# Issues of embodiment and risk in online learning

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Counter positioning virtual learning environments with traditional face to face learning has given rise to comparisons in which cyberspace education is represented as inauthentic, as a relatively impoverished experience. Recent commentaries (for example Dreyfus, 2001) suggest that an explanatory factor in this perceived lack of intensity is the absence of risk, as experienced by both students and teachers. In this analysis, risk carries an affective intensity integral to embodiment, physical presence and the visibility of teacher and students. This intensity is seen as crucial to learner commitment, and other social and ethical engagement. The diminished possibility of such encounters online renders what one does in cyberspace as having no 'real' consequences. This paper critically examines such claims and the extent to which online environments are seen to minimise risk through mechanisms of control. The paper problematises such notions and examines the possibility that learning in cyberspace, rather than being comparatively risk free, contains risks and disquietudes that are qualitatively different. Similarly it cautions against what is termed here the 'incorporeal fallacy' of assuming that cyberlearning is, indeed, disembodied. Rather it argues the need to reconsider how notions of risk, the subjectivity of the learner and ideas of embodiment might all be differently constituted online.

**Keywords:** online learning, embodiment, risk, cyberspace, intensity, authenticity

## Introduction: Bodies and spaces

Any analysis of embodiment, risk or affective intensity within online learning draws us to consider what characterises, and what is entailed by participation within, different learning spaces. We need to understand how knowledge and learning are reconfigured when they occur in radically different forms of space. The modernist project of education can be associated to a great extent with the notion of enclosed space that serves to order and regulate meaning and activity (Lankshear et al., 1996; Deleuze, 1992). Within traditional higher education, since its medieval and Renaissance inceptions, such spaces of enclosure have been represented by the page, the book, the curriculum, the classroom, the discipline, the library and the university (Landow, 1997; Bayne and Land, 2000). The embodied learner and the embodied teacher might also each be represented (odd though it might seem initially to consider them in this fashion) as enclosed entities, insofar as they appear to be relatively clearly defined, with seemingly obvious physical boundaries. Cyberspace, on the other hand, complicates and disrupts such preconceptions and habituated practices. The hypertextual digital page is not confined by the boundaries of the printed page or book. The virtual university transgresses or ignores many of the privileges and access requirements of the familiar immured academy, and the web is no respecter of the boundaries of traditional disciplines. Moreover, as we shall see, the seemingly unified and centred subjectivity of the visible, embodied learner is rendered much more fluid within a digital environment (Turkle, 1996). Cyberspace remains difficult to define as a learning space. Is it a space or what architects and designers might refer to as a 'non-space'? Usher and Edwards (2000) see it as 'neither here nor there but both here and there'. In their view it is "a (dis)location - something that is both positioned and not positioned, (dis)placed but not re-placed, a diaspora space of hybridity and flows where one and many locations are simultaneously possible" (p.3). Their metaphor of dispersal is reflected in the metaphors of other commentators, many of which emphasise movement and fissure. Given this radical uncertainty within the cyber space and its radical difference from traditional, more familiar environments, it is not surprising that anxiety emerges about the value and authenticity of the student's learning experience. One online learner describes it as a 'cold medium', pointing out that 'Unlike face to face communication you get no instant feedback. You don't know how people responded to your comments; they just go out into silence. This feels isolating and unnerving. It is not warm and supportive' (Wegerif, 1998, p.1).

Accompanying the sense of anxiety here is a strong sense of loss – loss of contact ('feedback', 'silence'), loss of companionship and community ('isolating', 'it is not warm and supportive'), loss of confidence

('unnerving') and loss of certainty ('you don't know'). The metaphors of cold and silence suggest a sense of sterility – that what are missing are the warm bodies of fellow learners. The affective domain is highlighted here as an issue of importance and concern within the cyber environment. Tabbi (1997) also emphasises this seeming disembodiment, disembeddedness and decontextualisation of the cyber environment. It has no bodies, no history, no location. A further perceived loss is that of veracity. Feenberg (1989) raises the issue of physical presence as a supposed guarantor of veracity:

> In our culture the face to face encounter is the ideal paradigm of the meeting of minds. Communication seems most complete and successful where the person is physically present 'in' the message. This physical presence is supposed to be the guarantor of authenticity: you can look your interlocutor in the eye and search for tacit signs of truthfulness or falsehood, where context and tone permit a subtler interpretation of the spoken word (p.22).

Veracity appears to depend on a notion of 'depth' wherein truth dwells. This would seem to be a preoccupation of modernism. We recall, for example, Freudian notions of the subconscious, the Marxist emphasis on base and superstructure, deep structures within Chomskyan transformative grammar, and, nearer to home, the privileging of 'deep' over 'surface' learning within phenomenographic representations of student learning. Conversely experience of cyberspace environments has characteristically been associated with a sense of superficiality. Turkle (1996) talks of 'life on the screen', Johnson-Eilola (1998) of 'living on the surface'. This sense of a loss of veracity in cyberenvironments seems to arise from the fluidity and dispersal of identities which seem now to be re-located within language and text, where the online learner encounters 'a fluid, flowing space where users experiment with multiple subjectivities; where stories lose concrete beginnings, middles and ends; where the rules of games shift, are overwritten, and sometimes even disappear' (Johnson-Eilola, 1998: 186, p.?). This leads to a sense of 'disquietude' in online environments (Bayne and Land, 2001) which reflects that reported as a more general condition of postmodernity, such as 'boundariless anxiety' (Bergquist, 1995) or 'ontological insecurity' (Giddens, 1991).

The notion that the visibility of the learner or teacher serves as an anchor of truthfulness or veracity ('you can look your interlocutor in the eye') might lead one to conclude that authenticity is dependent upon physical embodiment. It would follow from this line of reasoning, that lack of embodiment renders the cyber space, which is unquestionably a simulated environment, a 'false' environment. 'One is no longer in front of the mirror; one is in the screen, which is entirely different. One finds oneself in a problematic universe, one hides in the network, that is, one is no longer anywhere'. (Baudrillard, quoted in Thibault, 1996, p.3)

It would become, in this view, what Baudrillard has termed a simulacrum, consisting of signification only, without any meaningful reality. It is tempting to pursue this analogy and mischievously envisage cyberspace education, in a time of massification of higher education with its severely reduced resourcing and rapidly expanding student numbers, as the pedagogic equivalent of Baudrillard's Disneyland, that is, a representation of reality (ideology) which conceals the fact that the real is no longer real, and thus serves to save the reality principle.

> Disneyland exists in order to hide that it is the 'real' country, all of 'real' America that is Disneyland (a bit like prisons are there to hide that it is the social in its entirety, in its banal omnipresence, that is carceral). Disneyland is presented as imaginary in order to make us believe that the rest is real, whereas all of Los Angeles and the America that surrounds it are no longer real, but belong to the hyperreal order and to the order of simulation. (Baudrillard, 1994, p. 6)

The world of Disney, argues Baudrillard, offers a form of childishness which serves to foster a sense that adulthood resides elsewhere, outside the walls of the theme park, in the 'real' world. In this way it occludes the recognition that childishness and sentimentality are in Baudrillards' view, everywhere, and that by removing the walls of the theme park we would not discern any difference between the real and the simulated. In a similar way cyberspace education, in this view, becomes an 'antipedagogy', a phantom that serves as 'the proof of pedagogy' (Baudrillard, quoted in Thibault, 1996, p.19). The antipedagogy here reassures us that what is seen as a diminished experience on offer in the simulated world of online learning is unlike learning in the traditional 'real' world of higher education. It serves to conceal the impoverished, underfunded and under-resourced condition of learning in a majority of face to face higher education institutions.

## The incorporeal fallacy

However, though we might engage to an extent with such notions, Baudrillard's assertions elsewhere (Baudrillard, quoted in Denzin, 1991: 32-3) that within the simulacrum all bodies, through technological transformation, are destined eventually to undergo their own repetition, and that this will constitute the end of the body and its history, are not helpful in any serious discussion of embodiment and the experience of embodied learners in cyberspace. Indeed one can only conclude that the position of Baudrillard, and other commentators who envisage the death of the body within cyberspace and relegate it to 'meatspace' or similar, is a return to a position of Cartesian dualism. It posits a dissociation of mind and body in which the learner's subjectivity in cyberspace will move out of the corporeal, and into a virtual, simulated realm, a state of immaterial being constituted entirely through image and the symbolic. Cyberspace, by this reckoning, comes to be seen as a disembodied space, a space in which the body is lost, abandoned or, as in the process grotesquely dramatised in E.M Forster's famous science fiction short story *The Machine Stops*, becomes atrophied. A similar accusation might be levelled against post-structuralist analysis, which, in its privileging of the textual, despite its ever vigilant wariness of marginalising oppositions, is perhaps in danger of setting up a new form of Cartesian dualism in pitting the discursive against the material. It could be seen as reducing the body to a text, with language interpreted as something totally independent of embodiment (Burkitt, 1999). Despite its often radical explanatory power in other contexts, post-structuralism, it would appear, offers no adequate account of embodiment. A more helpful direction would seem to be pointed up by Stone:

> It is important to remember that virtual community originates in, and must return to, the physical. No refigured virtual body, no matter how beautiful, will slow the death of a cyberpunk with AIDS. Even in the age of the technosocial subject, life is lived through bodies. (Stone, 1991, p.113)

The notion that we might experience learning within a cyberspace environment as an exercise of disembodied mind, as a form of subjectivity constituted entirely through text and discourse – attractive to contemplate as that might or might not be – is probably to indulge in what we might term the 'incorporeal fallacy'. From an anti-Cartesian perspective Burkitt (1999, p.147) has argued persuasively that there can be no such thing as the 'mind' considered as something separate from the body and its 'spatio-temporally located practices'. Whilst we should remain wary of succumbing to any essentialist view or any form of corporeal determinism, it does seem difficult to contemplate any form of knowledge that is not both embodied and socially and historically situated. As Burkitt has pointed out 'a disembodied view of the world is a view from nowhere and is therefore impossible for humans to attain' (Burkitt, 1999, p.74). Human beings, he argues, are never able to understand the world from 'some passive and disinterested spot' but only ever from within 'an active and related perspective.' Such a perspective will involve the interaction of subjects with other subjects, objects, artefacts and symbols, and this can only ever be achieved through bodily agency. Even in cyberspace environments, as Stone has famously remarked, there is always 'a body attached'. Cyberspace could well be a non-space, but the subjects who inhabit it always remain embodied.

The phenomenologist Merleau-Ponty argues that as embodied beings we have a need more basic even than that of safety, which is to get some kind of optimal 'grip' on the world. When we look at something we tend unconsciously to find the optimal position from which to perceive both the totality of the object and its component parts (Merleau-Ponty, cited in Dreyfus, 2001: 56). Similarly when we take hold of something we seek, in grasping it, to obtain the best grip. He speaks of the idea of 'sentience' in order to convey the body's sensitive and responsive relation to the environment in which it finds itself. It entails a constant readiness to cope with things in general that goes beyond our readiness to cope with any specific thing and it makes the world directly present to us. In effect our sense of self is based on the 'feel' we have of our own bodies and the ways they position us in the world (Merleau-Ponty, 1979: 250).

An important dimension of Merleau-Ponty's anti-Cartesian stance is, according to Burkitt (1999, p.76) its implication that thought is not structured by any form of 'mind' that remains dissociated from the body, 'whether this is a set of cognitive structures or categories, or innate ideas'. Instead, suggests Burkitt, it is 'acquired bodily actions' or habits that make thought possible, such as learning to become proficient in playing a musical instrument, learning to drive a car or compose text on a computer. This notion of learned predispositions is similar to the habituated embodied practices which constitute Bourdieu's 'habitus' (Bourdieu, 1977) or what Hayles refers to as 'incorporated practices' (Hayles, 1999).

## Learning, embodiment and risk

In his book on internet learning Dreyfus (2001) draws on the reasoning of Merleau-Ponty to make somewhat large claims about presence and stability. He claims that our embodied experience gives us a sense of 'the direct presence of things' and a sense of the stable organisation of the world. Hayles (1999, p.201) draws attention to what she sees as significant aspects of Dreyfus' notion of embodied learning. 'For Dreyfus', she argues, 'embodiment means that humans have available to them a mode of learning, and hence of intellection, different from that deriving from cogitation alone'. Hayles is interested in the way that embodiment emphasises the importance of context to human cognition, thus reversing 'the decontextualisation that information underwent when it lost its body' in Cartesian dualism. As regards education in cyberspace, however, Dreyfus asserts conversely that in 'telepresence', to understand the world sufficiently well for sophisticated learning to take place, 'one would not only have to be able to get a grip on things at a distance; one would need to have a sense of the context as soliciting a constant readiness to get a grip on whatever comes along' (Dreyfus, 2001, p.57). This conclusion follows his earlier argument that:

> … perception is motivated by the indeterminacy of experience and our perceptual skills serve to make determinable objects sufficiently determinate for us to get an optimal grip on them. Moreover, we wouldn't want to evolve beyond the tendency of our bodies to move so as to get a grip on the world since this tendency is what leads us to organise our experience into the experience of stable objects in the first place. Without our constant sense of the uncertainty and instability of our world and our constant moving to overcome it, we would have no stable world at all (p.56).

In the light of this sense of the uncertainty and instability of the world, Dreyfus draws attention to the importance of risk and vulnerability in the learning and teaching process. This gives the learning and teaching transaction an authenticity. He argues that in face to face environments 'there is the possibility of taking the risk of proposing and defending an idea and finding out whether it fails or flies. If each student is at home in front of his or her terminal, there is no place for such risky involvement' (p.39) What is required for this authenticating risk function to operate are the visible and present bodies of teachers and learners. Otherwise there is no opportunity for vulnerability. 'There is no class before which the student can shine and also risk making a fool of himself' (39).

A feature, and probably part of the allure, of simulacra such as theme parks, computerised games, packaged holidays, televised sport, fast food restaurants, is their apparent minimisation of risk through standardised, routinised and predictable procedures. Considered from this perspective there is an extent to which online learning environments might be seen to minimise risk through mechanisms of control. Such environments offer asynchronous time for reflection, obviating the need for instant responses or decisions. They provide the possibility of relative anonymity, minimising visible traces of representation relating to ethnicity, gender, age, disability, culture, appearance and style. There is an apparent absence of the requirement for the teacher to provide a charismatic 'performance' (possibly accounting for why some teachers are rated by students more highly in online environments than in face to face environments). There is controlled access to the space through user authentication and the option of utilising sophisticated surveillance and tracking tools. There is the compartmentalisation of activity to render the potential boundarilessness of the cyber environment less threatening, more familiar and ordered.

In Dreyfus' analysis, risk carries an affective intensity which is integral to embodiment and *presence*. 'The professor's approving or disapproving response might carry some emotional weight,' adds Dreyfus, 'but it would be much less intimidating to offer a comment and get a reaction from the professor if one had never met the professor and was not in her presence' (p.39). Online learning's 'limitations where embodiment is concerned', contends Dreyfus, (namely the absence of face to face learning), can lead to a stunting of students' learning, curtailing their development to a stage merely of 'competence', as opposed to 'proficiency' or 'expertise'. Online learning might be useful in supplying the facts and rules, as well as the drill and practice required for the novice, but to acquire expertise necessarily requires 'the involvement and risk that come from making interpretations that can be mistaken and learning from one's mistakes' (91). Such involvement is not available 'if one is just sitting alone in front of one's computer screen looking at a lecture downloaded from the Web' (p.91). Bodily presence and immersion in context are deemed essential to the acquisition of proficiency in many areas of human agency – 'distance-apprenticeship is an oxymoron' (p.69). Embodiment, including our emotions, plays a crucial role for Dreyfus in 'our being able to make sense of things so as to see what is relevant, our ability to let things

matter to us and so to acquire skills, our sense of the reality of things, our trust in other people' (p.90). Only in a classroom where the teacher and learner sense that they are taking risks in each other's presence, and each can count on criticism from the other, are the conditions present that promote acquiring proficiency, and only by acting in the real world can one acquire expertise. As for the apprenticeship necessary to becoming a master, it is only possible where the learner sees the day to day responses of a master and learns to imitate her style (p.91).

Perhaps most important for Dreyfus is the capacity that embodiment gives us for making 'the unconditional commitments that give meaning to our lives':

> It would be a serious mistake to think we could do without these embodied capacities – to rejoice that the World Wide Web offers us the chance to become more and more disembodied, detached ubiquitous minds leaving our situated, vulnerable bodies behind. (p.90)

In this Dreyfus is influenced by Kierkegaardian philosophy. Applying Kierkegaard's earlier critique of the press media of his day, he maintains that, while the Internet does not prohibit 'unconditional commitments', it actually undermines them by re-presenting life as a risk free game, or, in Kierkegaard's words, 'it transforms the task itself into a an unreal feat of artifice and reality into a theatre' (Kierkegaard, quoted in Dreyfus, 2001, p.88). No doubt our imaginations can be engaged, as they are in playing electronic games or watching cinema, and our responses might be sharpened for real world encounters. But for Dreyfus this does not constitute an alternate form of embodiment. For him cyber activity cannot simulate serious commitments in the real world. Discussing Rheingold's work on virtual communities (Rheingold, 2000) he concludes that involvement in virtual communities is not a threat to political or civic engagement in one's real community but 'it becomes harmful if, as is often the case, its risk free nature makes it more attractive than the dangerous real world'. (Dreyfus, 2001, p.105). 'Like a simulator' he suggests, 'the Net manages to capture everything but the risk' (p.88). In Kierkegaardian terms cyberlearning becomes categorised as an essentially 'aesthetic sphere,' with its risk free mimicry of serious matters within the physical world. This minimises ethical engagement and the possibility of commitment insofar as what one does in cyberspace has no real or long term consequences. The risks are only imaginary, unlike what Kierkegaard terms 'the danger and life's stern judgment' (cited in Dreyfus, 2001, p.88).

What is puzzling about Dreyfus' analysis is how it seems to take no cognisance of the many risks to identity, confidence, emotional security and esteem that are encountered on a daily basis by participants within online learning environments. Apart from the 'boundariless anxiety' and 'disquietude' mentioned earlier, one thinks immediately (particularly if one has been on the receiving end of it) of the disconcerting and often humiliating effects of 'flaming' behaviours. Dreyfus, as we have seen, advocates the value in face to face environments of 'taking the risk of proposing and defending an idea and finding out whether it fails or flies.' In his view the student 'at home in front of his or her terminal' has no opportunity for 'such risky involvement' (39). Any user of an online environment, even experienced and battle hardened academics, surely could sympathise with the trepidation of a new, possibly shy student, being required to post up their response to a (possibly international) discussion group, in the knowledge, moreover, that their tentative contribution is likely to remain there, with all its feared inadequacies, for a considerable period, unlike the ephemeral and evanescent tutorial remark that is likely to be forgotten and beyond recall even before the students leave the room.

There is, too, the uncertainty of others' behaviour in an environment where bodies are not visible, and where the nuanced meanings normally derived from mannerisms, gestures, expressions and other visual and auditory cues are not available and the potential for misunderstandings or misreadings of others' responses makes participation difficult, if not hazardous, on occasion. This potential for increased apprehension applies not just to online learners but also to their teachers who have to establish a sense of presence (and often authority) in an environment where their own identity and that of their students has to be established and interpreted entirely through language, through a written medium. The role of online moderator entails a quite different activity system from that of the traditional classroom tutor. Whereas the engagement of a 'silent' or shy student in a face to face environment might be accomplished through a repertoire of subtle interventions, most of these are likely to draw on embodied practices involving physical movement, facial expression, vocal emphasis or intonation, none of which are available to the online moderator. Coping with the online equivalent – the lurker – becomes a quite different issue to address, which may, if not sensitively handled, lead to quite clumsy or heavy handed interventions. The

issues that arise from the practice of online moderation, and the re-aligned, often levelled, power relations between teacher and learners, point to a radically reconstituted form of intersubjectivity online. There is too, a re-adjustment of the sense of how one is positioned in relation to artefacts and spaces in the ways that online learners must orient themselves towards, and navigate through, the complex labyrinth of information, materials and communities which constitute the hypertextual world of cyberspace, separating, as they go, pattern from randomness (Hayles, 1999). As Jameson has warned, language itself can become a threat when it ceases to be a tool for action and its rapid proliferation leads to stultification and the failure to discriminate meaning from noise. 'No society' he points out, 'has ever been quite so mystified in quite so many ways as our own, saturated as it is with messages and information, the very vehicle of mystification' (Jameson, 1981: 60-61).

We should not forget either, the simple but dramatic risk of the complete failure of a network. In cyberspace education of course, when the network goes down, the university disappears. Imagine the consequences of this, for both teacher and learners, when the network fails during formal examinations using online assessment. This has been an unfortunate occurrence in more than one university in which I have worked.

On the other hand, the capacity of online environments to counter or minimise risk yields manifold learning benefits which Dreyfus does not acknowledge. Indeed, for some, exposing oneself to the possibility of face to face risk in order to gain trust and authenticity might be deemed a privileged indulgence (Burbules, 2002, p.391). As du Preez (1999), writing from within a South African context, points out, certain groups of learners might feel vulnerable enough in physical environments to welcome the comparative safety that is on offer through the anonymity of cyberspace.

> If learners are restricted by their gender roles in real life, it may well be that they would gain from the possibility to enter into a group discussion as another gender. I am particularly thinking of rural women and women of colour. They may find it valuable to enter discussion forums as white men for instance, not that the gender constructions of white men are in all cases advantageous or emancipatory. In some cases one would obviously prefer to speak from your real life gender (du Preez, 1999, p.6).

The comparative freedom that online learning offers from the judgemental gaze of others would also be available for students with specific disabilities, not to mention the increased access to learning that the technology provides for such groups. Moreover newly emerging classroom communication systems (CRS) such as 'Discourse' technology, and hand held personal response systems (PRS) such as 'eInstruction', introduce the possibility of online anonymity within traditional face to face learning environments. Such systems are bi-directional, operate between people that are linked within a face to face environment, and allow them to ask questions, including open ended questions, anonymously and 'on the fly'. (McCabe and Lucas, 2003). Users report the significant advantages of students feeling permission to reveal their lack of knowledge or anxiety without penalty or humiliation. Teachers also comment on the invaluable diagnostic feedback this can produce in terms of student understanding, allowing them to adjust the pace of the lesson or pause and revisit issues already covered if real time online student feedback suggests that this is necessary. In certain instances such online anonymity has proved crucially important, revealing, for example, dangerous misconceptions on the part of medical students in relation to potentially lethal interventions involving adrenalin injections. Such erroneous knowledge seems far less likely to be revealed in face to face environments. For Dreyfus (2001, p.69) 'distance-apprenticeship' may well remain 'an oxymoron'. Not so, it would appear, for medical apprenticeship, where the risk of humiliation and loss of face in traditional environments is sometimes deemed too high.

It is difficult not to conclude that Dreyfus, too, succumbs to the incorporeal fallacy. The fallacy, with its central implication that reality or true knowledge resides in embodied presence, might be explained in Derridean terms as a logocentric practice that privileges speech over the essentially 'written' nature of cyberspace. Seen in this way, in terms of what Derrida refers to as 'the metaphysics of presence,' live speech (as opposed to synthesised speech) appears to emanate directly from its 'author', and to be self evidently dependent upon the latter's embodied presence. Furthermore *presence*, in the sense of physical presence, requires synchronicity. Writing, by definition asynchronous in nature, is traditionally seen as being a step removed from the 'author' in a way that speech is not. From a logocentric perspective *a*synchronous activity, which characterises much of cyberspace education, undermines such residing 'truth' at a glance. Moreover most communication across cyber environments tends to be heavily

mediated through both written communication and computer technology, though this is masked through metaphors of chatting, cafés, and forums, suggesting presence. Face to face communication, in comparison, appears deceptively to be unmediated. 'It is of course no such thing, and is as mediated, though by no means as self evidently, through linguistic signs and signifiers that are as independent of the self and as dependent on a linguistic system and interpretation as any written text' (Land and Bayne, 1999, p.739). Nonetheless it is not difficult to see how asynchronous text based conferencing can become identified in the minds of learners with inauthenticity.

As a counter argument to stances that rest on the incorporeal fallacy, du Preez (1999:) reminds us that cyberbodies not only remain vulnerable in cyberspace environments but that they remain legally constituted:

> … the fact that cases of Net rape have occurred has interesting implications for the debate on the state of the bio-body on the Internet. Firstly it indicates that our bodies form part of the equation in cyberspace and secondly it indicates that cyberspace also has legal implications, because we still constitute bodies while in cyberspace. Legal implications have physical implications. (p.6)

Finally it is worth pondering how the emergent technologies mentioned earlier, such as personal response systems (PRS) and classroom communication systems (CCS) like 'Discourse', will complicate and disrupt current understandings of presence, visibility and embodiment. By allowing physically 'present', embodied learners to interact with the teacher and other learners anonymously if they so wish, the boundaries between face to face and virtual become blurred. Learners are simultaneously visible and invisible, physically embodied and virtually embodied, identified and anonymous. Whilst the teacher is talking learners may be simultaneously communicating with each other in a separate space to pass opinions on the teacher's ideas – a phenomenon coming to be known as 'backchannelling' – or posting up responses or questions to the screen as she talks. The modernist spaces of enclosure, with their seemingly stable boundaries between subjects, bodies and reality, become, in this instance, less stable and more permeable.

## Conclusion: Towards a relational understanding of embodiment

Hayles (1999, p.196) makes a helpful distinction for our purposes between the normative physical body and the notion of embodiment. The latter can be seen as specific articulations of the body with 'place, time, physiology and culture' (p.196) permitting what Poster (2001a, p.111) has called 'new assemblages of self constitution'. Burkitt (1999), drawing on Ilyenkov's earlier dialectical notions of 'radical realism' (Ilyenkov, 1977), advocates what he calls 'a relational approach' to embodiment. This stresses the ways in which we become constituted within and reconstituted by forms of embodiment and the various articulations they involve with other subjects, objects and artefacts, much in the way that users of language are constituted through the language but also change the language by using it. We are constituted by pre-existing forms of embodiment but our creation and subsequent use of new artefacts *through* our existing embodiment in turn transform that embodiment and reconstitute our identity, which always remains embodied. This relational view would seem to share many of the characteristics of actor-network theory. From such a perspective we can see how new technologies and artefacts (which would include language itself) have always reconstituted the embodiment of learners. We can see how the development of written culture created, for example, dyslexic learners, or the way that online environments created the 'lurkers' mentioned earlier. Du Preez (1999) has commented on the ways in which hypertextual environments may well encourage new forms of literacy in which learners make intuitive connective 'jumps' to other ideas or information, permitting 'radical interactive and nonlinear possibilities'. She indicates how this reflects the differently embodied nature of learners online:

> When constructing an online course, the nature of hypertext has to be accounted for. The fact that its results are immediate and that it requires a 'new literacy' so to speak, will also have to be kept in mind. Hypertext leads to different embodiment styles online. The immediacy of hypertext will be reflected through a different embodiment style. The fact that hypertext mimics human thinking patterns could indicate that learners find it easier to learn and make associations because hypertext works the same way as our minds apparently do (p.7).

There is perhaps a hint of essentialist thinking or cognitive determinism in the final sentence, but the point that different technological contextualisations lead to our being differently embodied is well made. Citing the work of Heim (1993) she draws attention to the quite different forms of embodiment that are involved when we are writing on a page, holding a pen, and when we are composing on screen, directing the mouse in a 'cut and paste' mindset. These differences go well beyond bodily actions. Writing 'on screen' entails a sense, which is not replicable offline, of the virtual desktop, of texts sliding over each other in a cyber space or being deposited and recovered from deeper within the electronic space. Heim (1993) prefers to differentiate between writing on paper and 'compiling' on screen:

> Digital writing is almost frictionless. You formulate thoughts directly on screen ... But the honeymoon fades, and the dark side of computing descends upon you. The romance with computers shows its pathological aspects: mindless productivity and increased stress ... You no longer formulate thoughts carefully before beginning to write. You think on the screen. You edit more aggressively as you write ... Possible changes occur to you rapidly and frequently, so that a leaning tower of printouts stretches from the wastebasket to the heights of perfection – almost. (p.5)

We might also contrast the differently embodied experiences of online and offline readers. We have already touched on the potentially 'saturated' online reader skipping and clicking down the endless garden of forking paths encountering ever accumulating sources of information, skimming the surface of many different texts and probably not engaging in the reading of substantial blocks of texts, which seem to belong to a different activity system. How different from the embodied state of the offline reader holding the bound book. Birkets (1995, cited in du Preez), a renowned antagonist of the digital age, in celebrating the sensuousness of the physical book implies more or less that it is the actual form of embodiment involved in book reading that is of most significance when he asserts that 'I value the state a book puts me in more than I value the specific contents' (Birkets, 1995, p.15). In this we see a clear example of what Burkitt (1999) emphasises as the relational nature between embodiment, artefact, practice and subjectivity.

Finally, there remains an ethical issue in terms of transfigured personal relations in cyberspace environments. Where bodies are no longer visibly present, do such differently embodied forms of online experience, such 'assemblages of self constitution', entail a loss of *veracity*, insofar as one appears to be able to re-invent and re-present oneself as one likes? The most candid response to this issue seems to be that of Poster (2001b), who argues that such fluidity only serves to raise the question of veracity in any social encounter. Perhaps we should conclude with recognition of what he advocates, that in a reconfigured world, reconfigured rules will inevitably apply.

> It brings into question the fact that there is always a question of veracity in personal relations, that we never really know in truth about the other – perhaps not even about ourselves – but that in the practice of communication on the internet relations are established and continued and within the terms of those relations there is a different kind of veracity and unveracity, there is a different kind of responsibility and irresponsibility, a different kind of truth about oneself and untruth about oneself from that that is encountered in face to face interactions. (Poster, 2001b, p.148)

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