

There, yet not there: Human relationships with technology

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Abstract

There is a “reality” to being online which we know to be false. We are simultaneously “there” but “not there” as we talk, work and play with others in online spaces. We move between physical and virtual spaces in ways that realise the predictions made for computers in the mid-20th Century and enact scenarios from science fiction. We are left wondering if our thoughts - through our disembodied selves - have become a “second self” or if we have become part of the machine itself. Information and communication technology (ICT) have brought differing human and technological agencies to all aspects of contemporary life including teaching and learning. This paper attempts to identify and categorise these agencies through the genres of technics and to illustrate them – and our relationships with technology - through reference to philosophy, fiction and reality. It also stands as an introduction to this special issue on the agency of technology.

Keywords

agency, computer, genres of technics, ICT, online identity

Introduction

Reality is merely an illusion, albeit a very persistent one.

Albert Einstein (attributed)

You go online. You interact with people you know and with others you neither know or are likely to meet in the physical world. You are there – with them – and yet you are not. This does not surprise you because the illusion matches your expectations of what will happen, how you will feel and how you should act. That you are working and talking or playing with people you will never know does not concern you because you are not “really” there. Even when physicality is simulated through your being in a virtual three-dimensional space as a digital avatar or playing a game where motion sensors translate your physical actions to initiate and cause virtual interactions with others, you are not there. What you see, feel or hear is a simulacrum (after Baudrillard, 1994) – more than an illusion but less than a truth, an engagement that is simultaneously profound and empty, real and unreal; an unreality which creates a new reality.

The illusion works when the technology “works” so efficiently it becomes transparent. When this happens, alternate worlds are created which allow you to enter, adopt a persona, move or speak as that person, share something of your life and then leave as yourself. In (un)reality, to be where you are not. Goldberger (2003) explained that:

It’s increasingly common for cell-phone conversations to begin with the question, “Where are you?” and for the answer to be anything from “out by the pool” to “Madagascar.”... Now calling across the street and calling from New York to California or even Europe are

precisely the same thing. They cost the same because to the phone they are the same. Every place is exactly the same as every other place. They are all *just nodes on a network* -- and so, increasingly, are we. (para. 10, emphasis added)

This paper will attempt to identify and categorise contemporary information and communication technology (ICT) in terms of human and technological agency. The discussion will be structured around the seminal *Genres of Technics* (Ihde, 1979) which positioned human beings in a continua of engagement with technology from being outside or external to being completely surrounded by and oblivious to it.

Technics and agency

For Ihde (1979, 1990), “technics” were any “human action employing artefacts to attain some result within the environment” (Ihde, 1990, p. 12). Agency is the active connection between people and machines which make “something happen” (Slack & Wise, 2005) and rather than being “a possession of agents; ... is a process and a relationship” (Latour, 1987, p. 117). Ihde’s genres of technics provide a useful framework to help identify and categorise both human and technological agency. It also allows us – following Latour’s (1987) injunction – to “ignore traditional questions about the division between technology and humans, and concentrate on analysing the cultural field in which we live as a field of forces, relations, processes, and effects” (p. 123).

The technology in Ihde’s (1979, 1990) and Latour’s (1987) philosophy referred to a broad set of tools rather than to ICT. When the discussion, as in this paper, turns to contemporary online interactions then the “machine” must necessarily be a computer or a computer-mediated device, “technics” become its use and “agency” becomes our relationship with the technology.

The following discussion will, as noted, be organised by Ihde’s genres of technics (Ihde, 1979) namely, (a) intentional, (b) embodiment, (c) hermeneutic and (d) background. The sections will include critique by Sofia (1993) and be extended to include contemporary ICT use and online interactions illustrated by philosophy, science fiction, and real experiences. Examples from observed and published practice will be used to identify the agency within each genre in teaching and learning.

Intentional relationships

The first of Ihde’s genres, *intentional relationships* (Ihde, 1979, pp. 4-6), places humans - shown in the following figures as the letter “H” - as firstly part of the world and secondly as establishing a reflexive relationship between the human and the world (Figure 1).

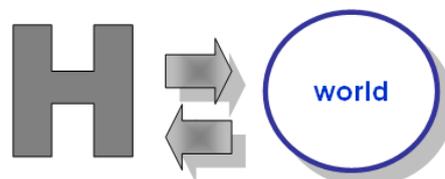


Figure 1: Reflexive intentional relationship

Intentional relationships place humans in “active engagement with the world: sensory, motor and semiotic practices ... [demonstrating] a trajectory of intention, a reaching out and into the world” (Sofia, 1993, p. 90). When you interact with the world through ICT, that is, where the “machine” mediating your experience is a computer, phone, or other device, you make the world “virtual” and, by default, position yourself outside of it. The potential richness of sensory practices is

reduced, replaced by written or spoken texts which represent you and your thoughts, actions and reactions. Human agency is constrained by the capacity of the technology. Figure 2 shows a machine-mediated intentional relationship where the virtual nature of this reconstituted world is denoted by a broken line. Examples of this can be seen in the use of wikis to supplement student learning (see Beames & Klenowski, 2009, *this issue*; Chandra & Chalmers, 2009, *this issue*).

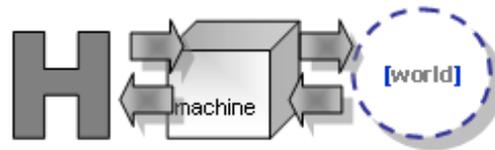


Figure 2: Machine-mediated intentional relationships

One of the first technologies to enact a machine-mediated intentional relationship was the telephone. There was a time when there were no telephones. There was a time when telephones were rare. The word *phony* came into use to describe people’s mistrust of the disembodied voices they encountered in this form of communication. The technological agency of a phone comes from the capacity it brings to communicate in real time while the human agency emanates from the immediacy and expression of verbal communication.

The phone, once a rarity, is now ubiquitous. Once a fixed hard-wired device, phones are now “mobile” and capable of multiple digital functions. Two recent examples of the use of mobile phones – representing times of extreme duress - meet Sofia’s (1993) definition of machine-mediated intentional relationships as “reaching out and into the world” (p. 90). The first is the BBC’s posting to the Internet of a photo taken in the London Underground following the terrorist attacks on July 7, 2005. What marked this photo as special – apart from its gripping subject matter of passengers making their way through the tunnels - was that it was taken with a camera in a passenger’s phone and that it is now included as an authoritative source in the Britannica.com entry on *terrorism*. The second is the synchronous reporting by hostages in the Virginia Tech shootings (April 16, 2007) where uploads were made to social networking sites and *YouTube* (see Figure 3) during or soon after the siege.



Figure 3: YouTube video of Virginia Tech shootings (screen shot from <http://au.youtube.com/watch?v=iVPx6oWmtKY>)

Weaver and Morrison (2008) explained that:

University authorities and police were using radios and telephones to keep up with events and respond, but meanwhile the students posted status reports on their *MySpace* and *Facebook* pages – message such as “I’m all right” or “I’m safe.” For these young people and their friends, the online social network had become a fundamental way ... of making sure that the elements of their world are in place, and as they should be. (p. 99)

For the majority of people, however, intentional relationships might be established by simply accessing a website or conducting an online search. Purchases or bookings may be made online which require personal information and payment details to be uploaded. These interactions are conducted through a machine to a virtual world represented by another machine, such as a bank or airline database or search engine index rather than a physical location or another person (see Figure 2). You have agency but it is a disembodied “you” going shopping or doing your banking somewhere inside a remote machine. You make things happen but become a data input.

Interestingly, the notion of humans as input devices will increase when the currently peripheral “cloud computing” becomes mainstream. The cloud is:

... the term for networked computers that distribute processing power, applications, and large systems among many machines. Cloud-based applications are, simply, programs that use the cloud as their platform, for data storage, or both. These applications run not on a local computer, or on a single server, but on a distributed cluster of computers.

(Johnson, Levine, & Smith, 2008, p. 12)

Figure 4 shows how the cloud, or “virtual machine” is accessed through a physical machine (local computer). Your data – as in current *Google Docs* applications - is stored remotely and your machine (or others) becomes the conduit to it. It cannot, however, be known how transparent the cloud will be and how clearly it will allow others to use it as a conduit back to you. For instance, if any of the “cluster” of computers holding your data is in the US, the US Patriot Act means that the data will always be visible to security and intelligence agencies. In terms of the discussion in this paper, “cloud computing” represents an interesting future development in our intentional relationships with technology.

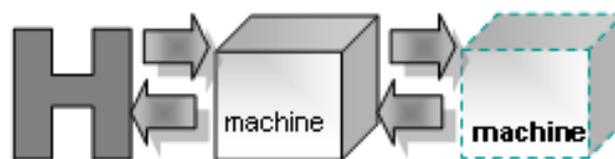


Figure 4: Accessing a virtual machine through a physical device

In teaching and learning, intentional relationships might be established through “teaching machine” software characterised by repetitive pre-programmed rote learning or “drill and practice.” Upon a successful response to a closed question requiring either a numeric or multiple-choice answer, the student may be rewarded with an affirming graphic or snatch of music. Some programs have iterative loops so that an incorrect response will take a student back to a lower level problem or to an explanation of the topic. Attempts to use artificial intelligence to make such programs more intuitive and to better replicate the processes and strategies of a human tutor remain the subject of research and development (see, for example, Mills & Dalgarno, 2007; O’Neill & Perez, 2006). You are “there” but your teacher is not. The “teaching” sequences you are following or exercises you are completing have been designed in another time and place by

someone who only remains in the machine through his or her projected expertise, content knowledge and pedagogical practices. Each session is akin to a digital séance.

Intentional relationships in school settings are often restricted to Internet searching. For younger students, this represents a relatively safe activity which can be further contained by filtering and blocking, for example, some school systems block Wikipedia [<http://www.wikipedia.org>] or the images function in Google [<http://www.google.com>]. Duty of care and online safety usually means that children can reach out into the world but the world is not welcome to reach into the world of the classroom.

In higher education, intentional relationships may be achieved through the use of a proprietary Learning Management System that allows both the upload and download of materials and simple communications (Livingstone & Kemp, 2006). In this case, the “world” has a physical setting but, for the student, the interaction is virtual. The use of learning management systems is well documented (see, for example, Collis & Moonen, 2001; Samarawickrema & Stacey, 2007) and they have been integral in changing many pedagogical practices, particularly in the field of distance learning and in bringing genuine flexibility to student engagement (Johnson, Levine, & Smith, 2008). The teacher and the students in the class may never meet in “real” space. Going to school or university might be a disembodied experience or one that incorporates both physical and virtual presence.

The substance of machine-mediated intentional relationships have not changed since initially described by Ihde (1979, 1990) but they have, with changing technologies, taken new forms. You still reach out and into the world but you do so with differing and more immediate means. Intentional relationships have lost all or part of their physicality as either you or the world you are connecting with no longer have a physical presence.

Embodiment relationships

Embodiment relationships (Ihde, 1979, pp. 6-11) describe an “experience through a machine” (Ihde, 1979, p. 8) and “technology as a body/prosthesis” (Sofia, 1993, p. 93). More recently, Alexander (2004) noted that mobile devices have become “prosthetics for information, memory and creativity” (p. 30). Figure 5 shows how our machines have become extensions of ourselves.

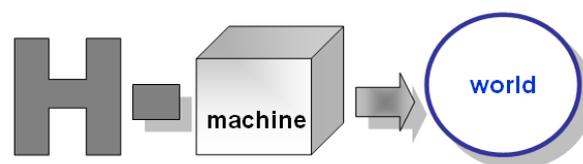


Figure 5: Embodiment relationships

It is helpful here in understanding embodiment relationships to consider the example of a biologist watching a rare bird and its chicks through powerful binoculars or scientists investigating Mars through a robotic rover. The machine, here the binoculars or robot, becomes a symbiotic extension of the person by enhancing the faculty of sight or replicating hearing, touch and smell through remote sensors. The machine becomes “transparent” through “a process of projective identification” (Sofia, 1993, p. 93) and the watchers have a “machine-mediated” rather than a “naked” experience (Ihde, 1979) of the creature in the wild or the remote location. Embodiment relationships are at the heart of McLuhan and Fiore’s (1967) thesis that “all media are extensions of some human faculty psychic or physical” (p. 26) and the understanding that “media, by altering the environment, evoke in us unique ratios of sense perceptions. The extension of any one sense alters the way we think and act and the way we perceive the world” (p. 41).

When we give students data loggers, geospatial tools and cameras, we are placing them in embodiment relationships with their environment. Similarly, the simple processes of using a spreadsheet to make calculations or to hypothesise on outcomes by changing different variables are also examples of embodiment. Human faculties are amplified through technologies that enhance our powers of observation and calculation and, in turn, create richer and more authentic learning experiences.

Embodiment relationships in teaching and learning can be seen in the use of synchronous online meetings that allow audio, video and the sharing of files (Adie, 2009, *this issue*; Schullo, Hilbelink, Venable, & Barron, 2007). They are also evident in discussion forums and wikis where teachers and learners collaborate in creating new knowledge or in allowing individuals to clarify or extend their own understandings. These do more than simply replicate human interaction in physical spaces, they force us to shift the focus to the issue at hand and, because of the capacity to record online interactions allow a revisiting of the experience which, in turn, enhances reflection. The human faculty being amplified is memory.

Hermeneutic relationships

Hermeneutic relationships explain human interactions with a machine-world. This is shown in Figure 6.

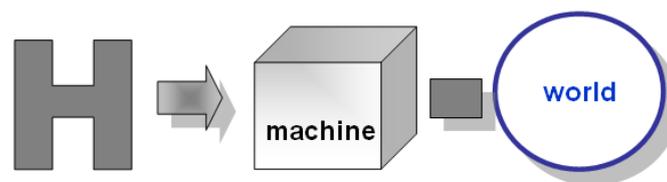


Figure 6: Hermeneutic Relationships

There are two forms of hermeneutic relationships: “technology as sign” and alterity (Ihde, 1979; Sofia, 1993). While described here as separate entities, it may more helpful to see these as contiguous, that is, as a progression from technological to human agency.

Technology as sign

Sofia (1993) described hermeneutic relationships as “technology as sign” meaning that our interaction with machines is through dials, gauges or switches; the outward signs of action. The word “hermeneutic” indicates the reliance on the external validation that has been a feature of computing from its development in the middle of the 20th Century. For example, it was noted that:

... a typical [First Generation] installation was housed in a specially built suite of air-conditioned and dust-sealed rooms. Even programmers stayed outside the room in which the actual processor and memory banks whirred; only a select priesthood of operators, dressed in white, could pass into this inner sanctum.

(Jonscher, 2000, p. 106)

The actions of the naïve computer user indicate this type of hermeneutic relationship with technology, that is, of “staying outside” the machine. When you begin, you have an ongoing, deliberate and frequently explicitly verbalised set of instructions and sequences to follow. Over time, these processes become automatic and internalised. With ICT, however, there is always new terminology to learn, technical understandings to be attained, and new social protocols and etiquettes to be observed. You often return, albeit briefly, to this relationship when you encounter new technologies or processes. You are also returned to this relationship, irrespective of experience, when a machine has “crashed,” files are “lost” or a network is “down.” For example,

the teachers involved in online meetings to moderate the standards awarded to students experienced technical difficulties which impeded the decision-making surrounding the moderation (see Adie, 2009, *this issue*).

It is useful, before continuing the discussion in this paper, to briefly revisit the beginnings of digital computing. Of particular interest is the public reaction to ENIAC (Electronic Numerical Integrator and Calculator), the archetypal First Generation machine developed at the Moore School of Engineering in Philadelphia. ENIAC weighed 30 tonnes, took up 90 cubic metres (9m x 5m x 2m) and had 5 million soldered joints and 18,000 valves. There was only one ENIAC ever built.

Arthur C. Clarke described ENIAC in *2001: A Space Odyssey* as “a high-speed moron” (Clarke, 1968, p. 94) but when it was announced and demonstrated at a press conference on February 15, 1946, the media went into hyperbolic overdrive. Contemporary headlines (reported by Martin, 1993) included:

- Mathematical brain enlarges Man’s horizons – *Philadelphia Inquirer*
- Electronic brain computes 100 year old problem in 2 hours – *New York Herald Tribune*
- Magic brain spurs science and technology – *New York World-Telegram*

These describe a technological rather than human agency. A simple parsing of the selected headlines shows that, in each instance, the subject is the machine qualified by an evocative adjective (mathematical, electronic, magic); the agents are the transitive verbs (enlarges, computes, spurs); and the object refers expansively and respectively to an unknown future, an unsurmountable problem or a whole field of human endeavour. From these beginnings, a metaphorical connection to the computer as a brain and moreover, the common understanding that the technology was the lead or active agent in our relationship, took hold. The experience of “technology as sign,” unlike the ubiquity of contemporary ICT and current fluency of intentional and embodied use, is very much “outside” of the machine.

Alterity

The second hermeneutic relationship – referred to as “alterity” - is where “the machine becomes ‘other’” (Ihde, 1979, p. 12), that is, the machine becomes your alter ego being attributed your intentions, hopes and fears. Alterity as “technology as second self” (Sofia, 1993, p. 92), lies at the far end of the continuum of hermeneutic relationships that begin with “technology as sign.” It could be simplistically described as moving from outside to inside the computer. The agency is human rather than technological.

A simple alterity relationship could be represented, as in Figure 7, where one person seamlessly communicates with another through an email list, discussion forum, or synchronous communication media.

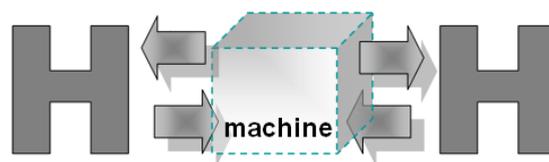


Figure 7: Simple alterity relationship

The machine (again denoted by a broken line) provides a transparent conduit between people irrespective of their physical location. Figure 7 might also be shown with one of the H symbols drawn with a broken line to indicate that the person who has sent or posted the message or image does not – and probably never will - know the recipient. The posting to *Facebook* of news from the Virginia Tech shooting (see Figure 3) fit into this category. We are increasingly and more intimately sharing our lives – through blogs and other social media -with people we do not know and will never know in real life. We are increasingly allowing others we do not know into our lives

and accepting their advice and assistance. As part of her explanation of the phenomenon of continuous partial attention, Linda Stone explained that “we want to ensure our place as a *live node on the network*, we feel alive when we’re connected. To be busy and to be connected is to be alive” (Stone, cited in O’Reilly, 2006, para. 4, emphasis added). This shows how, in an alterity relationship, our understanding of who we are is affected by our online profile and how we are perceived by others. This brings new meaning to Turkle’s (1995) suggestion that, reflexively:

We construct our technologies, and our technologies construct us and our times. Our times make us, we make our machines, our machines make our times. We become the objects we look upon but they become what we make of them. (p. 46)

The Internet – as a machine-world - is a technology we have constructed and which, in turn, has constructed “us and our times.” This is particularly apparent in the alterity relationships where physical and virtual personas become synonymous and interchangeable or where one is simply an extension of the other. Figure 8 represents this “second self” where you move seamlessly – through the agency of the machine – between your virtual persona and your physical self. The distinction between these “selves” is blurred and it is difficult to see where one begins and the other ends. The difference between the physical and virtual presence is shown by the thickness and continuity of the outline of the letter H.

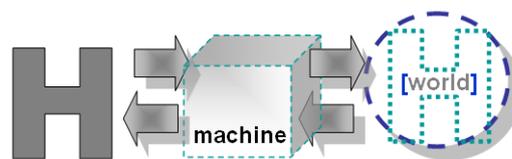


Figure 8: Online alterity correlation

The virtual persona – the dotted “H” of Figure 8 – sits inside the machine-world indicating that a total level of naturalness or immersion has been achieved. There is a blurring of the physical and the digital person (see Jahnke, 2009, *this issue*). The virtual persona is the representation of the thoughts – and personality - of the physical person. It becomes necessary, in terms of this disembodied projection of thoughts, to rethink the Cartesian cogito – I think, therefore I am. Perhaps the suggestion by Lacan (1977) that is, “I think where I am not, therefore I am where I think not” (p. 166) should be adopted. Where a person is – or is not – is no longer a barrier to being able to share their thinking and to engage with the thinking of others. Perhaps the computer is no longer just “a” brain, it is your brain. While it may be difficult for us to accept, the cogito of the 21st Century – paraphrasing the previously cited Goldberger (2003) and Stone (cited in O’Reilly, 2006) - may be that, “I am a node on a network, therefore I am alive.” This places the condition of being (life) as a consequence of being immersed in the machine-world.

In November 1946, Lord Louis Mountbatten made a landmark address to the British Institute of Radio Engineers. Through a direct reference to ENIAC, he spoke of there “now” being “an electronic brain and machines which could memorise” (*Electric brain thinks for man*, 1946, para. 1). The address ended with the claim that “now that the electronic brain and the memory machine are upon us, it seems that we are really facing a new revolution, not an industrial one but a revolution of the mind” (para. 13). Perhaps the revolution of the mind is evidenced in alterity relations where the mind – as disembodied human thought – is transmitted to the world.

“Real” examples of alterity relationships can be seen in the virtual 3-D worlds, *Second Life* and *EverQuest* or gameworlds such as the *World of Warcraft*. In these machine-worlds, you are more than disembodied thoughts represented as words, you have a physicality provided by an avatar of your own design. Here identities are commodified and can be purchased or exchanged in real space for “life” in the virtual world. Johnson, Levine and Smith (2008) explained that:

Virtual worlds are richly immersive and highly scalable 2- or 3-D environments. Most, but not all virtual worlds are multi-user spaces, meaning that many people can be in the same virtual space and interact with one another in real time, generally through a representation of themselves as an avatar. While many popular games take place in virtual worlds, virtual worlds are not themselves games. They are social environments over which a physical context can be laid. The most successful in an educational context are flexible spaces, and as such, it is quite common to find professional development activities like conferences and meetings taking place in settings such as Second Life®, Project Wonderland, OpenSim, Qwak, Active Worlds, and other immersive environments. (p. 8)

Second Life [<http://www.secondlife.com>] represents a whole society with its own currency and systems of social and commercial interaction. It is a relatively new phenomenon and some people have been known to create parallel and alternate lives in this space. Occasionally, the physical and virtual worlds collide and real friendships – sometimes marriages – develop from online connections. You – as your avatar - interact with others – through their avatars - raising all kinds of intriguing questions about identity. Yee (2004) offered that “for some players, the avatar becomes a purposeful projection or idealisation of their own identity, while for others, the avatar is an experiment with new identities. There are also those for whom the avatar is merely a pawn - the means for an end” (para. 1).

The application of 3-D worlds to teaching and learning is quickly moving from its experimental phases. One of the first to create learning environments was *Quest Atlantis* [<http://www.atlantis.crlt.indiana.edu>] and this has morphed into more mainstream versions, namely, Skoolaborate [<http://www.skoolaborate.com>] and Teen Second Life (Sheehy, Ferguson, & Clough, 2007). Universities, professional associations and some businesses are investigating the use of 3-D spaces to hold virtual meetings and to replicate physical settings such as courts, medical centres or classrooms (Johnson, Levine & Smith, 2008).

Background relationships

Background relationships describe how human beings interact with a machine-world, that is, where the machine and the world have forged to create a technological cocoon (Figure 9).

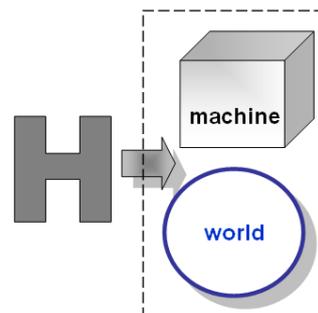


Figure 9: Background Relationships

To explain background relationships, Ihde (1979) used the example of a building in which the environment (air, heat, light and water) is controlled by technology. Like a fish unable to “see” water, people live “inside” the machine of the building but are oblivious to the technology. They do not see that “environments are not passive wrappings, but are, rather, active processes which are invisible” (McLuhan & Fiore, 1967, p. 68). An example of this invisibility is seen in Jahnke’s (2009, *this issue*) discussion forum where students and teachers became a part of a learning space parallel to the physical spaces of the classroom.

The notion of a technological cocoon became the plot device in the novel *Gridiron* (Kerr, 1995) in which ISAAC, an evil computer like Hal/HAL in *2001:A Space Odyssey* (Clarke, 1968), murders the occupants of a skyscraper by manipulating the environmental controls. When the machine-world moves online, it becomes the simulated reality popularly known as “cyberspace,” the “evocative and essentially meaningless” term coined by William Gibson (Neale, 2000). The term – and concept - first appeared in the short story, *Burning Chrome* (1982) but was popularised in *Neuromancer*, the cyberpunk novel where it was described as being:

Cyberspace. A consensual hallucination experienced daily by billions of legitimate operators, in every nation, by children being taught mathematical concepts... A graphic representation of data abstracted from banks of every computer in the human system. Unthinkable complexity. Lines of light ranged in the nonspace of the mind, clusters and constellations of data. Like city lights, receding.

(Gibson, 1984, p. 69)

Figure 10 shows how our background relationships in cyberspace radically concatenate the world into the machine and replaces human physical presence with totally virtual “people.” We are not simply nodes on a network in this relationship, we are inside a world created, sustained and constrained by the machine.

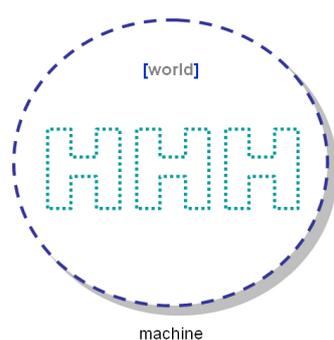


Figure 10: Background relationships with cyberspace

A background relationship was created in a student-led media centre (Tan, 2009) where senior secondary students were encouraged to collaborate in an online space. Criticism of the environment arose through parent and teacher misunderstanding and a perception that involvement would distract students from their studies. The online world was deemed to be at odds with the expected physical environment of the school.

Two loosely related and contentious examples are offered to explain background relationships in cyberspace. They are, respectively, from fiction and philosophy. Both are illustrations – as in the title of this paper – of being “there, yet not there.”

1. *The Matrix*, the classic film trilogy written and directed by Andy and Larry Wachowski, was first released in 1999. It portrayed the dystopic endpoint of unconstrained technological determinism, that is, where technology suppresses and supplants human agency in “determining” social and cultural values and practice and where the inevitable uses made of technology are determined by the technology itself (see Smith & Marx, 1984). The human beings in *The Matrix* had the option to live virtual existences - inside the computer-generated simulated reality of the matrix - blissfully unaware of their physical existence as power cells maintaining the machine. The protagonists in the story, however, were aware of their physical presence and moved – like the characters in *Neuromancer* - between the two worlds. This

movement was achieved by “plugging” or “jacking” in to the machine-world. The human blurs with the electrical and the physical becomes digital. Intriguingly, learning in *The Matrix* was analogous to downloading software. A scene in the first film shows Tank, the computer operator, downloading instructions on how to fly a helicopter to Trinity while she is inside the matrix. Learning in this machine-world is a matter of data transfer.

2. The Extropians are a group based in California who subscribe to a philosophy which pushes the limits of human potential. They advocate cryogenics as a way to extend human life and defeat entropy. More contentiously, they believe that to be liberated from “bondage to a mortal body” (Moravec, cited in Davis, 1998, p. 123), a person’s consciousness can be uploaded to a computer (Davis, 1998). This precept could have been taken directly from either *Neuromancer* or *The Matrix* and “hinge[s] on the fact that the human personality is, in essence, *information*” (Regis, cited in Davis, 1998, p. 122). Davis (1998) explained that:

Extropians drive an ontological wedge between our fallible and decaying bodies and the abstract process of cognition itself. On the one side lies our half-assed perceptual, emotional and logical wetware; on the other lies the conceptual perfection of disembodied intelligence, an informational array of codes, rules and algorithms they identify with the potentially immortal self and its infinite computational abilities. (p. 124)

We are yet to see how teaching and learning could move into a machine-world. This may be the endpoint of our current devolution to hybrid on- and offline learning experiences and our extension of intranets to extranets allowing continuous access to school and university networks. Will learning be downloaded? Will our brains be mere external hard drives?

We may, instead, become part of a background relationship in quieter ways. Using ICT as an adjunct to our lives has subliminally and inexorably moved us into a place where this relationship seems feasible. Having greater diffusion of technology and Internet connections through the community moved us to a world which will never be quite the same. Our learning has become more informal – if we need to know something, we go to a search engine or an online community and simply ask for help. Nevil Shute’s 1957 novel, *On the Beach*, famously ended with the words, “This is the way the world ends, not with a bang but a whimper.” There was no apocalypse and perhaps the physical world will succumb to a virtual one in a similarly unassuming way.

Conclusion

A disembodied voice on a phone was once thought to be “phony” but we now accept disembodied thoughts as reality. New realities have been created and we need to decide whether and how we will be “there, yet not there.” The examples in this paper have ranged from the real to the fanciful but all have a part to play in explaining our relationship with technology and the balance of agency we are afforded within that relationship. There are times where the technology determines what will happen and under what circumstances while there are others, when the technology behaves seamlessly, where human agency is ascendant.

As with the fictional characters in *The Matrix*, we do have choices about conducting our lives online. It would seem, however, that the opportunity for choice is diminishing as more of our interactions with the world are conducted in and through machine-worlds. What becomes essential is to understand our relationship with technology and if we do become “live nodes on a network,” to strive to make it on human rather than technological terms.

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