Twitter Chip

scripted

Volume 8, Issue 2, August 2011

TWITTER CHIP

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Abstract

Simon Biggs gives an interesting perspective about cyborg-like technology, such as brain implants and augmented reality spectacles. It may seem like science fiction, but these are technologies that are closer than you imagine.

DOI: 10.2966/scrip.080211.120

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The Chief Economist at Google, Hal Varian, was quoted as saying that in 2020 Google would exist as an implanted chip within the fabric of the human body,[1] thus envisaging the potential of direct mental linkage to the resources available through automated information search technology. In such a science fiction scenario our connectivity with the web and its power to augment human mental performance would be internalised within our biological systems, directly integrating our neural circuits with the Internet and everything connected to it. The "Google Chip" would, by definition, be a two way connective technology - not mind to mind or thought to thought but mind to a knowledge repository that updates in real-time. We would be capable of sending and receiving information directly from our minds to the Internet and, by extension, to those who are also linked to it. However, whilst this is extended mind on a global scale, where the social dimension of network technology allows a novel re-envisioning of the "Society of Mind",[2] it is not quite electronically mediated mind-reading. For that we need another implantable chip.

What if the super-successful micro-blogging service Twitter was to release a cortically implantable chip? This would be a chip that allows the endowed "client" to send and receive tweets by simply thinking it so. Whilst not a mind to mind connection this is a mind to thought to mind connectivity that approaches an inter-mind dialogue resembling mind-reading. However, what if this "Twitter Chip" was able to output and receive not only the conscious thoughts of the client's or sender's mind but also its unconscious thoughts and feelings? Would we then be in the domain of mind-reading and inter-agent empathy? Would we be able to feel what each other is feeling, as it is felt? Could we ever again wear a convincing "poker-face"?

The question here is not what the technologies of the self can do for us but what they will do to us? The implications of such a capability are profound, the likelihood being that we would have to re-conceive our social relations and even what it is "to be".

Currently this is science fiction. Whilst Varian may think a cortical chip connecting the mind to the Net might be a desirable possibility, the science that would allow this to happen does not exist. There are numerous barriers to the realisation of this cyborg's wet-dream; conceptual, technical, biological, legal, ethical and economic. Nevertheless, science fiction's function has often been not to speculate on what our future might be but to consider our present through its cracked mirror, the subtle distortions it offers revealing insights into contemporary realities. This is true of the dystopian work of Orwell and Huxley as well as the darkly tinged but more ambivalent writing of Wells or Verne.

The science fiction novel *Dhalgren*[3] envisions a post-apocalyptic world where various peoples converge upon a large metropolis; a place where they can reinvent themselves, almost literally, as whatever they wish. In the novel people possess a

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[1] A Millikan, "I Am a Cyborg and I Want My Google Implant Already" (2010) *The Atlantic*, available at http://www.theatlantic.com/technology/archive/2010/09/i-am-a-cyborg-and-i-want-my-google-implant-already/63806/ (accessed 10 July 2011).

[2] M Minsky, *The Society of Mind* (New York, NY: Simon and Schuster, 1988).

[3] S Delany, *Dhalgren*, (New York, NY: Bantam Books, 1975).

technology that allows its users to dress themselves in all enveloping holograms of their design. The inhabitants of the ruined metropolis inhabit its streets and public places in like-minded gangs known as "Scorpions", with members appearing in guises of their own crafting but sharing a commonality that allows them to identify with their particular gang, reminiscent of the role the tattoo can play in contemporary cultural milieus. Written a quarter of a century before Second Life went live on the Internet, Delany's novel is a premonition of what has since come to pass in information space, where individuals appear to and interact with one another in any guise they desire. What if, along with our Google and Twitter chips, we could have a "Second Life Chip"? Such a chip, employing augmented reality technologies, would allow us to appear to others as our preferred avatar within the context of our daily lives, in the street, at work or at home. As Second Life would become our second nature it would come to envelope our first life.

In Delany's novel the lead character has no recollection of who he is and therefore seems an ideal candidate for membership of a "Scorpion" gang. However, he chooses to remain his (uncertain) self, un-garbed and non-augmented and, to a large extent, poorly differentiated, as he wanders the streets in search of clues that may reveal his identity. *Dhalgren* is a long and rambling text - or rather texts, for the second half of the novel exists as two parallel stories that only connect from time to time, a bifurcating narrative as split as the identity of the main character and the metropolis he inhabits. The text is structured so as to mirror the confusion between what may or may not be real. The use of language in the novel echoes the schizophrenic mental state of its subject and his environment and thus functions as a meditation on what the effect of such reality displacing technologies might be. In this respect Delany's novel would seem to be prescient in respect of currently emerging technologies.

To some extent the technologies that would allow our first life to be enveloped by Second Life are better developed than those required to manifest Varian's speculative Google upgrade. Augmented Reality technologies that do not require the use of invasive systems (such as implanted chips and sensors) already allow us to mingle real and virtual imagery. Sekai Camera[4] is an augmented reality app that employs "Air Tags"; texts, pictures, or voice messages that users can view, share and annotate. The application augments your mobile device camera with layers of data that are co-related with the things around you, whether commercial services, public information or the personal information of people who wander through the camera's field of view. Similarly, you can make public the stored user-profile on your device so that other's using the app can see your details displayed on their device, along with your own real-time self, as you physically pass through its field of view.

The Aurasma app[5] allows the user to co-locate imagery with real-world images. The user can match a stored image with any object or scene their mobile device can recognise. Once the co-relation is established then whenever the same scene or object comes into the visual field of the user's mobile device it is overlaid with the selected image, effectively masking it. This data can be shared with others such that whenever you appear in the visual field of their mobile device you will appear not as yourself but as your preferred visual image – effectively replacing yourself with an avatar.

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[4] Sekai Camera (2011) http://www.tonchidot.com/en/services/ (accessed 10 July 2011).

[5] Aurasma (2011) http://www.aurasma.com/ (accessed 10 July 2011).

Whilst both of these technologies currently require users to hold their mobile device up before them, as a televisual device, revealing what is otherwise an invisible alternate reality, it is already very similar, in character and application, to Delany's imagined "Scorpion" gang holograms. It is not a great leap to imagine what the next steps might be to achieve something resembling Delany's vision.

It will not be long before we wear our iPhones and Androids like spectacles, rather than carrying them in our pockets or holding them in our hands. With the augmented reality technologies we see emergent, with Sekai Camera or Aurasma; we will be able to overlay data on our current view of the world via our "mixed reality head-up displays". We will be able to ensure that, when people who are wearing such systems meet us in the street, we will appear to them in our avatar guise. This technology is not yet a product we can buy but it is near to market. The technology to do this exists. The barriers are those of effective implementation (design) and, perhaps more importantly, user acceptance.

In respect of this issue, I can imagine this technology being a huge success. I doubt there will be much resistance to its implementation, especially amongst a younger demographic familiar with mixing gaming systems and social media and, as part of that, adopting various personae in differing contexts. It is possible such a system could be a "killer" app; an innovative product that will draw momentum from, and change, how people interact with one another. If this is to be the case there will be serious ethical issues to consider but, as we have seen during periods of rapid technological change, the chances are that such consideration will lag behind implementation. This will always be the case as we cannot manage the resources required to effectively be morally prescient, as we can never know which of our probable futures will come to pass.

Nevertheless, "andro-specs" will be a technology we will probably wear and offer an augmentation of our capabilities that is of an ilk already pervasive in our society, not that different from our current capacity to shift time (through recording) and space (through networking). However, when such systems can be implanted and inter-connected things will be different. Whilst I do not find Varian's imagined future for Google convincing, depending as its does on a reductivist view of the human that allows the complex problems inherent in such technology to appear surmountable, I do think it is probable. The question is how much time we have to consider what the implications of this technology will be before it literally envelopes us?