked conversations: how blogs are changing the way business talk with customers*, Wiley & Son, Hoboken, New Jersey.
- Shirky, C. (2008). *Here Comes Everybody: the power of organising without communications*, Allen Lane, London
- Turkle, Sherry. (1984). *The Second Self: Computers and the Human Spirit*. Simon and Schuster New York.
- Turkle, Sherry. (2005). *The Second Self: Computers and the Human Spirit, Twentieth Anniversary Edition*. MIT Press, Cambridge, Mass.