



COMMUNICATION-TECHNOLOGY, CYBERSPACE, SIMULATION AND HUMAN SUBJECTIVITY*

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Abstract

In this paper the use of the advanced communication-technology is scrutinized in the light of Sherry Turkle's work on communication and the uses of technology, as well as of commentaries regarding the growing popularity of social networking sites. Germain, Virilio and Baudrillard give greater insight on the question of the social consequences of technologically mediated experiences, among others of cyberspace as the new 'frontier', and focus on the alienating effects of cyberspace regarding the human lifeworld. Turkle's recent work regarding robotics similarly points to a fundamental shift in human attitudes towards 'embodied' artificial intelligence, especially concerning affectivity, which further marks a turning away from the complexity of human relationships in favour of supposedly uncomplicated 'machine relationships'. Derrida enables one to understand better the changing relation between humans and machines in terms of the re-configuration of human subjectivity. Together with Turkle's work in this domain, it points to a surprising 'reconfiguration' of human identity. Finally, Feenberg's retrospective on the fraught relations between humans and technology, as reflected in various fictional and theoretical works, as well as social developments, provides a suitable conclusion, given his affirmative remarks on the prospects of human autonomy in relation to the internet.

What are the communicational consequences of the widespread use of the internet, for example in the form of frequenting advanced technology-mediated, virtual communicational spaces like 'chatrooms', or social networking sites like Facebook, and of technological devices like mobile phones? Moreover, are there any such consequences that, given the central function of communication in human behaviour, are significant as far as the constitution of human subjectivity is concerned? These are questions that require urgent attention as humanity involves itself further with, and becomes more deeply enmeshed in a world that is increasingly, and ever more thoroughly technologically mediated and constructed.

Why should these developments raise concerns about their possible effects on human beings? Surely, one might argue, technology is just a set of 'tools' which are designed to make human existence more comfortable; any suggestion that it may 'affect' people in some or other 'significant' manner is merely an expression of technophobia of the kind that Feenberg (2004) points to as having been part of the 20th-century's response to the perceived dystopic implications of technology. That things are not that simple is suggested by Sherry Turkle (1995), where she reminds one of the ambivalent status of technology, more specifically the technologically mediated 'virtual' realm's capacity to fascinate, seduce and simultaneously enslave its adherents. Turkle alludes to a film (itself the result of advanced technology) that thematizes this power of technology, namely Wim Wenders's science-fiction film, *Until the end of the world*, which revolves around a scientist's invention of a device which transmutes human brain-activity into such enchanting images that people are able to perceive their innermost memories and fantasies in hypnotizingly vivid form¹ (Turkle 1995: 268):

However, the story soon turns dark. The images seduce. They are richer and more compelling than the real life around them. Wenders's characters fall in love with their dreams, become addicted to them. People wander about with blankets over their heads the better to see the monitors from which they cannot bear to be parted. They are imprisoned by the screens, imprisoned by the keys to their past that the screens seem to hold.

We, too, are vulnerable to using our screens in these ways. People can get lost in virtual worlds...Our experiences there are serious play.

Turkle's remarks are a salutary reminder that experiences mediated by technology are not innocuous; they have consequences regarding human behaviour – the film in question may be a work of fiction, but, like many similar works of science fiction (see Olivier 2002), it addresses issues that are rooted in contemporary reality, extending them just enough to speculate fictionally on possible paths of their further development and its consequences for humans.

One does not have to restrict oneself to science fiction when it comes to investigating the relationship between people and their technologies, however. Turkle has recently commented on current technology (such as the iPhone), as well as on the appearance and growth of virtual space phenomena such as Facebook, MySpace, LinkedIn and the like. Particularly germane to the progressively diversifying implications of 'entering' such technologically enabled 'spaces' when it comes to the issue of human subjectivity, is her remark, during an interview (Colbert 2011) on her latest book, *Alone together* (2010), that we 'have to put technology in its place', and that her research on Facebook has brought to light the phenomenon of adolescent users reaching a certain 'performance exhaustion'. Facebook users may not think of setting up and updating a Facebook profile as a 'performance', but it is clear in the interview with Colbert that Turkle has no doubt that it is one, and moreover, that it is a 'performance' with far-reaching consequences for individuals who use Facebook and similar sites.²

It is significant that a technophile like Turkle – who, not so long ago, saw in the internet a space of exploration, where we can discover new, better possibilities about ourselves (Turkle 1995: 262-263) – has more recently claimed that human beings have somehow overstepped the mark where technology is concerned. In the interview referred to, she insists that we have to rediscover the importance of giving other people our full attention when we are together, instead of busying ourselves with our iPhones (Colbert 2011). How must we understand this caveat? For an answer to this question one has to turn to *Alone together* (2010), but not before a brief glance at some of her previous work.

The Second Self: Computers and the Human Spirit (1984), is the book where Turkle first examined identity-transforming relations, but at the time it was still largely a matter of person and machine in an one-on-one relation. The internet – that virtually 'sublime',³ rapidly expanding system of networks – has changed all that. Its capacity to connect millions of people, via computers, in new, 'virtual' kinds of spaces, has altered

¹ Kathryn Bigelow's neo-noir, *Strange Days* (1995), too, thematizes the ambivalent kind of virtual reality-technology that enables people to experience sensations as if they are more real than the 'original' body-sensations 'recorded' by means of an outlawed device (which also enables 'playback' of the recorded sensations), with the predictable result that people get so addicted to it that their 'real' lives suffer.

² There are several angles from which one may approach the question of virtual sites like Facebook and MySpace, one of which is to consider it in relation to questions of (unexpected) 'panoptical control'. See in this regard Olivier 2010 and 2011.

³ I use the term 'sublime' advisedly here, given its philosophical meaning of 'that which cannot be adequately (re-)presented in imagination or perception, even if it can be thought'. The internet is just such a phenomenon. See Olivier (1998) in this regard.



the way in which people think, the form of communities, the character of their sexuality and the comparative complexity of their very identities (Turkle 1995: 49).

In *Life on the Screen: Identity in the age of the internet* (1995) Turkle explored the social and psychological effects of the internet on its users. One of her surprising discoveries was that many of those who frequent cyberspace seem to prize their cyber-identities above their 'normal', embodied selves. The use of the plural – 'cyber-identities' – is accurate here, because invariably the residents of cyberspace create several 'avatars' for themselves in the course of visiting MUDS (Multi-user domains), 'chatrooms', and nowadays multi-user interactive online games, such as World of Warcraft and the recently released Star Wars internet-connected game. These online games, with their vast numbers of players worldwide, are marvels of simulation, where variegated virtual spaces – land- and seascapes, interiors with astonishing detail – comprise the backdrop against which the player-initiated game-action unfolds. Clearly, given its seductive, often astonishing verisimilitude, such simulation is nothing inconsequential.

These considerations are given more depth by Turkle's work on simulation in *Simulation and its Discontents* (2009). She contrasts an older generation's skepticism about simulation and its promises – given their attachment to a less obviously mediated contact with the materials and objects of their fields of inquiry in architecture and physics – with the infatuation, on the part of the younger generation, with simulation in different fields. The computer was viewed by many of the older generation as a tool which, despite some useful computing functions, would lead students and scientists alike away from reality, to their detriment. Today, by contrast, architecture students find it hard to imagine how skyscrapers could have been designed in the 1950s without the use of a computer and the appropriate design software. Her research has led her to the point where she issues a warning, however (Turkle 2009: 7):

Immersed in simulation, we feel exhilarated by possibility. We speak of Bilbao [probably a reference to Frank Gehry's Bilbao Guggenheim, sometimes called the most complex building ever designed, with the help of computer-simulation; B.O.], of emerging cancer therapies, of the simulations that may help us address global climate change. But immersed in simulation, we are also vulnerable. Sometimes it can be hard to remember all that lies beyond it, or even acknowledge that everything is not captured in it. An older generation fears that younger scientists, engineers, and designers are 'drunk with code'. A younger generation scrambles to capture their mentors' tacit knowledge of buildings, bodies, and bombs. From both sides of a generational divide, there is anxiety that in simulation, something important slips away.

What is it that 'slips away'? One way of answering this is by considering that, in this age when sophisticated new technologies enable engineers, architects, medical doctors, physicists and molecular biologists to simulate virtually everything that their respective disciplines pertain to, from building designs to protein molecules, the 2011 Japanese tsunami and subsequent nuclear crisis at Fukushima came as a cruel reminder that there is, after all, something 'real' out there, at least in the sense of something that surpasses simulation. And this 'something' sometimes behaves in a manner that demonstrates in no uncertain terms its intransigence in the face of continued attempts to reduce it to just another object for manipulation on a computer screen. Like the events of September 11, 2001, it has dealt a blow to Baudrillard's (1996; see also Olivier 2002a) contention, that we live in an age of 'hyperreality', of 'simulacra' which have taken the place of the 'real'. But, given the media-saturated context of Baudrillard's ontological claims concerning the advent of 'hyperreality', where 'images without referents' are supposedly all there is, there was something almost unreal about seeing the television *images* of the wall of water flattening everything in its way on the North-East coast of Japan, almost as if one expects it to obey the logic of simulation, instead of the logic of reality. In the 1930s people ran out into the streets of New York in response to the realistic radio-dramatisation of HG Wells's *The War of the Worlds*, fully expecting to see alien ships in the streets. But it was only a simulation, at a time when the latter — simulation — was not yet pervasive in society. By contrast, with 9/11 and the recent tsunami in Japan, what people saw on television screens resembled the all-too-familiar simulation-images of scenes of destruction encountered in cinema and television, and yet, it turned out to be terrifyingly 'real', whatever one may understand by the latter term.⁴

The almost unimaginably destructive power of the tsunami that followed in the wake of a major earthquake off the coast of Japan is therefore, just like 9/11 before it, a very concrete reminder that it is indeed the case that something 'slips away' in simulation, and that this 'something' has very real effects on our embodied selves. No matter how much the smoothness of a simulated world may seduce one — for example the virtual world so enticingly depicted in *World of Warcraft* — it should not have the effect of making one ignore the claims of the gritty, real world. By all accounts, however, this is precisely what occurs in the case of many of the aficionados of *WoW*, who become so enamoured, or addicted, to the game that they tend to ignore the demands of the real world to the point of losing their jobs and families.⁵ To return to Turkle's reflections (2009) on simulation, she rephrases the architect, Louis Kahn's famous question, 'What does a brick want?' to read: 'What does simulation want?' and answers that, at one level, it wants 'immersion', which is a prerequisite for actualising its full potential. The downside of this is, as one can easily gather from the enthusiasm of students and practitioners of various stripes, that it is easy to fall in love with it, and difficult to take sufficient critical distance from it to be able to doubt it. As Turkle observes (2009: 7-8):

Simulation makes itself easy to love and difficult to doubt. It translates the concrete materials of science, engineering, and design into compelling virtual objects that engage the body as well as the mind ... Over time, it has become clear that this 'remediation', the move from physical to virtual manipulation, opens new possibilities for research, learning, and design creativity. It has also become clear that it can tempt its users into a lack of fealty to the real ... The more powerful our tools become, the harder it is to imagine the world without them.

And, one might add, the harder it is to deal with the shape and the aftermath of events that issue from forces that humanity cannot control. Perhaps because advanced technology has enabled humans to simulate and manipulate virtual entities, the sight of houses, cars and boats being swept away by an irresistible mass of water is even more disturbing than it might have been in the absence of such technology. In the process, however, the imagination is recalibrated, as it were, to regain a purchase on a reality that has become less compelling of late, as a result of the pervasiveness of simulation.

⁴ That the meaning of 'real' is no easy matter to decide, has been the case for the entire history of philosophy, from the Presocratics through Plato, Aristotle, Augustine, Descartes, Kant, Hegel, Husserl and Heidegger to Lacan and Derrida. It bears on the most fundamental ontological concerns of philosophical reflection. For an examination of this question in the context of 9/11, see Olivier (2007).

⁵ The documentary film, *Second Skin* (2008), provides a startling look into this world of virtual reality-addiction.



There are other, perhaps less obvious consequences of simulation, especially as one encounters it in cyberspace – that kind of space characteristically mediated by computer-technology. Gilbert Germain, in an essay titled 'The human condition in the age of technology' (2004), takes a serious look at the reflections of Jean Baudrillard and Paul Virilio on contemporary technology. Germain phrases their assessment of technology in a striking manner (2004: 161):

Baudrillard and Virilio concur that the story of technology is the story of humanity's decreasing dependence on the earth, and that this growing autonomy from the 'real world' amounts to a kind of self-alienation, as well. Despite differences in both approach and tone, their analyses corroborate the view that our drifting from the earth challenges a number of key assumptions regarding what it means to be human.

Condensing brutally, these French thinkers' work indicates that the attempt to 'escape from the earth' proceeds along two trajectories, to wit, a technological surpassing of the natural spatio-temporal limits of the earth through the construction of a separate (but corresponding) 'virtual reality' or 'cyberspace', and, on the other hand, an increasing integration of human beings with their (natural as well as technologically created) environment by way of what is known as 'smart' technologies.

Regarding the first axis of development, Germain (2004: 163) points out, it is less relevant to ask about the efficacy of communications via cyberspace – to be able to cope in today's world, one has to resort to it – than whether it is 'suitable' for embodied beings such as humans, that is, whether it perhaps affects human experience adversely in some way.

Turning to Baudrillard's notion of the 'obscene' as a description of the transformed state of the contemporary visual realm, Germain (2004: 163) explains this in terms of the 'mania for transparency and total illumination' evident in televisual imagery (think of the way 'Bluray' and 'plasma' television are promoted as providing clearer images than their respective predecessors). According to Baudrillard, this comes at the cost of a kind of 'distance' that the human body cannot bridge, in contrast to one's ability to cross distances separating one from things in everyday spatial reality, as both Heidegger (1978) and Merleau-Ponty (1962) have demonstrated.

Following these thinkers, Baudrillard suggests that the 'charm' of the real world lies precisely in the fact that the chasm between perceiver and perceived in human reality 'separates' as well as 'conjoins' them: real objects in space 'seduce' us because they resist being fully accessible to the eye – they have to be approached, circled, scrutinized and respected as possessing their own not-fully-transparent being (or what Heidegger called 'earth'). Unlike the objects of real perception, however, virtual imagery is not 'incomplete', but shows everything that is there to see. As Germain (2004: 163-164) remarks, if the odd virtual object exudes an air of mystery, it has been programmed to do so – it does not come with being an object in cyberspace, the way it accompanies all real objects as a possibility. Hence, for Baudrillard, virtual objects, like pornography, 'reveal too much', which is why they appear 'hyperreal' (more real than real). If anyone does not understand this, let them look at World of War cyberscapes – the penny is sure to drop. 'And', says Germain, 'like pornography, this surfeit of visibility captures and fascinates the eye'.

Paul Virilio, on Germain's (2004: 164-166) reading, concurs with Baudrillard as far as this is concerned, for instance where he alludes approvingly to Merleau-Ponty's phenomenological analysis of lived space, with its characteristic mutual implication of seer and seen, and the implication that the former is able to cross the gap separating her or him from the latter.

So where does technology come in? For Virilio, what he calls 'distance technologies' work against this 'natural' human spatial situatedness, as shown in his discussion of the experiences of astronauts who actually stepped on to the surface of the moon, which demonstrates that human perception is a strictly *earthly* perception. From Germain's account of Virilio's interpretation of the astronauts' experience on the moon, it appears that what the latter encountered there was 'an altogether different reality', which hinged crucially on the kind (that is, the 'quality') of light found on the moon.

Virilio gathered this from Buzz Aldrin's observation, that lunar light was 'weird', something he ascribed to solar light being unrefracted by an atmosphere, as it is on earth, and therefore striking the moon's surface somewhat like the rays from a very powerful spotlight. Not only was this especially noticeable when moving something from shadow into the sun's light on the moon – which Aldrin likened to entering 'another dimension', but the distinctively different quality of the light there also affected the astronauts' capacity for judging gradients and distances on the moon's surface. Hence, there was a marked contrast between the ease with which their bodies adjusted to the much lower (than on earth) lunar gravity and the difficulty they had adapting their vision to lunar light conditions.

It is not difficult to see why Virilio infers from this that human vision is not something that functions equally well, regardless of place, but that it is context-dependent. From Aldrin's account of his lunar experience it appears that vision, when displaced from its ordinary earthly circumstances of development, renders a completely different visual reality, and Germain suggests that the sudden change from shadow to disconcerting light, without the mitigating effect of penumbras, the way it happens on earth, may be described as the experience of a 'binary' or 'digital' reality.

Small wonder that, given the astronauts' account, Virilio regards lunar reality as 'a three-dimensional analogue of cyberspace'. For him being exposed to the sun's light on the moon is similar to the way objects are exposed to unrefracted light in the 'glow' of cyberspace, accessible through computer screens, and he compares us to astronauts. Both Baudrillard and Virilio therefore regard contemporary technology as contributing to the construction of an un-earthly, and therefore in-human reality. This is not all there is as far as the 'inhuman' is concerned in the contemporary world, however.

The notion of an 'inhuman' reality resonates with Sherry Turkle's account, in *Alone together* (2010), of her more recent investigations concerning advanced electronic communication as well as artificial intelligence, notably in the guise of robots, which were once the stuff of science fiction, but have become increasingly real in the developed world. As pointed out earlier, Turkle was extremely sanguine about the prospects and possibilities created by computers and the internet in the books preceding *Simulation and its discontents* (2009). With the advent of computer technology, the one-on-one relationship between human and intelligent machine gave rise to novel reflections on the nature of the self, a process that was taken to a different level with the invention of the internet and its impact on notions and experiences of social identity. Turkle traced these developments in *Computers and the Human Spirit* and *Life on the Screen*, respectively. In *Alone Together* (2010) she reports on her research of the last 15 years, which brings her investigations into the relationship between human and technology up to speed. In the latter book she has changed her tone to the point where she expresses grave misgivings about the current signs that people have become so attached to their electronic communication devices that, more and more, they neglect social relationships with other individuals in favour of interposing these gadgets – such as smart phones, laptops and iPads – between themselves and the people with whom they communicate in a decidedly 'mediated' manner. In other words, if one takes the latest developments in the area of electronic communication, internet activity and robotics, together with changing attitudes on the part of especially (but not exclusively) young users into consideration, a subtle shift has been taking place all around us.



She (Turkle 2010: 2, 26-32) observes that, when computers first appeared, children were intrigued by these 'intelligent thinking machines' to the point where they took such 'intelligence' to be the measure of a form of 'life'. More recently, however, with the arrival of robotic beings that can simulate feeling or affection, children have shifted their yardstick for 'life' from intelligence to affection or feeling. If the artificial creature appears to be capable of (simulated) feeling – especially in the sense of craving affection or 'love' from their human owners,⁶ and 'saying' so – then children take this as a sign of their status as living beings.

There is an even more telling sign that we have, or are in the process of crossing a certain threshold regarding our relationship with intelligent machines – what Turkle (2010: 9) calls the 'robotic moment'. It comes in, among other things, the shape of a young woman who intimates to Turkle (at a conference) that she is eagerly anticipating the day when a 'sophisticated Japanese robot', can replace her 'demanding' boyfriend, 'even one just exhibiting scripted behaviour'. Or in that of an elderly woman who depends upon her 'therapeutic robot', Paro – a 'sociable robot in the shape of a baby harp seal' (2010: 8), which responds with simulated affection to her petting – to provide consolation and companionship in the absence of her son, who has broken off ties with her. Turkle elaborates on the significance of these cases (2010: 9-10):

As I listen for what stands behind this [robotic] moment, I hear a certain fatigue with the difficulties of life with people. We insert robots into every narrative of human frailty. People make too many demands; robot demands would be of a more manageable sort. People disappoint; robots will not. When people talk about relationships with robots, they talk about cheating husbands, wives who fake orgasms, and children who take drugs. They talk about how hard it is to understand family and friends. I am at first surprised by these comments. Their clear intent is to bring people down a notch...The idea of sociable robots suggests that we might navigate intimacy by skirting it. People seem comforted by the belief that if we alienate or fail each other, robots will be there, programmed to provide simulations of love. Our population is aging; there will be robots to take care of us. Our children are neglected; robots will tend to them. We are too exhausted to deal with each other in adversity; robots will have the energy. Robots won't be judgmental.

It is not simply a matter of observing 'weirdly machine-friendly' behaviour of people with, or towards electronic communication devices, or with robots which take this a step further towards pseudo-affective behaviour, and of opinions expressed about such devices which are an indication of something qualitatively different, and perhaps somewhat disturbing, on the part of such individuals. From the perspective of those who understand that a relationship with another human being, no matter how difficult, cannot find a replacement in a 'pseudo-relationship' with a machine, it is an opportunity for self-knowledge (Turkle 2010: 29-30).

Writing in his diary in 1832, Ralph Waldo Emerson described 'dreams and beasts' as 'two keys by which we are to find out the secrets of our nature...They are our test objects'. If Emerson had lived today, he would have seen the sociable robot as our new test object. Poised in our perception between inanimate program and living creature, this new breed of robot provokes us to reflect on the difference between connection and relationship, involvement with an object and engagement with a subject. These robots are evocative: understanding how people think about them provides a view onto how we think about ourselves. When children talk about these robots, they move away from an earlier cohort's perception of computers as provocative curiosities to the idea that robots might be something to grow old with.

The most interesting area of Turkle's latest research is undoubtedly that of technological progress towards the construction of human simulations in the guise of robots, and the responses of people to this prospect. If there is reason for concern about the present generation's ability to maintain healthy social relationships, then her discoveries regarding the place and significance of (various types of) robots in the lives of children and the elderly are startling, to say the least. If Turkle is right, then attitudes that we take for granted concerning what is 'real' are receding, especially among young people. For example, there is a perceptible shift from valuing living beings above artificially constructed ones to its reverse, as indicated by many children's stated preference for intelligent robotic 'beings' as pets above real ones. Even the aged seem to value the predictable behaviour of robotic pets – which emit reassuring sounds when stroked, and don't die – above that of real pets.

Even more perplexing, when Turkle (2010: 4-8) expressed her doubts about the desirability of human-robot love relationships supplementing (if not replacing) familiar relationships between humans in an interview with a science journal reporter on the future of love and sexual relations between humans and robots, she was promptly accused of being in the same category as those people who still cannot countenance same-sex marriages. In other words, for this reporter – following David Levy in his book, *Love and Sex with Robots* – it was only a matter of time before we will be able to enter into intimate relationships with robots, and even...marry them if we so wished, and anyone who does not accept this, is a kind of 'specieist' bigot. The reporter evidently agreed wholeheartedly with Levy, who maintains that, although robots are very different ('other') from humans, this is an advantage, because they would be utterly dependable – unlike humans, they would not cheat, and they would teach humans things about friendship, love and sex that they could never imagine. This resonates with the young woman's sentiments about the preferability of a robot lover to a human.

Here I should quote Turkle, who articulates the reasons for her misgivings about these developments as follows (2010: 5-6):

I am a psychoanalytically trained psychologist. Both by temperament and profession, I place high value on relationships of intimacy and authenticity. Granting that an AI might develop its own origami of lovemaking positions, I am troubled by the idea of seeking intimacy with a machine that has no feelings, can have no feelings, and is really just a clever collection of 'as if' performances, behaving as if it cared, as if it understood us. Authenticity, for me, follows from the ability to put oneself in the place of another, to relate to the other because of a shared store of human experiences: we are born, have families, and know loss and the reality of death. A robot, however sophisticated, is patently out of this loop...The virtue of Levy's bold position is that it forces reflection: What kinds of relationships with robots are possible, or ethical? What does it mean to love a robot? As I read *Love and Sex*, my feelings on these matters were clear. A love relationship involves coming to savor the surprises and the rough patches of looking at the world from another's point of view, shaped by history, biology, trauma, and joy. Computers and robots do not have these experiences to

⁶ In science fiction this eventuality has been explored, too, for example in Proyas's *I, Robot* (2004) and Spielberg's *AI (Artificial Intelligence)* (2001). See Olivier (2008) for a psychoanalytical exploration of the significance of a robot craving human affection and displaying the (ethical) capacity for guilt.



share. We look at mass media and worry about our culture being intellectually 'dumbed down'. *Love and Sex* seems to celebrate an emotional dumbing down, a willful turning away from the complexities of human partnerships – the inauthentic as a new aesthetic.

Do Turkle's misgivings reflect those of most reflective people? My guess would be that they probably do, but I am also willing to bet that these are changing, and will change on a larger scale, as more robotic beings enter people's lives. Her experience (referred to earlier) with the elderly woman whose relationship with her son had been severed, and had acquired a robot 'pet', seems to me telling here. Recall that, while she was talking to Turkle, she was stroking the electronic device, fashioned like a harp seal, which looked at her and emitted a purring sound, to the evident reassurance of the woman. It was, to use Turkle's words, 'performing' a pre-programmed response to the way it was being handled.

This is the crucial thing, in my view: people judge others – not only robotic devices, as in this case, but other people (and animals) too – in terms of 'performance', always assuming that 'there is someone home', and in the vast majority of cases this is probably the case. But 'performance' is what matters, whether it is in the form of facial expressions, or laughter, or language – we do not have 'direct access' to anyone's inner feelings, although we always assume, by analogy with our own feelings, emotions, and anxieties, accompanying what we say or show, that this is the case. (This dilemma is related to the philosophical problem of solipsism, or monadism – based on the curious fact that, in a certain sense, no one can step outside of their own immediate experiences to validate the existence of others.) And because we are all dependent on linguistic behaviour or some other kind of 'performance' as affirmation of the presence of a conscious being commensurate with our own state of being, I am convinced that, when in the presence of a being which 'performs' in a way which resembles or imitates the behaviour of other human beings, most people would be quite happy to act 'as if' this being is a true human simulation (whether there is someone 'at home' or not).

What is in store for human beings in the future, in the light of these startling findings by Sherry Turkle? One thing seems certain: the way in which technological devices are judged is changing to the point where they are deemed worthy substitutes for other people in human relationships. And this gives reason for pause, because – as one can gather from Turkle's book – it does not leave one's sense of who you are, that is, your sense of identity, untouched. Just as the appearance of computers brought about reflection on artificial intelligence as opposed to human intelligence, so the emergence of intelligent, affective machines, or robots, is prompting humans to reflect once again on their own identities as humans (Turkle 2010: 1-2, 11-12, 169). She puts her own share in such reflection succinctly where she observes (2010: 11): '...it [her book] is about how we are changed as technology offers us substitutes for connecting with each other face-to-face'.

Just how far-reaching this 'reconfiguration' of identity in the course of changing relations with technological devices may be, is evident from Jacques Derrida's reading (1996: 13-20) of Freud's writings on the psychic consequences of primitive archiving devices. According to Derrida, Freud (perhaps unintentionally) was not simply, by considering these as various models of the psyche, engaged in judging the apparatus's efficacy in *representing* the psyche. (This specifically pertains to the so-called 'mystic pad', with its wax tablet and wax paper, covered by a celluloid sheet, on which children could write and clear the surface by lifting the sheet.) For Derrida, Freud was drawing attention to the different ways in which a variety of prosthetic technological devices *affect* the very structure of the psyche (Derrida 1996: 15). Consequently, Derrida suggests speculatively that certain 'geo-techno-logical shocks' might have had a revolutionary effect on the 'psychoanalytic archive' if, instead of the handwritten letters exchanged among Freud and his contemporaries, they had had access to devices such as faxes, tape recorders, printers, television, '...and above all E-mail' (p. 16).

Derrida's little 'retrospective science fiction', as he calls it, is radical in its implications. It bears on the very structure of the human psyche, and therefore on that of human identity, converging, therefore, with Sherry Turkle's insight into the relevance of 'relations with machines' for humans' self-understanding. In his words (Derrida 1996: 16-17):

It would have transformed this history [of psychoanalysis] from top to bottom and in the most initial inside of its production, in its very *events*. This is another way of saying that the archive, as printing, writing, prosthesis, or hypomnesic technique in general is not only the place for stocking and for conserving an archivable content of *the past* which would exist in any case, such as, without the archive, one still believes it was or will have been. No, the technical structure of the *archiving* archive also determines the structure of the *archivable* content even in its very coming into existence and in its relationship to the future. The archivization produces as much as it records the event.

What does it mean to claim that the 'state of the art' of communication technology determines the field of psychoanalysis? Derrida himself (1996: 18) answers this question succinctly where he says: '...what is no longer archived in the same way is no longer lived in the same way. Archivable meaning is also and in advance codetermined by the structure that archives'. In other words, in a specific sense the technological devices invented by humans (and therefore already reflecting a change in 'inventive' perception on the part of the inventors), dialectically shape the manner in which the users of these devices comprehend and act in the world. It therefore shapes the structural dynamics of culture and society, as well as the structure of human identity. There have probably been many investigations into the 'dialectical' changes wrought by the use of technological 'gadgets' in human behaviour (similar to Turkle's, discussed above), by sms-ing or 'texting' via mobile phones, not merely in the language of interpersonal communication, but in the very way that individuals think and speak (and act?), that is, in the linguistic constitution of their identities. In sum: communications technology, let alone 'interaction' (if one can call it that) with robots, does not leave human identity unaffected; on the contrary, it has far-reaching consequences for one's sense of identity, as Turkle affirms in her experience with gadget-dependent teenagers (2010: 176; see also Olivier 2011a).

The rapid development of technology, which has been considered in this paper, may be shown to have another side to it as well, however – one which may ultimately cause greater optimism regarding the future. In this regard, Andrew Feenberg (2004) takes stock of where humanity has come from, where we are now, and where we are heading in an increasingly technologized environment. He compares two important, but divergent 'utopian' novels, both of which represent imaginative responses to the state of the society that the writers were living in at the time of writing their respective books – Edward Bellamy's utopian sci-fi novel of 1888, *Looking Backward: 2000-1887*, and Aldous Huxley's dystopian novel, *Brave New World* of 1932.

The two novels depict widely divergent worlds. Bellamy's is set in a socialist utopia, which – judging by the book's best-selling status – embodied what Feenberg calls 'the hope in a rational society for several generations of readers'. Perhaps it was because Bellamy's utopia, while collectivist, displays a dual character: part of its imagined social structure is organized along scientific-technical lines, but the other part makes provision for individual personal fulfilment – essentially (something similar to what Marx envisioned), a society where technological advancement would create ample leisure time for individual 'Bildung' in the arts and sciences (something recently resurrected by Peter Joseph in the third *Zeitgeist* movie, *Moving Forward*). Feenberg remarks on the historical irony, that the kind of socialism (communism) that emerged in the Soviet Union only a generation after the appearance of Bellamy's novel, did not allow for this



benign combination of technological rationality and personal enrichment, where (in the novel) social collectivism is posited as the precondition of a high degree of individualising development. On the contrary, according to Feenberg (2004: 95): 'But this bipolarity is precisely what did not happen in the twentieth century under either socialism or capitalism. Instead, total rationalisation transformed the individuals into objects of technical control in every domain, and especially in everything touching on lifestyle and politics.'

On the other hand, Huxley's dystopic vision articulated the vision of a hyper-rationalised society where human beings are mere functionaries of a mechanised world. Instead of Bellamy and Marx's hope, that humans would be freed by a technology that they have mastered, Huxley's novel depicts a humanity that has become 'mere cogs in the machine'. Feenberg does not mention that Huxley's novel also contains interesting insights into eco-friendly approaches to 'waste disposal', as well as a powerful critique of such a thoroughgoing mechanisation of society via the eyes of those characters who prefer the discomfort of an 'outside' to instrumentalized society. This pessimistic conception is echoed by much of twentieth century thought on society and technology, from Max Weber to Martin Heidegger and Herbert Marcuse, except that in the latter's work — apart from an endorsement of Heidegger's view, that humans have become mere 'resources' for a technological mindset — there is also a hope for a new kind of 'technology of liberation', which would leave the integrity of humans and of nature intact. Feenberg regards this as still being a 'worthy', but 'receding' goal.

These 'dystopian philosophies of technology', Feenberg (2004: 97) points out, had a remarkable influence during the 60s and 70s, as shown in the technophobia of the 1960s, which was further fuelled by the war in Vietnam and the 'arrogance of technocracy'. What started out as a literary and theoretical critique of modernity, turned into a populist movement where technology became a political issue for the New Left. Feenberg (2004: 98) reminds his readers that the French worker and student rebellion of May 1968 was an 'antitechnocratic movement, as hostile to Soviet-style socialism as to advanced capitalism'. While the 1960s events were anti-technocratic, motivated by dystopian convictions, as the 20th century wore on, such dystopianism made way for a new kind of utopian thinking. Feenberg makes it clear that, in contrast to Bellamy and Huxley's hope (or despair) concerning the use of technology in their respective visions of the future, the new utopian projections of 'bioengineered superhumans' are not very credible, in so far as they generally amount to mere 'horrific speculation'.

These flimsy creations, however, have been counterbalanced by scholarship predicated on the irreversible immersion of humanity in a technological world, and focusing on the social implications of technology. Among such 'posthumanist' scholars Donna Haraway and Bruno Latour are probably best known for their enthusiastic embrace of a kind of 'cyborg' (cybernetic organism) future in which humans have accepted technology and promote its 'benign' development. Perspicaciously, Feenberg (2004: 99) notes that these writers' influence would not have been what it is today had it not been for the internet affording millions of people first-hand experience of technology-enabled social interaction. Remarkably, such networking has undermined dystopian sentiments, and not surprisingly, given the way its apparently 'non-hierarchical and liberating' interactivity counteracts the loss of individuality that occurred in the face of the earlier mass media of the 20th century. The internet represents a kind of technology that encourages initiative rather than being inimical to it, and has enabled even those who may feel otherwise alienated in large, impersonal cities, to participate in (virtual) social interaction.

Although he shows a thorough awareness of the social advantages of the 'information highway', however, Feenberg simultaneously cautions against the McLuhanesque expectation of a world-village utopia in which everyone will work from home, and do everything comprising social life from behind their computer, to boot — in a sense, just a more 'refined' version of humans being assimilated to machines. In an era when 'the public' has become so large and unwieldy that it cannot, as in former times, gather on the 'agora' or village square for participative political deliberation, the political potential of the internet lies, for him, in its capacity to contribute to the creation of a 'technical public sphere', however difficult that process might be. Importantly, the fact that the internet cannot be conclusively controlled by those in power, but provides ample opportunity for resistance against 'strategic' control, points, for Feenberg, to a step beyond dystopianism as well as posthumanist technophilia (2004: 104): 'But the dystopians did not anticipate that, once inside the machine, human beings would gain new powers they would use to change the system that dominates them. We can observe the faint beginnings of such a politics of technology today.'

I would suggest that this remark, against the backdrop of the useful overview regarding reflections on the history of technology which one gains here, points in a valuable direction as far as expectations concerning technology are concerned: one should not behave as if the internet is only a medium for virtual-reality experiences, information-transfer and largely vacuous social networking-interaction. It is potentially a space where autonomy may be cultivated in the interest of resisting technocracy in all its guises. This may be only one instance where such self-determination, as opposed to 'technological determination' has become perceptible, for the moment, but it points the way towards the conditions for the possibility of autonomy in relation to all technological devices — including robots. To be able to be autonomous, one has to cultivate what Heidegger (1977) thought of as an ambivalent attitude towards technology: a simultaneous 'Yes' and 'No'. Yes — to the convenience, comfort and pleasure that technology has brought into our lives (who would want to sacrifice the pleasure of listening to Beethoven on a CD-player?); No — to the tendency, always there because of our all-too-human propensity, to allow technological devices to inculcate heteronomy in us by conceiving of ourselves in their image (humans as thinking 'machines', and so on). Only in this way can one retain a truly human identity.

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