The ethics of virtual reality: the digital and its predecessors

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The creation of virtual reality environments has become one of the major celebrations, attractions and causes of concern in the development and application of digital technologies today. Because of their profound social, economic and humanistic implications, the development and applications of technological virtual realities are urgent and vital areas for ethical reflection and debate. Doing so, however, requires clarifying not just what is meant by 'virtual reality', but also locating digital virtual realities within the context of the place of virtual reality in human experience and historical instances of differently mediated virtual realities.

The term 'virtual reality' is often used quite capriciously today to refer to a range of technological forms and communication contexts and practices. Frequently the term 'virtual' is used to apply to anything that is not physical. The term 'virtual communication' for instance, is often used for computer mediated communication on the basis that it is not face-to-face.

This capricious use can be confusing, leading to a tendency to consider virtual reality from within a frame of unreality, or illusion in effect. In this context, virtual reality is often seen as pseudo reality, a deception that mimics the real – in Baudrillard's terms a simulation, a substitution of the false for the real. This approach suggests that the major issues arising in any consideration of virtual reality therefore are questions we would ask of illusion or counterfeiting. The nature and relevance of virtual reality is much more complex than that.

It's inadequate to see virtual reality as unreality. The term itself connotes the virtual as a form, one of the forms, of reality. We talk of virtual reality, not unreal virtuality. Webster's Dictionary defines the virtual as 'Being in essence or effect, not in fact.' John Wood describes the virtual as 'anything that is the case, although not in the fullest sense.' (Wood, 1998, p. 4)

So an important analytical question is: what would need to be added to virtual reality that would make it 'the fullest sense' of reality? Or to use the Webster's definition, what needs to be added to the essence to make it a fact? A number of alternatives can be identified, none of them necessarily discreet from each other.

§ One is physical reality – where the emphasis is placed on what is added by the constraining boundaries of the human body or that challenge in some way our physical existence and functioning.

§ A second is material reality – where the focus is on reality defined and constrained by material resources and access to them.

§ A third is actualised reality – a set of conditions that are 'defined' or typified by concrete and specific instances in time and space.

Pierre Lévy creates an analytical framework by comparing virtual reality with actual reality:

'The virtual, strictly defined, has little relationship to that which is false, illusory or imaginary. The virtual is by no means the opposite of the real… The virtual should, properly speaking, be compared not to the real but to the actual' (Lévy, 1998, p. 16, 24).

It can be argued that this demarcation and categorisation is artificial and inaccurate. In practice it is difficult to identify clear boundaries between the actual, physical or material and the virtual. It can be argued that this desire or need to understand a phenomenon by attempting to establish clear boundaries between the virtual and the actual is characteristic of modernity's elevation of science, technology and rationalism as both techniques and ontologies, and the

resultant practices of modern thought of organising understanding by creating binary distinctions between the material and non-material, between truth and illusion, appearance and reality, culture and nature.

For much of human history, then and now, a clear boundary between the material and non-material has not been as readily recognised, accepted or practised. The idea that we can only describe as 'real' that which has actual material existence or situated embodiment has never been held in human history by any but a small minority of thorough-going materialists. One can point as example to Platonic philosophy and its various derivatives and exemplars, in which the 'real' is the disembodied ideal form – the virtuality in effect – that lies unseen behind the transitory and illusory appearances of material existence.

One could point also to spiritual outlooks which commonly subordinate the conditions of the material world to a superior spiritual reality. Just as material reality was verified through visual or tactile experience, this 'other reality' had equally valid forms of verification, such as faith. The writer of the Christian 'Letter to the Hebrews' reflects this view in writing, 'Faith… is the conviction of things not seen.'

Margaret Wertheim has pointed out that throughout human history all cultures have had parallel 'other' worlds. For the Christian medieval world it was the world of the soul described by Dante; for the Ancient Greeks the world of the Olympian gods, the Fates, and the Furies; for the Aboriginal people of Australia the world of the Dreamtime; and so on. These other virtual worlds were understood and being not separate from, but continually intersecting with the world of bodily experience (Wertheim, 1999, p. 244). For a large proportion of the human population over the centuries, this spiritual world has been more real than the constrained material reality within which they were living: flesh passes away but the spirit lives forever – material existence is the illusion.

This concept of a clear definitional boundary between the virtual and the material constructed by modern scientific rationalism has been challenged also by more recent deconstructivist thought, which rejects these conceptual oppositions in favour of more fluid cognitive boundaries. In thinking about virtual reality, therefore, the virtual should not be contrasted to 'the real.' The virtual is more properly understood as one of the forms of reality we inhabit, along with but also merged with the actual, physical, material realities.

Characteristics of the virtual

What are some of its characteristics? Calling something 'virtual' suggests that what is conjectured is real enough and close enough to a set of material conditions or actual experiences that we can say it is 'as if' it were the situation itself. Yet it is sufficiently different from it that we need to qualify ourselves by saying 'but it is not the situation itself.' Virtual reality has the character of being 'as if' but 'not quite.'

There is a tendency to want to say that a virtual reality is an inferior form of reality, but this reflects a hegemonic materialist view. To the contrary, virtual reality in general plays a crucial role in our being human. Because it is not constrained by the limitations of a specific actual instance, virtual reality plays an indispensable regenerative role in developing ourselves beyond the specific constraints of individual situations. So Pierre Lévy sees the virtual as:

'a fecund and powerful mode of being that expands the process of creation, opens up a future, injects a core of meaning beneath the platitude of immediate physical presence'(Lévy, 1998, p. 16).

Reality, understood most fully, therefore, is not just the immediate, actual or material conditions with which we need to deal, but also its accompanying virtualities. The example Lévy gives is that of a seed. A seed is more than its immediate material form, even though that constitutes a good part of its existence. What gives a seed its meaning and name are the interplay of its actual reality and its virtual reality. The material reality of a 'seed' is its cellular composition; the virtual reality of a seed is the bush or tree that it can become. What distinguishes a eucalyptus seed from a piece of eucalyptus wood carved in the shape of a seed is not so much their material difference but their virtual difference.

So reality is not a fixed singularity; it is a dynamic process of constant movement and interplay between the dimensions of virtualisation and actualisation. Lévy describes this difference in terms of virtualisation as a problematic and actualisation as a resolution of the

problematic:

'The virtual is a kind of problematic complex, the knot of tendencies or forces that accompanies a situation, event, object, or entity, and which invokes a process of resolution: actualisation. This problematic complex belongs to the entity in question and even constitutes one of its primary dimensions. The seed's problem, for example, is the growth of the tree. The seed is this problem, even if it is also something more than that… In one sense the entity conveys and produces its virtualities… In another sense the virtual constitutes the entity. The virtualities inherent in a being, its problematic, the knot of tensions, constraints and projects that animate it, the questions that move it forward, are an essential element of its determination' (Lévy, 1998, pp. 24-25).

A good example of this is the dynamic one encounters in the construction of a portrait photograph or painting, where the subject is 'realised' in a different way by locating them within a particular scene that brings together the present and aspired future. Such can be seen in family portraits, in which the family is portrayed in a social construction that is an idealised reality but not yet fulfilled; in tourist photographs where the individual is virtualised by being portrayed in a temporarily visited 'exotic' context; or in celebrity photographs where one's reality is expanded in virtuality by being photographed with a celebrity and the celebrity lifestyle of power or entertainment they represent.

This phenomenon became the subject of discussion at an ISCMRC meeting1 in Ghana recently in relation to the observed practice of having commercial portraits of oneself taken using painted backdrops of scenes such as well-stocked kitchens, living rooms, or aeroplanes. Stewart Hoover notes of the practice: 'The backdrops themselves are fascinating. They allow portrait subjects to locate themselves physically, to visually embody, a certain narrative of self'(Hoover, 2002).

A Ghanaian colleague noted that there is a class dimension to these photographs. Those who had their portraits taken in these settings were largely people from rural areas; urban people didn't do it, seeing it as unsophisticated (though one should note that urban people engage in the same practice of constructing virtual identities for ourselves through having photographs taken in alternative settings such as foreign locations or with people of prestige).

While they do appear as unsophisticated and simplistic, even apparently delusional, there is there is something more subtle going on. The virtuality of the projected identity is not hidden; there is no attempt by the person in the photograph to locate themselves within a 'real' living room or an 'actual' airport, which would probably be the more urbane thing to do. The pictures do not pretend to be real and the people do not pretend they're real – the element of fun that is reflected in many of the stances adopted indicate that observers are invited not to believe, but to suspend disbelief. The image is a device for revealing aspiration rather than pretending achievement. So Hoover notes:

'Far from being trivial affectations, these portraits articulate conscious, reflexive narratives of their subjects. In any of these objects, we see an elegant statement of the individual and his or her achievements, values and aspirations, articulated with larger social and cultural narratives of the economy, globalisation, markets, class, gender, etc. They are fascinating because they are so conscious and reflexive. These subjects have made conscious choices to select themselves into these locations' (Hoover, 2002).

Our concept of reality, therefore, is a continual dynamic of movement between reality as virtual and reality as actual. Within an actual situation, the press is towards identifying the virtual reality, the possibilities, as a way of escaping from the confines of the specific instance in fixed time and space. We enter the virtual in order to identify and explore other possibilities, in order to create new actualities.

The press from within the virtual, the dreaming, is towards the actual, as a way of concretising the loose, of converting the dream into bodily experience, and testing and implementing identity. Far from being 'unreal', therefore, the virtual is a crucial dimension of our humanity. In practice the boundaries between the virtual and the actual are extremely fluid and undefined. In everyday life, in many different ways, we are constantly moving between actual

situations we are living in and virtual possibilities evoked by those situations almost on a moment by moment basis. This movement between virtuality and actuality is well illustrated by self-talk, or that range of behaviours that Goffman describes as offstage rehearsal (Goffman, 1971).

Significance of the virtual

Levy identifies three main processes of virtualisation that have characterised and led to the emergence of humanity (Lévy, 1998, p. 97):

§ Virtualisation associated with signs. Language leads to a virtualisation of real time through a process of detaching ourselves and events from the immediate time and space in which they occur and intensifying the immediate experience through questioning and stories.

§ Virtualisation associated with technology. Technology produces a virtualisation of action, the body and the physical environment. Humans have always sought means to extend themselves beyond the practicalities of their immediate situations in the process both of survival and of making meaning. Technology has always been one of those means.

§ Virtualisation associated with social relations. For Levy ritual, religion, morality, law, economics and political regulations are social mechanisms for virtualising violence: for dealing with relations of force, impulse, instincts and desires. An agreement or contract is a virtual reality, a means of defining and ordering a particular situation in terms of a reality that are independent of the particular situation.

When seen in this way, the virtual can be seen as fulfilling a number of important functions crucial to human life:

§ Creation. It is first in virtual space that we generate virtual new realities that become the basis for testing and implementation in actual new realities. This is made possible through a transformation from a particular solution within the confines of the actual situation into a more general problematic in the virtual situation that is amenable to more fluid imagination, experimentation, and transformation. So, for Lévy, 'The virtualisation of the body therefore is not a form of disembodiment but a re-creation, a reincarnation, a multiplication, vectorisation and heterogenesis of the human' (Lévy, 1998, p.44). The whole area of drama in its many forms fits in here. Dramatic story-telling creates a virtual reality through a sympathetic exploration of other experiences.

§ Exploring potential and testing limits. In addition to being a site for creation, the virtual is the deterritorialised space in which we explore alternatives, potential and limits in a situation free of the confines, demands and requirements of the actual situation. So Lévy sees the virtual as a 'heterogenesis, a becoming other, an embrace of alterity' (Lévy, 1998, p.33). When Robert Kennedy said, 'Some people see things as they are and ask, why? I see things as they could be and ask, why not?' he was saying in effect, 'Some see the actual reality and ask why? I see a virtual reality and ask, why not?'

§ Safety. The virtual is a device we use in the war against fragility, pain, wear and mortality. We construct the virtual in search of safety and control. Theory is a virtual reality we construct and participate in as a device for countering the potential of chaos. Culture likewise is a virtual construct comprising 'a range of material practices and technical and intellectual works, also reflected in individual ideas, desires and aspirations' that serves to 'shield us from the brute reality of certain aspects of our embodiment' (Hillis, 1999, p. xvi).

§ Hope. An important function of virtual reality is to provide a space in which we can explore the possibility of a situation in which the threats, frustrations and limitations of our actual life do not exist, as a basis for believing that our actual life may one day be free of those threats, frustrations and limitations. It is no accident that most of the theologies of hope, such as that of Moltman, are strongly eschatological in character: offering people hope based on a future virtual reality.

It is these important functions that distinguish virtual reality from pseudo-realities. Pseudo-realities are imitations or counterfeit situations that simulate the actual – as such they are diminishments rather than enhancements. Virtual realities do more than just mirror or imitate. They are also creative: they have not just an 'as if' but 'not quite' character, but also a 'what if' quality as well.

What makes this creativity possible is that virtual realities are not bound by the constraints of specific times or places. The essence of a virtual reality is that it is deterritorialised and dehistoricised: it is a reality unconstrained by specific time-bound and place-bound demands and limits. For that reason, virtual reality space plays an important role in the development of identity.

The importance placed in recent cultural theory on developing individual narratives of the self is dependent on the continual process of conceiving optional realities, testing those options through performance, and reviewing those performances in relation to the ongoing virtual narrative.

Technological virtual realities

To this point, I haven't said anything about digital virtual reality or the ethics of digital virtual reality. This has been deliberate, for digital virtual reality, and the ethics of digital virtual reality, need to be considered not only in their own terms but also in terms of their continuity with the place of virtual reality in general in human experience, and therefore the continuity of digital virtual reality with other technological constructions of virtual reality as well.

There is value in locating discussions about digital virtual realities and some of the ethical issues associated with them within this broader context. Establishing such a context is a good corrective both to those who think these latest technologies are going to solve the problems of the world, and to those who think they will be a major cause of problems of the world, to be reminded of what has been said also about old technologies when the old technologies were new.

When I speak to church leaders who express concerns about the corrupting power of television and computers, I delight in pointing out to that similar concerns were expressed by church leaders about manuscripts in the first and second centuries (Osborn, 1959). Those whose concerns are for the health implications of digital technologies may find comfort in the caution given by one writer in 1795 about the health hazards of excessive book reading, which were identified as: 'susceptibility to colds, headaches, weakening of the eyes, heat rashes, gout, arthritis, haemorrhoids, asthma, apoplexy, pulmonary disease, indigestion, blocking of the bowels, nervous disorder, migraines, epilepsy, hypochondria and melancholy' (Spender, 1995, p. 8)

Discussions about whether the fantasy elements of digital virtual realities may encourage people to dissociate from the demands of 'the real world' and escape into fantasy worlds should be informed historically by such perspectives as the controversy in 19th century colonial Australia which came to be known as 'the fiction question'. The 19th century in Australia was the era of the universal literacy movement, when individual and social self-improvement was promoted through 'useful knowledge' disseminated by mass education, popular scientific lectures, the establishment of Mechanics' Institutes in local communities.

Key to this was the extending of the previously élite medium of printed material to the masses: books and magazines began to be addressed to a popular readership and community and institutional libraries were widely established. The People's Free Press and Educational Magazine in its first edition stated as its purpose: 'We shall endeavour to elevate the working classes in their sphere of usefulness by enforcing upon their conviction the necessity of applying their leisure hours to the improvement of their minds' (Askew & Hubber, 1988, p. 112). The Australian public took readily to reading as a new form of leisure activity, with one writer in 1873 claiming that '…among no English-speaking community of equal numbers in the world is there nearly so large a consumption of new literature as there is amongst our own' (Askew & Hubber, 1988, p. 112).

However, those who encouraged the spread of libraries and reading in order to promote self-improvement, were dismayed at the extent to which the general population bypassed what they considered to be 'good or effective reading' in favour of 'the indiscriminate reading of novels and cheap sensational literature,' and the effect this would have on people's moral citizenship. One civic leader, Richard Twopenny, proposed that the widespread reading of novels in Australia in the 1880s produced 'an affectation of aristocratic ideas and prejudices and a disproportionate estimate of essentials and superficials.' The Victorian Catholic newspaper The Advocate in 1869 advocated the setting up of local Catholic libraries in order to combat 'the spurious, sensational and infidel trash with which they (Catholics) are now so diligently and plentifully supplied.' The results of this excessive reading were 'lukewarmness, indifference, and neglect of religious duties' (Askew & Hubber, 1988, p. 115). It is sobering to realise that the fiction, this damaging virtual reality being referred to, was largely English Victorian novels such as those of Charles Dickens and Walter Scott!

In many ways, therefore, digital virtual reality needs to be seen in terms of its continuity with other technologies of virtual reality. When seen through the lens of continuity, the reactions and concerns that are being expressed about digital virtual reality can be understood primarily in

terms of their novelty and concerns about adaptation and displacement which accompany the emergence of all new technologies.

But the question of discontinuity also needs to be considered: Is there something paradigmatically different about digital virtual reality that places it in a different category from previous technologies or virtualities? Or is its difference simply that of novelty, reinforced by the absence of retrospect and historical perspective?

Hillis defines digital virtual reality as 'an individual experience constituted within technology' which 'draws together the world of technology and its ability to represent nature, with the broad and overlapping spheres of social relations and meaning.' Hillis, for his purposes, distinguishes between virtual reality and virtual environments, which he sees as 'spatialised realms of digitally coded information… made possible by virtual technologies... They use iconographics, which are more conducive to collapsing experiential differences and distances between symbols and referents, or the virtual and the real, than text-based applications' (Hillis, 1999, pp. xiv-xv). If there are differences in digital virtual realities, those differences may be located in a number of characteristics and their combinations:

§ One is the iconographic nature of digital virtual realities, with the questions of immediacy and nature of representation that are associated with visual apprehension. Hillis along with others locates this new dimension being added in DVR in iconographics, and the increased significance of sight and the gaze in current thought, compared to text-based applications. He comments: '(VEs) use iconographics, which are more conducive to collapsing experiential differences and distances between symbols and referents, or the virtual and the real, than text-based applications' (Hillis, 1999, pp. xiv-xv).

§ A second is the extent to which digital technologies are interactive, involving the user as a producer of reality, not just a consumer.

§ The third is the level of immersion involved. These can range from the basic level of a keyboard or lever to extensive bodily immersion in a constructed virtual environment, where the user dons a head mounted device and attaches exoskeletal devices that provide sensory stimulation apt to the virtual environment as well as providing feedback to the computer in a way that serves to reconstitute one's perception and body movements as an active element in the virtual environment.

Holmes summarises the key features of 'digital virtual space' through nine characteristics:

§ it is a sealed reality (architecturally, electronically or audio-visually enclosed or semi-enclosed);

§ the closure of VR may be physical or metapsychological (by distraction);

§ it substitutes an 'outside' world (which becomes its content);

§ it is convincing or stimulating enough to distract the immersee from the displaced 'outside' world;

§ it is interactive (in providing flexibility and autonomy as to how the space is experienced);

§ it enables an illusion of control (it offers choice of stimulation in a way that is far more flexible than historical reality (a dehistoricisation of experience));

§ it provides the gaze with much more mobility than a non-virtual world – the opportunity to 'travel' with the mind or the body;

§ where virtual technologies are a simulation they offer safety not guaranteed by the 'real thing';

§ because they are constructed spaces which service the demands of consumption, communication or mobility (for example the casino, cinema, and the airport respectively), virtual spaces are easily globalised (Holmes, 2001b, p. 16).

There are some who argue that the level of physical immersion created by digital virtual realities make them qualitatively different from previous ones. Yet there are others who argue that this belief that digital technologies are qualitatively different from other forms of mediation reflects a cultural chauvinism arising from a lack of historical understanding. David Morgan, Professor of Christianity and the Arts at Valparaiso University, commented in one internet discussion:

'For me (a historian) the more interesting question is this: is there anything really new about the "menace" of digital virtual media? New media wonks (who seem to be about 98% of media studies people, almost all of whom are unrepentantly presentist in their working assumptions) appear to accept as a given that Internet is new, all new, and nothing but new. It is quite important

to realize that virtuality is NOT new. It is as old as representation, which is pretty old' (Morgan, 2002).

Anne Friedberg gives an illustration of the impression made by the visual stimulation of the redeveloped Palais Royale, one of the first arcades in Paris in the 18th century. One visitor in 1789 declared: 'One could spend an entire life, even the longest, in the Palais Royale, and as, in an enchanting dream, dying say, "I have seen and known it all".' (Friedberg, 1993, p. 68).

It is possible, for example, that through its open textuality and invitation to imagination, a book may be as immersive as a computer generated environment. In thinking about continuities and discontinuities, therefore, one can readily see many continuities between digital virtual reality and broader questions both of virtual reality and earlier technologies of virtual reality, such as writing, books, photography, cinema, radio and television. One can also see continuities with other social practices of virtual reality such as tourism and shopping centres.

There are also discontinuities, obviously, though the question about whether digital technologies represent a paradigmatically different situation must remain open. If they do, it would be in their capacity to physically reproduce and manipulate the sensory experience of actual situations through the ability of digitalisation to dissect and categorise a sensory reading of a situation, and through the volumic capacities of computerisation to manipulate and reproduce that reading in different forms.

Ethical perspectives and issues

Given these broad philosophical and historical perspectives, the mind boggles at the prospect of finding an approach to thinking ethically about digital virtual reality. If one accepts, as I have proposed earlier, that in thinking about digital virtual reality one actually has to engage all the issues involved in the relationship of virtuality and actuality in being human, the scope is limitless.

On one hand, one could approach the task from the perspective of identifying what frameworks are applicable to an ethical analysis of digital virtual reality, such as is done by Forestor and Morrison (Forester & Morrison, 1997). Another approach may be that of identifying what ethical principles are fundamental, such as are provided by Christians (Christians, Fackler, Rotzoll, & McKee, 2001) and Christians and Traber (Christians & Traber, 1997). Damien Keown also gives a good example of this approach in his essay 'Embodying virtue: A Buddhist perspective on virtual reality,' in which he concludes:

'In other words, reflection on what constitutes human good teaches us that it is only in and through activity itself (and not a simulacrum of it) that human beings can flourish. A virtual existence is a life without a telos, a life spent going nowhere. Within Buddhism, meditation is a central part of a programme for life, a programme aimed at producing real change by encouraging human beings to participate in real goods. In this respect it is the very opposite of the statis of a virtual experience, wherein however much the wheels spin, nothing ever moves.' (Keown, 1998, p.86).

One can approach the issue from a critical perspective, similar to that taken by Ellul in his critique of technology in general, or feminist critics such as Judy Wajcman (Wajcman, 1997), Rye Snejen and Jane Guthrie (Snejen & Guthrie, 1994), or Dale Spender (Spender, 1995). One could also build a whole ethical analysis around the applications being made of these technologies. Technologies of virtual reality are now used in a wide diversity of applications, including entertainment, scientific, medical, military, financial, corporate and educational.

Is it possible to find any ethical approach or framework that is adequate to this diversity? In what is primarily an exploration, in the second part of this article I want to identify what I think are four areas of ethical consideration in DVR: some epistemological questions, the issue of displacement, questions of content, and finally questions of power. If there is a guiding ethical perspective in this analysis, it is the broad question of 'the good.' Virtual reality is a crucial element in creating and expanding our capacity to be human. To what extent do digital virtual realities further that capacity, individually, communally, and in relation to the earth as a companion living organism?

In doing so, it is important also to be self-reflexive in order to avoid the sort of class determinism that was reflected in early approaches to the study of media and violence, for

example. McQuail among others, for example, has pointed out how the strongly critical Frankfurt School may be understood from the perspective of distaste of a cultural élite for products of popular culture (McQuail, 1994). If we are to reflect on the possible impacts of digital technologies on users, we need to pay attention to how users of digital virtual reality themselves are understanding and constructing meaning out of their activities; to the possibility of multiple and diverse ethical implications rather than simple singular ones; and ways in which digital technologies and the meaning they have function within the broader culture, not just in the experience of individuals who use them.

Epistemological questions

The first set of questions float around what might conveniently be called epistemological issues, issues that hover around the question of the boundary between virtual and actual reality. A couple of issues come to mind.

The first relate to the cultural construction and meaning of place and space. Much of the character and distinctiveness of virtual reality comes from its deterritorialisation: its capacity to dislocate event from specific time and specific location. To what extent does the dislocation of reality from time and space lead to alienation? Lévy, while acknowledging the creative benefits of virtual reality, also cautions that we need to beware of 'its alienating, reifying and invalidating caricatures' (Lévy, 1998, p.17). Hillis is also cautious of uses of virtual reality technologies that separate us from the realities of our material existence (Hillis, 1999).

But time and place are not simple entities. Pierre Lévy in his book Collective intelligence identifies four space realities: earth, territory, commodity, and knowledge space (Lévy, 1997). Likewise we do not recognise just one reality of time: there is both work time and leisure time, both of which are given quite different characters and meaning. Even present time is not just that, but is a crossroads of the past and future.

Space is more than just a simple physical location. Margaret Wertheim in her book The pearly gates of cyberspace (1999) provides a provocative perspective in her analysis of the changing character of space in western thought and experience since the Middle Ages. Wertheim argues that the medieval worldview encompassed both 'a physical and a spiritual realm' that incorporated 'a genuinely dualistic cosmology consisting of both a physical and a spiritual order' that intersected each other and were influential in the shaping of human life (p. 33). One of the effects of the scientific revolution was to change this cosmology into a monistic physicalist worldview, in which 'physical space came to occupy the whole of reality,' extending to infinity. 'Conceptions of terrestrial and celestial space underwent a revolution, with celestial space being reconceived in terms of mundane physical forces and mathematical laws.' (p. 39) One of the major effects of this was thus 'to write out of our vision of reality any conception of spiritual space, and along with that any concept of spirit or soul.' (p. 39) The materiality of the physical became a significant touchstone of ethical evaluation.

In the 20th century, that monistic materialist worldview began to change. Among other things, the concept of non-material space 'has assumed an ever-greater role in the scientific vision of reality, until now it is seen by many physicists as the primary element of existence itself' (p. 39). Wertheim uses this framework as a context for examining the contemporary significance of virtual reality, or cyberspace in the construction of meaning. She proposes that the virtual reality of cyberspace needs to be understood within the context of recovery of a 'new space of 'spirit'… a kind of immaterial space of mind' (p.41) that fulfils today a similar function to the medieval cosmological worldview. She locates the attraction of virtual environments and experiments with virtual reality within the shortcomings of the materialist offerings of the west and the spiritual yearnings those shortcomings are producing. 'In this climate I suggest that the emergence of a new kind of non-physical space was almost guaranteed to attract 'spiritual' and even 'heavenly' dreams.' (Wertheim, 1999, p.40)

What Wertheim is suggesting about cyberspace has some parallels in Victor Turner's concept of liminality, intense threshold experiences and their role in the shaping of individual and communal identity (Turner, 1969). The observations that Robert A. White makes in relation to the important role of media in leisure experience may well apply to the media of virtual reality:

'More recent research confirms that leisure is not just absence of work, but the time when we develop our personal identities and establish our own personal values. The importance of leisure

for taking decisions and forming the trajectory of our "life stories" is highlighted by studies which show that in transitional periods of our life, leisure becomes more important for exploring and mapping out our future. The freedom of youth… is such a time of exploration and integration' (White, no date).

Ethical analyses that place excessive importance on the nonmaterial nature of virtual reality may therefore miss the significant social transitions and spiritual dynamics of time and space that may be part of the phenomena of cultural change being brought by the digital. One of the differences between contemporary virtual reality in technological contexts and medieval experiences of the virtual lies in the relative contemporary absence in the west of defining cultural meta-narratives. The medieval spiritual realm may well be seen as a virtual reality, but it was a virtual realm that was highly ordered by shared communal theological understandings which were seen to be validated in material conditions. It was also a realm that was seen to have its own transcendent autonomy.

It is dubious if one could say the same about digital virtual reality. To the contrary, digital virtual reality is strongly self-generated and controlled, consumer-oriented and individually centred. Hillis sees this as a concern. He views virtual reality within the framework of (Lorenzo) Simpson's assertion that postmodern desire 'is the demiurgic desire to be the origin of the "real".'

'Enter VR as the technico-cultural fix invented by a postmodern sensibility both as a bulwark against uncertainty instigated by the perceived death of the real and as an uncanny artefact created by a later-day nostalgic Dr. Frankenstein in search of a means of producing a seemingly vanquished (meaningful) reality. In all of this, VR suggests that a premodern realism can be recuperated through using modern conventions of representation.' (Hillis, 1999, pp. xxix-xxx).

So one of the ethical questions of digital virtual reality centres around the question of the place of space and the body in being human. This revisits the question of: to what extent is self-consciousness and self-awareness an inescapable aspect of being human. If our physical senses and consciousness are not merely being extended by technology, in a McLuhan sense, but are actually being technologically substituted, when do we stop being ourselves? And if technologically constructed pseudo-realities that contribute to our meaning and identity construction are totally divorced from the material aspects of our being, to what extent are they inherently alienating?

At this point digital virtual reality enters the debate that has run through centuries, and has been resurrected in some postmodern theory, that 'the body is a fiction, a decorporealised subjectivity sliding fluidly among a variety of positions' (Friedberg, 1993). While the meaning of our bodies and what happens to our bodies is subject to social and cultural construction, we remain embodied beings. However the relationship between the body, consciousness and meaning is theorised, our bodies are important.

A second question centres around the relationship between technologically mediated information and the nature of virtual reality. The question proceeds like this. When a computer generates a constructed visual and auditory environment that you place yourself within and interact with, is that a 'virtual' environment or an 'actual' environment? The machine is constructing a context that stimulates your physical senses, so there is a sensory embodiment; you interact with the machine in a specific place and time in your life; and the constructed environment you are interacting with has limitations generated by the limits of the programme that you can't do anything about. So it may be argued that what is commonly called digital virtual reality is not genuinely a virtual reality: it is more like a pseudo-reality constructed by a programmer using a machine that re-territorialises experience rather than de-territorialises it.

This would be a semantic point except for the fact that there is significant ideology constructed into the parameters of the programmed pseudo-reality. There is ideology enacted in what problems and issues are included in the programme, ideology in how those problems are identified and set up, and ideology in the options that one is given for dealing with the issues. For example, a number of women I have spoken to are quite uninterested in computerised reality programmes: not because they're technophobes, but because they find the situations presented, and the way in which those situations are constructed, so limited in imagination and opportunity.

One said to me, 'I really would have been interested in exploring this particular aspect of the situation but the programme wouldn't let me.'

In a study of the online computer game EverQuest, a game that allows for social interaction with other gamers, one of my students found that the opportunity for unstructured social interaction that the game made possible was a highly significant factor in its popularity. Consistently more than three-quarters of players named social interactions such as chatting with other gamers, helping novice gamers, and trading with other gamers as very important in their participation (Wong, 2000).

Virtual reality as distraction or displacement

A second series of ethical questions arise around the issue of the extent to which engagement with virtual reality becomes a distraction from addressing issues of practical reality. There are two dimensions to this. One is the issue of the amount of time that is spent in participating in the virtual, that is taken away from doing one's personal and civic duties. Once again, precursors can be found in concerns about earlier technologies. The Victorian Catholic Advocate in 19th century Australia expressed serious concerns about popular novel reading because it produced 'lukewarmness, indifference and neglect of religious duties' (Askew & Hubber, 1988).

To a certain extent this displacement effect can be understood in terms of the time given to a new activity either because it's new or because of the time required in mastering a new skill. David Morgan writes:

'I wonder if some of the concerns about the negative effects of digital media aren't comparable to anxieties raised by Christian parents and moralists in the 18th and 19th centuries regarding novels: that they exert a dissipating effect on readers by stirring the passions and absorbing leisure time. New media are perhaps most noticeable in everyday life by their commandeering of time. In order to learn their new protocols, users must spend a great deal of time focusing on the new apparatus. And once learned, new media by virtue of their novelty and the enthusiasm shared by one's cohort--especially among the young--quickly claim leisure time and squeeze more time from other parts of the day' (Morgan, 2002).

One of the early television researchers, Paul Lazarsfeld, proposed in 1955 that one of the social effects of television viewing was what he called a 'narcotising dysfunction', in which viewing came to substitute knowing for doing, leading to an eventual diminishment of social involvement and engagement. Robert Putnam makes a similar point in his expressed concern about the decline in social capital and civic engagement in America.

A second dimension is that of the escape provided by digital virtual realities – whether the essential characteristics of virtual reality as a reality in which the frustrations and disappointments of the actual world do not exist, will inevitably lead to a diminishing desire to live in the actual world.

The concern about escape argues that instead of learning the disciplines of living with or changing one's individual or communal environment, one finds it easier to escape into a reality where those practicalities do not exist. Sherry Turkle has noted in Life on the Screen that life on line is often preferred to real life for a number of reasons: it is safe, it facilitates a highly mobile gaze, you can leave the environment at any time; it can be engaged with in a physical environment of the person's own choosing, as well as attendant physical comforts (Turkle, 1997).

Digital virtual reality is not distinctive in this. One of the earliest novels, Cervantes' Don Quixote, is an entertaining critique of a member of the leisured class who spent so much time in the virtual world of chivalric novels that he had lost the capacity to engage the actual world in its own terms. Yet it is also a subtle exploration of the interaction between the virtual and the actual, and the capacity of the virtual, albeit fractiously, to transform the mundane.

Ethical discussion around this issue needs to engage not just individual behaviour but also broader cultural issues. Digital virtual realities link into broader social movements in advanced capitalist societies that reflect changing relationships between the individual and the community. These include a growth in leisure time, an increase in media-structured urbanisation leading to changing patterns of accessing and processing information, development in detachment encouraging 'the gaze' as a position of engagement with society, and the development of commodification and consumption as economic structures. So texts such as those of Friedberg

and Holmes, for example, argue that digital virtual reality needs to be viewed as continuous with growth in other virtualities such as the city, shopping malls and tourism (Friedberg, 1993; Holmes, 2001a).

Ethical discussion about digital virtual realities, therefore, needs to address the question of the extent to which practices of digital virtual reality simply reflect changing cultural patterns and practices, rather than a departure from presumed desirable ethical outcomes that have been shaped around previous cultural configurations. For example, a lot of critiques of young people's engagement with cyber activities are premised on the belief that time they spend at a computer is time spent alone, and time taken from community involvement. However this behaviour can equally be seen not as a withdrawal from community, but as a reformation of community patterns and involvement, a point made strongly by people such as Howard Reingold (Reingold) and Dale Spender (Spender, 1995).

The content of digital virtual reality

A third locus of ethical reflection is the content of digital virtual reality. If, as suggested earlier, virtual realities play an important part in the construction, testing and performance of identity, it's fair to ask the following ethical questions: what are the typical contents of these constructed realities, how diverse are the opportunities they present to participants, and what is the nature and possible consequences of the constraints placed by these constructed realities?

The question here is not specific to digital virtual reality, but continuous with questions raised about all mediated material. We construct meaning as the basis for action not just from concrete material conditions, but also from the matrix of symbols that is available from within the culture for interpreting those material conditions. Questions asked about the content of digital virtual reality and its consequences are continuous with other contexts such as Plato's restrictions on those who could tell stories to children, the medieval church's decision to control the content of icons during the 8th century, the extensive research programmes and social arguments about television violence in the second half of the 20th century, and more recent debates about possible links between violent video games and school murders in the US in recent years. Obviously there is no one or simple answer to these questions, which are questions about representation, and which have been going on for millennia. I want to focus on several for attention in the context of this consideration.

The more significant issue may not be specific aspects of content, but rather the repetitive patterns that are reflected in particular genres of digital virtual reality, and the mythic structures reflected in those patterns. Arising out of the research and debates about the social impact of television violence, George Gerbner proposed the concept of cultural cultivation. He suggested that in thinking about the impact of specific media contents on human behaviour, the bigger issue was not so much the content of individual programmes but the narrative patterns of power and violence that were consistently and repetitively reflected across the wide range of programming. The greater impact, Gerbner proposed, was not one of individual effect but rather the creation of a common mainstreamed view of the world within which particular behaviours became appropriate and justified. Gerbner's concern also was to identify the ways in which these particular mythic structures reflected the political and institutional interests of those who controlled the means of production.

Similar questions need to be asked about the mainstreamed or mythic contents of virtual reality. Pornography, one of the few businesses making money on the Internet, provides a useful case study. Those promoting representational pornography as a safe virtual experience argue that it is quite different from actual abusive behaviours towards women. Feminist critics legitimately point out, however, that representational pornography is neither fiction nor virtual: actual exploitation and violence of women occurs in the production of the representations. Likewise the fictional narratives constructed in pornography so closely parallel actual behaviours experienced by many women that one cannot say that pornography is fictional: rather it promotes or reflects a mythos of power relationships between men and women.

If the content of a constructed virtual environment mirrors the power relationships of the actual world, for whom is it 'virtual?'

A second question arises in relation to the constraints or limitations adopted within the virtual environment and the ideological nature and consequences of those limitations. As with all cultural representations, virtual reality simulators reflect the life world of their creators, 'recreating' the

world in the image of those few who command the technology. This applies not just to what is presented in the content, but also what is excluded.

Since males dominate in the construction and consumption of digital virtual reality, one of the issues is the strongly biased male character and interests of its content. Hillis, for example, reflecting on his participation in an A.R.L. (military) virtual environment, noted: 'In trying out the A.R.L. application, I found it impossible to ignore the lack of women. Men design a killing and testing ground for other men' (Hillis, 1999, p. xxvii).

To what extent do digital virtual realities simply replicate male preferred models of social interaction (for e.g. those that emphasise unrestrained freedom, and segmenting and sequentualising work by narrowing tasks and restricting interruptions). To that extent, rather than facilitating genuine creation and problem solving, Hillis argues that some digital virtual realities may be maladaptive:

'What is lacking in arguments advanced by those promoting this profoundly individuated virtual 'freedom' and 'pleasure' to play with identities, subjectivity, and geographies is a sustained consideration of the meaning and context of self-control of our actions, along with any sustained interrogation of the consequences for social relations beyond the scale of individual access. If, as users, we are truly to be so fragmented within the 'play' of VEs, then which aspect of our identity is it that will morally inform our actions so that we do not inadvertently hurt or damage those people and things we care for in this unbridled free rein of identity?' (Hillis, 1999, p..xxvii).

All virtual realities require a suspension of disbelief to take place in order to participate in the virtual. This is true for digital virtual reality as well. Hillis, in one of his experiences in a virtual environment, also states: 'I fairly quickly suspended my sense of disbelief, that I was walking in an image, even as I remained aware that this was so' (Hillis, 1999, p.xxvii)

Those who are concerned about digital virtual realities often focus on this characteristic. But suspension of disbelief is characteristic of participation in a range of human settings, including rituals, theatre, and play. To that extent analyses of the ethics of virtual reality need to be informed by insights of genre studies, which suggest that perceiving the type of genre, and knowing the rules pertinent to that genre are fundamental to cultural literacy and need to be read in those terms. The parables of Jesus are a good example of this: the opening gambit, 'There was once a woman who…' was an invitation to participate in the genre, part of the purpose of which was to pose an undefined story which the audience was required to close.

This suspension of disbelief links with the process of genre reading and cultural literacy. Genre studies suggest that participants in a virtual reality, whether comic books, cinema or whatever, may become quite skilled at reading the genre and responding to the virtual reality within the terms characteristic of the genre. It is important, therefore, when thinking about content, to be aware of the difference in perspective that may be gained by somebody looking in from outside a situation and trying to understand what is going on inside the situation, compared to someone who is in the situation itself.

Questions of power

The final dimension of ethical implications is that of the power issues raised by virtual reality technologies, in two particular applications. One is in terms of access: who has access to these technologies and the benefits they bring, with what consequences; and who is excluded, with what consequences? The second is in terms of construction: whose narratives, world views, and political and economic interests are the source of these digital realities; and whose narratives, world views, political and economic interests are excluded, with what consequences?

What does it mean, and what are the practical consequences, of the fact that the power of access and narrative construction within digital virtual reality lies in the hands of a relative few western developed countries; and within those countries primarily a relative small élite class; and within that class primarily the males; and within that a limited range of applications? This is crucial, because in negotiating a plausible narrative of who we are (Hoover, 2002) we continually negotiate between a range of cultural offerings, meanings, objects, values, symbols, practices and material circumstances made available within our environment.

Dale Spender notes how women are commonly worse off after revolutions, including media revolutions. She argues that women now find themselves significantly disenfranchised as a result

of the computer revolution (Spender, 1995, p. 161). Though differences in the ratio of women to men accessing the Internet has significantly narrowed in advanced capitalist economies, access to and exclusion from technologies is a significant site for the definition of social power. Spender cites Australian research to illustrate how this exclusion of women from prestigious technologies begins very early, as ‘three-year-old boys in pre-school insist that the computers are the boys’ terrtitory, and the girls are verbally and physically driven away’ (Spender, 1995, p. 167).

The significance of this limited circle of creators and participants, on a global scale, lies in the fact that the creation of ‘virtualities’ has become an important hermeneutical concept, with virtualities such as ‘globalisation’ becoming important influences on social, economic and political policy. Technologies have developed to such an extent that concepts and actual practices deriving from deterritorialised and dehistoricised virtual realities enabled by technology are beginning to displace material realities of social, economic and political life grounded in time and space. For example, the business and finance systems of the world now operate within virtual economies which deterritorialise and desynchronise behaviours and institutions from the actual world.

One of the characteristics of virtual realities is that they are very transient and unstable. Virtual corporations and virtual economies run a major risk of creating uncontrolled havoc with the lives of the world’s populations. Two examples may be cited. One is the impact of the 1997 economic downturn, which had devastating consequences on the lives of people in vulnerable regions in Asia and Africa, yet appears to have been triggered by and linked to electronic manoeuvring of virtual wealths and currencies. The second is the ironic phenomenon of the dot.com collapse. I understand the dot.com collapse as one in which the virtual emperors were exposed as having clothes but no bodies, which would be amusing except that there are millions of people whose welfare has been badly affected by it.

Both of these illustrate the danger of the virtual as transient and lacking temporality. Perhaps the quite rapid financial sobriety that appears to have come out of the dot.com collapse is a precursor to a new longer-term future rapprochement, in which the mystique of technological-based virtual reality is being demystified. As with the cultural adaptation of new technologies in the past, perhaps we are moving towards a situation where a new integration between the virtual and actual is beginning to emerge.

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Notes

1. International Study Commission on Media, Religion and Culture http://www.jmcommunications.com/english/commission

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