20 'Other' worlds

Augmented, comprehensible, non-material spaces

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Introduction

In this section of the book we are concerned with spaces which do not seek to *represent* geographic space, but which utilise geographic concepts to depict other types of information, extend the portrayal of geographic phenomena by non-visual VR supported methods, or render non-material characteristics in virtual reality environments. These spaces do have a spatiality, with qualities often equivalent to geographic space, and yet they are entirely socially produced/constructed and exist as parallel (non-related) or symbiotic (augmenting) spaces. As such, the discussion within the chapters is significant, at both philosophical and practical levels, because they utilise VR spaces implicitly to challenge traditional, physically-bound conceptions of space and place, and explore geographic visualizations that do not necessarily seek to be representations of 'real world' environments. Whilst these digital constructions using hardware and software spaces are spatially organised, and metaphorical spaces and imagined spaces are nothing new, VR spaces are qualitatively different in that they actually enable 'geographic-style' (spatial) behaviour – they are spaces you can be immersed in, you can move through, and where a new form of interaction with other people and objects can take place. They create a sense of place that has meaning to people.

Situating VR spaces

It is worth at this juncture to briefly consider conceptions of space and the representation of space in order to situate VR spaces. There is a long historical precedent, tracing back to Ancient Greece, of philosophising the nature of space. Curry (1998: 24) suggests that conceptions of space lie on a continuum, 'where at one end are those wherein the relationship among objects is strictly contingent, and where at the other are conceptions where the objects in space have very strong, even necessary and intrinsic relations with one another and the space in which they are located'. In other words, space is viewed as either absolute, a container filled with objects

(Aristotelian, Newtonian), or relational, which is either the consequence of interrelationships between objects (Leibnizian, Kantian) or is 'constituted through social relations and material social practices' (Lebevrian; Massey, 1994: 254), or as a combination of absolute and relational aspects (Sayer, 1985; Urry, 1985). Moreover, Curry (1998) details that the position of the viewer varies within these conceptions. In some the viewer is intrinsically connected with the viewed and/or has a privileged position, whereas in others the viewer is disconnected and/or occupies an unprivileged position. The conceptualisation of space is the foundation for its representation.

As we will discuss, VR spaces (both those that seek to represent geographic space and those that do not) seem to us to offer challenges to current conceptualisations. VR spaces offer 'geographic-style' interaction, and yet the spaces are *not* essential (given) or absolutist. Instead they are purely relational (both spatially and socially) and yet, unlike geographic space, they possess a number of other qualities which set them apart. As discussed in the chapter by Kitchin and Dodge (Chapter 23), VR spaces are constructions – productions of their designers and, in a few cases (Dodge, Chapter 21) by active users. VR spaces adopt the formal qualities of 'geographic' (Euclidean) space only if explicitly programmed to do so. Spaces are often purely visual, objects have no weight or mass. VR spaces have spatial and architectural forms that are dematerialised, dynamic and potentially devoid of the laws of physics; spaces that are not physically tangible, in that they can be explored by the mind, yet metaphorically relate to bodily experience. It is only now that we are starting to wrestle with wider questions concerning the spatiality of VR spaces and the nature of interaction within them. For example, Virilio has recently come to question whether objects in VR are simulations or substitutions:

> this is a real glass, this is no simulation. When I hold a virtual glass with a data glove, this is no simulation, but substitution.... As I see it, new technologies are substituting a virtual reality for an actual reality.... there will be two realities: the actual and the virtual.... This is no simulation but the coexistence of two separate worlds.

This, in turn, raises questions about representation. Geographers and cartographers have long wrestled with notions of how to represent geographic space. For example, for centuries cartographers have been experimenting with ways to map and visualize spatial relations across the Earth's surface. Here, those creating representations are interested in issues such as accuracy, precision, verisimilitude (having the appearance of truth, realistic depiction), and mimesis (imitation, mimicry), and the degree to which a representation is separate from that which it seeks to represent. These issues still have pertinence for VR (see Part I) along with related issues concerning hyper-reality. The spaces described below, however, do not seek to represent geographic space. They are spaces that have no tangible geographic counterpart – creations rather than representations. In some cases (e.g. information spaces) the geographic metaphor and territory become synonymous (one and the same). Here, the use of a geographic metaphor to structure the data becomes the means by which this new territory is navigated. For example, a VRML Web page is both the territory and the means in which to navigate this territory. Moreover, unlike representations such as maps, VR-based representations can be viewed and navigated in ways analogous to the ways people habitually navigate geographic space (e.g. wayfinding along streets to visit the local bank), plus in addition by utilising ways such as exterior viewpoints and teleporting. The separation of territory and map, the continuous nature of that being mapped, and a qualitatively different form of interaction (e.g. reading a map), are central to traditional geographic representations such as mapping. Clearly these tenets are being arbitrarily violated in VR spaces.

The spaces identified

In the chapters that follow, five types of 'Other' worlds (imaginary, information, sensory, statistical and social spaces) are identified and discussed. Before discussing these five spaces it is necessary to highlight their distinguishing traits. In the first instance, these spaces differ in the ways in which they transform traits of a wide range of phenomena – geographic and non-geographic – to spatial relations in a VR environment. While these transformations rely on geographic and topological concepts (e.g. proximity), they do not inherently make phenomena geographic. Frequently, geographic concepts are used here to aid the presentation of complex relationships or even construct new relationships that have never existed, and to open new analytical and didactic vistas. These concepts can also extend human creativity into new social spaces which currently do not physically exist, but provide a substantial touchstone for a wide range of human activities. Given these arguments we identify three different types of virtual realities, which the chapters in this section explore:

- *Augmented* – additional information to provide a multi-modal VR experience that extends the representation of the virtual and geographic environments by alternative sensory means enriching the participant's experience. For example, a textual MUD can be augmented by the inclusion of visual indicators (icons) or interaction with the urban environment by visually-impaired people can be augmented by virtual auditory overlay to provide external frames of reference.
- *Comprehensible* – application of geographic concepts, such as proximity, to provide cues to aid the navigation of large amounts of data that would otherwise be difficult to understand. For example hypertext documents can be restructured into a browsable site map which utilises human ability to understand spatial relations.

- *Non-material* – VR representation of physically non-existent phenomena, figments of the imagination, or characteristics of physically-present, non-material phenomena. For example, the social virtual environments of AlphaWorld are a dematerialised, dynamic, disembodied VR space inhabited by real people through their avatars. The VR representation of non-material phenomena, such as heat, gravity and the representation of indirect measurements (i.e. precipitation, population density) is yet another example.

These types of virtual realities are instantiated in following five *metaphorical* spaces. These types of spaces are not mutually exclusive and, in fact, combine different aspects of augmented, comprehensible and non-material virtual realities. Indeed, these aspects alone do not fully differentiate these spaces, and as the examples discussed in this section show, other characteristics – such as purpose and intent – need to be considered as well.

- *Imaginary spaces* are pure creations with no geographical referent, no geographical materiality. They only exist as virtual spaces, although they may use geographic-style spaces to foster interaction and adopt many of the characteristics of real-world places. They do not, however, represent a geographic space (Dodge, Chapter 21).
- *Information spaces* are conceptual, metaphorical spaces created by utilising spatial metaphors such as proximity/density/connectivity to make metadata more comprehensible and navigable (e.g. site maps to aid comprehensibility of Web pages) (Harvey, Chapter 22).
- *Statistical/graphical spaces*, similarly to information spaces, use spatial metaphors to add understanding. However, they are qualitatively different in that they provide a spatial structure to immaterial data in the geographic world (e.g. gravity, heat) (Kitchin and Dodge, Chapter 23; Cheesman and Perkins, Chapter 24).
- *Sensory/perceptual spaces* do not represent geographic space but provide augmentation to such spaces to provide a qualitatively-enriched experience of a geographic space. This augmentation might be through the provision of immaterial information, such as labels or directions, using sound (Jacobson *et al.*, Chapter 25).
- *Social spaces* are spaces in which several users can interact through some form of communication (Dodge, Chapter 21).

These spaces are constructed by a wide range of individuals institutions, and large corporations who set out to develop and refine them as means of developing new spaces for social interaction, understanding or VR spaces to enhance existing information technology environments.

These types of spaces already exist in a number of forms, but in terms of cyberspace are new, qualitatively different, and change socio-spatial relations in the 'real-world' supported by digital computers and networks. The changes in people's awareness of social spaces through the telephone, for example, is an earlier technology that extends social forms of interaction and our comprehension of geographic spaces we inhabit. VR-based spaces go yet further in offering distributive immersive interaction. Whereas the telephone only extends our auditory interaction with a limited number of participants at a given moment, VR offers a profusion of enhanced means for relating material and non-material phenomena through the persistent enrolment of a spatialisations as references for interaction. Indeed, these spaces illustrate the various ways in which VR concepts can go beyond the approximate rendering of geographic phenomena and enable creative interactive and immersive environments to support new and enhanced human learning and social interaction. We are now just beginning to understand the spatialisations that make these spaces qualitatively different and the chapters of this section discuss some of the more salient issues.

Concerns/issues

The promise of these VR spaces does not go without concerns. The chapters in this section voice some of these concerns, but we feel it is most appropriate in this introduction to point to a wide range of issues we feel is, and will remain, important in the development and critical examination of the development of VR technologies.

Power of VR

As Harley (1989) and Woods (1993), among others, have argued in relation to maps, and Pickles (1995) in terms of GIS, VR is not an objective, neutral space (Markley, 1996). VR spaces are imbued with the values and judgements of those who construct both the technology and the medium, and are situated within broader historical contexts – VR has not arisen in a vacuum, but has been guided by historical context (namely military's desire for flight simulators, funding bodies, capital venturists, etc.). Moreover, VR spaces are not egalitarian. Access to them is limited to those who can pay, and they are regulated by the institutions that build or maintain them. As such, they are situated in a nest of power-relations that influence social relations. This in turn raises ethical and social questions. We can clearly foresee that the financial ability to obtain the necessary technical infrastructure and maintain it will be a primary means of including and excluding groups in society. The augmented, comprehensible and non-material spaces we discuss are thus not neutral spaces and should not be accepted as such. Scholars such as Steve Graham (1995) and Michael Curry (1998) point to this in their work on surveillance technology.

Embodiment/disembodiment

For many commentators, VR technologies offer the possibilities of new, real-world social relations. For example, Stone (1991) suggests that VR spaces help to blur the relationships between the social and technological, biology and machine, natural and artificial, with the resultant mergers forming the keystones for the new social space. This blurring is leading some theorists to hypothesise that we are adopting new forms of embodiment, becoming nations of cyborgs. Here, human and machine merge, with the machine replacing or supplementing the flesh. We are being re-configured in new ways that challenge traditional identities. Computers, headsets, bodysuits (as well as cosmetic surgery, biotechnology and genetic engineering) extend our bodies into new spaces and allow us to explore what it means to be human. Feminist commentators (Lupton, 1994; Plant, 1996), for example, suggest that cyborging technology represents 'liberation from the confines of gender and other stereotypes, by rendering cultural categories indeterminate and fluid' (Lupton, 1994: 101). These and other analysts (Morse, 1994; Tomas, 1991) extend these debates concerning new forms of embodiment to suggest that VR technologies are, potentially at least, spaces of disembodiment – spaces that can be explored free of the body – new social spaces where the physical and material are transcended. It will be interesting to see whether gender reinforcement or gender crossing become more predominant in cyberspace; the possibilities for impaired individuals also present interesting questions regarding their involvement. The issues indicated here lead to the question of whether we are now embarking on the way to establishing alternative worlds which interact with our physical world in yet unknown ways and open new vistas for social relationships. If this is the case, what are the implications of such reconfigurations?

Real/virtual

Philosophers have long been troubled over the question of reality. Recent commentators have started to argue that it is becoming increasingly difficult to tell the genuine from the fake.

VR spaces add a new dimension to these arguments by providing spaces which blur further the distinction between real and virtual. For example, Benedikt (1991) argues that cyberspace causes 'warpage, tunnelling and lesioning of the fabric of reality'. Cyberspace rapidly increases the blurring of reality and virtuality first started with the printed word, and further developed by radio, television and film. Each of these media provide us with a representation of the real; a copy of the original, simulations which Baudrillard terms 'hyper-reality' (more 'real' than reality). For Baudrillard, much of our postmodern world is an illusion, full of objects and buildings masquerading as the real – much like VR. For commentators like Slouka (1996) the danger is that many of us are now willing to accept the copy as original, and put our trust in those that re-represent the world to us – to accept simulation as substitution. We are too willing to accept the virtual as real. Many VR technologies are specifically designed to immerse users in a parallel, artificial world that mimics the real. Their appeal is that actions in virtual space seemingly do not have material consequences. Slouka, however, fears that these are self-indulgent technologies that will make it increasingly difficult to separate real life from virtual existence. Some of these issues are extremely pertinent when VR spaces are non-material and non-representational.

Place/placelessness

To many users, VR social spaces (e.g. visual MUDs like Alphaworld, see Dodge Chapter 21) imbue a 'sense of place'. Spatial behaviour within these spaces largely mirrors real-world interaction (with some notable exceptions such as teleporting). Similarly, social interaction mirrors real world interactions, spaces are divided into territories, and there is spatial governance. Does this then make them places or are these spaces placeless (as touted by analysts such as Mitchell (1995) and Rheingold (1994)? If they are places, and given definitions by commentators such as Jess and Massey (1995) (places are characterised by providing a setting for everyday activities, having, and being characterised by linkages to other locations, and providing a 'sense of place'), are they simulations of real places, substitutions or something else (especially when they are immaterial locations)? Moreover, what are the implications for places in the real world? Social scientists have started to direct their attention to these questions (Castells, 1996; Kitchin, 1998). In particular, they have focused on social and cultural issues such as identity, self, community and belonging, and on political issues such as democracy, territory, ownership, regulation, ethics and privacy. VR spaces *do* have implications concerning the social, cultural, political and economic spheres of daily life because they provide alternative arenas/places in which they can occur. Geographers have only just started to think through notions of place and how place as a concept may be changed by VR.

Public/private

The spaces being created through virtual reality techniques have, and will increasingly have, a role in how social groups interact. The mitigation and arbitration of space will continue, even if VR spaces do not abide consistently by the rules we are used to in the 'real world'. Not since the European colonisation of the Americas began have 'territories' this large been opened to new 'settlement'. Obviously VR spaces are different to the physical space humans inhabit, yet, even in its still relatively primitive

spatiality, new geographies are being created (see Dodge, Chapter 21). Discourses of colonisation in cyberspace present a 'new frontier' for development. The distinct difference from past colonisation is that cyberspace colonies can theoretically be actively engaged and influenced by anybody from anywhere on the globe. These are not places without history, but with many histories in a flux of space–time that is not bound by the physicality of the earth's environment. A historiographic perspective is therefore beneficial and can be an aid in developing the governance and democratic societies espoused by information technologists from a broad community that ranges from Alvin Toffler to Al Gore.

The ideas of community developed under modern nation–state regimes cannot be simply extended to VR spaces. Expectations on civil society, constitutional premises, and democratic ideals are not simply extendible to places created on computer hardware and software by private companies. In particular, VR spaces, whilst proclaiming to be public spaces, are privately owned and regulated. In ways that perhaps the privatisation of the Internet forebode, governance of cyberspace could become a very contentious issue. Whereas recent European colonisation took place under the guise of the nation-state, VR spaces are being colonised under the flag of private corporations. There are no nations in VR nor are there constitutional laws that guarantee people basic human rights. The law of the corporation is the potential law of an autocrat, and as cyberspace becomes a meaningful part of public life and civil society, fundamental legal questions about free-speech and civil rights in cyberspace will become more prominent.

VR spaces are starting to be colonised. Academics, trained in post-structuralist and post-colonialist critique and analysis stand in good position to make unique contributions to the articulation of these cyber-societies and construction of VR. Euclidean spatial geometries are just one possible spatial organisational form that embodies our generic understanding of the physical space we inhabit. Is the Euclidean structuring of sharp boundaries, precise angular and distance measures and clear abstraction of experienced space best suited for cyberspaces? Other geometries and other spatial forms are not only conceivable, but become experientially accessible through virtual reality. There is an infinite number of spaces with individual rules and special constructions of new places for humans to develop.

Concluding remarks

Trying to think through these issues has not been an easy task and, as such, our discussion and the following chapters should be viewed as initial grapplings rather than polished thoughts. Virtual reality, in our opinion, raises a number of philosophical questions (relating to space and representation) and theoretical questions (social, cultural, political and economic implications), that extend way beyond its use as a geographical tool. There is a tendency as a new technology unfolds to concentrate on technical details and the promises such technology offers. It is only at a later date that we usually examine critically the implications of technological development. Whilst we engage with the technicalities of using VR technologies, designing VR spaces, and implementing practical uses, we should not lose sight of wider questions. Such questions open new avenues of thought and provide vantage points from which to survey developments. We would urge the reader to consider some of the issues we have raised in this Introduction in reading the following chapters (and the book in general), to reflect upon their current and possible, theoretical and practical implications, and influence the development of cyberspace.

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21 Explorations in AlphaWorld

The geography of 3D virtual worlds on the Internet

Martin Dodge

Introduction

In this chapter I am not so much concerned with the use of virtual reality (VR) *in* geography, rather I want to explore the social and urban geography *of* a social VR space that is inhabited by thousands of people from around the world. This has received little attention from academic geography (some notable exceptions include the papers by Batty *et al.*, 1998; Hillis, 1996; Taylor, 1997). I have chosen to focus on one particular VR space known as AlphaWorld. I hope that exploring the social and physical geography of AlphaWorld will be revealing for wider notions of the geography of virtual reality.

AlphaWorld is one of a number of commercially-developed systems that are publicly available on the Internet for social interaction. The aim of these systems is to create a graphical environment that can be shared by groups of people for real-time social interaction (known colloquially as 'chatting'). They are variously described as multi-user worlds, networked virtual reality (Schroeder, 1997), metaworlds (Rossney, 1996), avatar worlds (Damer, 1997), many-participant online virtual environments (Morningstar and Farmer, 1991), inhabited digital space (Damer, 1996), shared worlds (Roehl, 1997). In this chapter I refer to these commercial systems simply as *virtual worlds*. They are expressly designed as social spaces that are in some senses fun and easy to use. Also, they are an accessible form of VR in that they can be used on ordinary home PCs and phone lines without the high-powered equipment often associated with 'proper' VR.

We will begin by defining virtual worlds, their unique characteristics and antecedence. The main part of the chapter examines, in some depth, the particular social and geographic characteristics of one of these – AlphaWorld. Those interested in the other virtual worlds may like to consult *Avatars! Exploring and Building Virtual Worlds on the Internet* (Damer, 1997), written in a populist's travel-guide style. To give an idea of the type of imagery and metaphors being employed, the names of some of the other competing systems are – Community Place, V-Chat, InterSpace,