will prove to be as indispensable to the layman as to the researcher.'
Dr. Pierre Lévy, Canada Research Chair on Collective Intelligence, *University of Ottawa*

'A compelling social critique of abstraction – on our screens, in the workplace, and within the very forces of globalization.'
Greg Elmer, *Boston College*

This book looks at the origins and the many contemporary meanings of the virtual. Rob Shields shows how the construction of virtual worlds has a long history. He examines the many forms of faith and hysteria that have surrounded computer technologies in recent years. Moving beyond the technologies themselves he shows how the virtual plays a role in our daily lives at every level. The virtual is also an essential concept needed to manage innovation and risk. It is real but not actual, ideal but not abstract. The virtual, he argues, has become one of the key organizing principles of contemporary society in the public realms of politics, business and consumption as well as in our private lives.

Rob Shields is Professor of Sociology and Anthropology at Carleton University, Ottawa, Canada.

Key Ideas
Edited by Peter Hamilton

Cover photograph:

Routledge
Taylor & Francis Group

11 New Fetter Lane
London EC4P 4EE

29 West 35th Street
New York NY 10001

www.routledge.com
Printed in Great Britain

THE VIRTUAL

Rob Shields

Contents

List of illustrations xi
Acknowledgements xiii

Introduction xv

1 The return of the virtual 1

Definitions of the virtual 2
Virtualisms in history 4
Utopian virtualism 15
Summary 16

2 The virtual and the real 18

Virtually real 20
Slippage 23
The virtual is real but not actual 25
Virtual thinkers: Proust, Bergson, Deleuze 26
Memory 38
Technologies of the virtual 41
Summary 43

3 Digital virtualities 45

Simulation 47
Virtual reality and virtual environments 54
Applications of virtual reality 65
Computer as filter 69

The autonomy of the virtual 73
Summary 79

4 Virtual Africa 81

Globalization 82
Digital virtuality and globalization 85
Virtual Africa 87
Summary 92

5 Joystick generation: cyberpunks, camkids and family life 93

Cyberserfs in Cyberia 95
Internet proofing 99
Cyberpunks or virtual subcultures? 104
Virtual fears: hackers and real knowledge 107
Joystick generation: virtual subculture 109
Everyday virtuality 114
Summary 115

6 Work: virtual working 116

Virtualized work 120
Virtualizing skill: the trades and professions 127
Alienation 130
The quality of work: data overload and instruction rituals 132
Users 135
Computerization of the workplace 137
The 'workstation' 140
The flexible office 141
Ubiquitous computing 143
Clerical workers 145
Bodies at work 147
Technicians and support workers 150
Digital agents 156
Summary 158

7 Business sense for a virtual world 160

Economic virtualism 161
Digital virtuality: banks and brokerages 165
Virtual information: online rumours 168
Digital virtuality at actual firms 170
Managing the virtual and actual 175
Brands and relationships 177
Summary 182

8 Risk culture, trust and the virtual 184

Risk avoidance and 'risk society' 186
Knowledge societies, the media and risk 188
Individuals and the experience of risk 191
A tetrology of risk 194
Risk culture of everyday life 202
Summary 203

9 The future of the virtual 205

Terrorism as virtual war 209
The future of the virtual 211

NOTES 215
REFERENCES 220
INDEX 234

Illustrations

FIGURE

7.1 Home computer ownership 1998–2000 164

TABLES

2.1 The virtual and the concrete 29
2.2 Figures of speech and movement between categories of the real and possible 34
3.1 Chronology of Internet and virtual reality technologies 56
3.2 Aspects of virtual reality 58
3.3 Number of hosts advertised in Domain Name Survey 65
4.1 Internet users 2001 85
5.1 Dates in the history of video-games 110
6.1 Timeline: Virtualization of office work 121
6.2 Teleworkers from home and remote work locations 155
7.1 New approaches, contrasted with established practices 179
8.1 Tetrology of risk and security 195

Virtualities' graduate student symposium and 'Virtual Society? Get Real!' conference organized by colleagues and students at Brunel University under the auspices of the ESRC 'Virtual Society?' programme, and the colloquium on 'Presence and Absence: Fluid Networks' organized by John Law and sponsored by Nokia were outstanding examples of intellectual community. This book is one result of a generous Social Science and Humanities Council of Canada Strategic Grant under their 'Challenges and Opportunities of the Knowledge Based Economy' theme (Further information: http://www.carleton.ca/kbe).

Many others' comments and asides were more carefully measured than they would have guessed at the time. MacArthur and Elizabeth Shields and Bohdana Dutka were invaluable. Zoe Sujon and Jane Hampson kept this and many other projects moving when they would otherwise have been shelved by day-to-day concerns. I prized their comments and was lucky to be inspired by superb graduate students at Carleton University, including Anne Galloway, Walter Henry, Zoe Sujon and others in a seminar on New Media and Virtual Spaces, Adam Fiser, Heather Bromberg, Derek Foster, and others in seminars on cultural theory. Edwina Taborsky, Dan O'Connor, Suzan Ilcan, Petra Halkes, Joost Van Loon, Greg Elmer, Ian Roderick, Nicholas Packwood, Penny Ironstone-Catterall, Ken Hillis, Kevin Hetherington and many others gathered around the warmth of conversation and debate in the journal *Space and Culture*. Mari Shulaw, Ann King and the editorial staff at Routledge balanced patience and perseverance to get the book published. Finally, the patience of my family, the extended Dutka family, Bohdana and Sophie never wavered. They provided sustaining love, support and inspiration, virtual and concrete, over the entire course of the project.

INTRODUCTION

The virtual has become a key organizing idea for government policies, everyday practices and business strategies. What do we mean when we describe something as being 'virtual' – such as 'virtual space' or 'virtual team'? This book aims to help you better understand the virtual and why this category of things is suddenly important in business, government and in everyday life.

Today, the word 'virtual' is often used as a proper noun – 'The Virtual' – a place, a space, a whole world of graphical objects and animated personae which populate fictional, ritual and digital domains as representatives of actual persons and things. Commentators have not failed to remark that these avatars, video-game characters, software agents and virtual objects not only stand in for flesh-and-blood persons and physical places but they can have significant and shocking impacts on the real-life status and well-being of people. However, the more mundane case of virtuality includes lines of code in a database which record and police a person's financial transactions and debts. This 'credit profile' is one's virtual identity for transaction purposes as far as banks and merchants are concerned.

The chapters that follow examine the origins and meanings of 'the virtual' as a concept and what it means for people in everyday life under global capitalism. Beyond merely defining and mapping the spreading popularity of 'the virtual' as an idea, this book is a contribution to intellectual debates on the implications of a shifting relationship between the virtually real, and the material, the here-and-now world of the actually real. Cases of

the virtual will be discussed in relation to three main categories: it will be contrasted with the 'concrete' and related to 'abstractions' and 'the probable'. The virtual may be found in ritual, religious debate, in architecture and art. The digital virtuality of the global Internet, simulations and virtual reality is only the latest incarnation of the virtual.

Examples from history show that an understanding of the virtual was commonplace. However, the historical importance of today's shift may be found in the rising popular faith in intangible essences, a focus on popular opinion, perception and insecurities as well as on tangible dangers or probable risks. Governments face a dilemma in that policies cannot be created to do more than assuage a sense of insecurity; businesses face the challenge of branding their products as much as in delivering actual quality or service. Both must balance the virtual and the concrete, but many fail, as case studies of Enron, terrorist attacks, pollution scandals and telecommuting will demonstrate.

We do not face a digital virtual utopia, and it is likely that fears over a 'digital divide' in access to the Internet will be judged in hindsight to be part of a campaign to boost technology. But the virtual raises profound issues regarding our attitudes and actions towards risk and our understanding of the importance of balancing the virtual with the concrete (in economics and everyday life), and the virtual and the abstract (in our culture and values).

1

THE RETURN OF THE VIRTUAL

> A whole new lexicon has arisen that seeks to capture the new ways of working . . . including 'Web enterprises', 'virtual organisations', 'virtual teams', 'teleworking' and so on.
>
> (Jackson, 1999: 3)

Do you think that there is anything new about the virtual? If so, you will be surprised to learn that in 1556 Thomas Cranmer was executed in large part because of his affirmation of the virtuality of the Eucharist. Similar charges were levelled against the reformation theologians Luther and Zwingli. Indeed, debates surrounding the virtual and practices of virtuality have a long history. This chapter introduces the historical importance and associations of the virtual as an aspect of cultures in Europe and other parts of the world. Sections introduce historical virtualities and develop the argument for the historicity of the virtual, as follows:

- Key definitions of the virtual include not only the virtual as essence or the 'essentially so' but the notion of 'virtue'.
- Virtual spaces and understandings of virtuality have a long history in the form of rituals, and in the built form of architectural fantasies and environments.
- Examples include: Christian reformation debates on the virtual in the Eucharist; baroque *trompe-l'œil* simulations and virtualities; liminal zones and rituals.
- Virtualism is the late twentieth-century fad for computer-mediated, digital virtuality, which draws on and repeats the historical forms of the virtual.
- However, it afforded a utopian moment despite the manifest contradictions of consumer hype and technological optimism.

DEFINITIONS OF THE VIRTUAL

> *The virtual*: Anything, 'that is so in essence or effect, although not formally or actually; admitting of being called by the name so far as the effect or result is concerned'.
>
> (*Oxford English Dictionary*)

Dictionaries define the virtual in everyday life as 'that which is so in essence but not actually so'. Thus we speak of tasks which are 'virtually complete'. More philosophically, the virtual captures the nature of activities and objects which exist but are not tangible, not 'concrete'. *The virtual is real but not concrete*, as we will be arguing in Chapter 2. Dreams, memories and the past are famously defined by Marcel Proust in his correspondence on *Remembrance of Time Past* as virtual: 'real without being actual, ideal without being abstract.' Proust's comment provides an important historical model for the use of the term today.

The noun 'virtual' comes to us from the Latin *virtus*, meaning strength or power. By the medieval period *virtus* had become *virtualis* and was understood in the manner we might understand the word 'virtue' today. In this older usage, a 'virtual person' is what we might understand in more contemporary usage as a person of some outstanding quality:

> '*Virtual*: Latin 1. *virtus* 2. *virtuosus*. Possessed of certain physical virtues or capacities; effective in respect of inherent natural qualities or powers capable of exerting influence by means of such qualities (rare)'.
>
> (*Oxford English Dictionary*)

The related term, 'virtue', is a personal quality, 'The power or operative influence inherent in a supernatural or divine being' (*OED*). Virtue is 'an embodiment of such power' (*OED*). In the less celestial terms of ethics, virtue is the 'conformity of a life and conduct with the principles of morality; voluntary observance of the recognized moral laws or standards of right conduct; abstention on moral grounds from any form of wrong-doing or vice' (*OED*). Virtue is also 'chastity, sexual purity and industry, diligence', or 'personified moral quality' (*OED*). Examples of this usage trace back to 1398. As an adjective, a 'virtual person' was what we might today call a morally virtuous or good person: a person whose *actual* existence reflected or testified to a moral and ethical *ideal*. Virtue was the power to produce results, to have an effect. Some even argue that 'the virtue of something is its "capacity" or efficacy' (Haraway, 1992: 325). But *Virtu* is more an open, creative potentiality.

Today, 'the virtual' is still redolent of its barely masked links to the concept of *virtue* (with which it shares a root in the medieval Latin *virtus* – from *vir*, 'man'). Few remember that an order of angels was said to be called 'The Virtues'. However, women's chastity is still mentioned in dictionary definitions of 'virtue', a difficult matter to verify empirically, which has long been the essence of patriarchal preoccupations. This strange twist in definitions in which we have ended up at 'chastity' points to the mixture of ambiguity and high stakes in social definitions of the virtual:

> no matter how big the effects of the virtual are, they seem somehow to lack a proper ontology. Angels, manly valor, and womens' (*sic*) chastity certainly constitute, at best, a virtual image . . . the virtual is precisely not the real; that's why 'post-moderns' like 'virtual reality.' It seems transgressive.
>
> (Haraway, 1992: 325)

VIRTUALISMS IN HISTORY

The virtual certainly has been controversial in the past. Where today's users of virtual reality or members of online virtual teams complain of carpal tunnel syndrome, in earlier epochs other notions of the virtual could carry the punishment of death. The argument here is that the virtual has long been significant as a cultural category, as part of the human mental toolkit. Furthermore, two brief examples suggest that we could learn a great deal about the social actualizations of the virtual from historical cases. The virtual has long existed in the form of rituals, and in the built form of architectural fantasies and environments..

In fact, if the virtual has meanings of 'virtue', of being 'almost-so' or 'almost-there', one does not need to look far to find virtual worlds which surround us or their historical counterparts. Virtual worlds are simulations. Like a map, they usually start out as reproducing actual worlds, real bodies and situations; but, like simulations (see following section and Chapter 2), they end up taking on a life of their own. Somewhere along the way they begin to diverge, either when it is realized that no map can be so complete that it represents an actual landscape fully, or when they become prized as more perfect than messy materiality. As virtual worlds, they become 'virtuous', utopian. Virtual worlds become important when they diverge from the actual, or when the actual is ignored in favour of the virtual – at which point they are 'more real than real', as Jean Baudrillard, a theorist of the ironies of late twentieth-century cultures, has pointed out. An example is found in the way representations of the health of stock-markets, as expressed in, say, the charts and econometrics of a computerized news service, routinely stand in for the actuality of the economic life of nations half a world away. This 'hyper-real' quality implies that the virtual has to be taken into account on its own terms, because it is no longer simply a reflection of the actual (see Chapter 7).

Historical impacts of 'the virtual': the Reformation

Rather than a matter of angels or other virtual beings, the debate concerned the mystical transubstantiation at the centre of the Christian Eucharist – the conversion of bread and wine into the body and blood of Christ. Actually real, material body and blood, insisted the Church. 'Virtually real', argued Reformation theologians.

In October 1517 Martin Luther nailed his Ninety-five Theses to the door of the church in Wittenberg. At the heart of his objections was the catholic doctrine of the Real Presence of Christ in the Eucharist. Mass as a sacrifice or as a good work which could be charged for was anathema to Martin Luther and one of the key errors to which he objected (Luther, 1523: 441, 32n). Reformers viewed theories such as transubstantiation as an unnecessary detour to explain the miracle of the 'Real Presence' of Christ at each and every re-enactment of the Last Supper in rational terms, when any miracle by definition defies any such explanation. The substance of the Eucharist 'is, and remains, bread' (Luther, cited in Brooks, 1992: 20; see 1 *Corinthians* 10.16). Accordingly, the faithful need only believe.

As Protestantism spread, controversy arose over the status of the Eucharist. One famous trial for heresy took place in September 1555. Archbishop Thomas Cranmer was examined for heresy in the Church of St Mary at Oxford. Seated 'in the East end of the said church, at the high altar', on a chair set on a 'solemn scaffold . . . ten foot high . . . under the sacrament of the altar' (Cranmer, 1846: 212; cf. Foxe, 1877, VIII: 44, cited in Brooks, 1992) the Archbishop was cross-examined on his

teachings regarding the reality or virtuality of the Eucharist. Orthodox Catholics held that it was 'necessary to be believed as an article of faith, that there is the very corporal presence of Christ within the host and sacrament' (Cranmer, 1846: 246). 'Transubstantiation' as a belief and doctrine had its origins in the theology of St Thomas Aquinas. In each and every Mass, Christ was present. In each and every Mass, a sacrifice took place.

The beginnings of the Anglican tradition lie in Cranmer's attempt to tread a fine line between the Protestant influence of Martin Luther and Zwingli and his own convictions that the truth of the Eucharist be judged independently, empirically and with 'discrimination' (Robinson, 1846–1847: 13). But persuaded by dissenting preachers, this stout defender of Catholicism came to agree that 'the Scripture knew no such term of "transubstantiation"' (Foxe, 1877, V: 501). 'Transubstantiation' was the transformation of mundane bread or a host into a piece of the body of Christ. The essence of the debate was the question of whether this occurred literally and superstitiously. The Calvinists espoused a doctrine of 'Virtualism' – of Christ's virtual presence in the Eucharist. Cranmer's understanding gradually changed away from a belief in the Real Presence of Christ in the bread and wine towards a position favouring the symbolic and virtual presence of Christ in the Eucharist.

Although the result was actually disastrous for the Archbishop, a hundred years later in 1654 a source cited by the *Oxford English Dictionary* could publicly proclaim: 'We affirm that Christ is really taken by faith . . . [although] they say he is taken by the mouth and that the spiritual and the virtual taking him . . . is not sufficient.'

The doctrine of virtualism raised questions concerning the way we understand presence – must it be concrete and embodied or was 'essentially present' good enough? Was there anything there if it was virtual? The same questions are raised today concerning online environments and virtual reality, and are treated in the chapters that follow. Are they real? Should they be given the same regard and dignity as other spaces of interaction?

Baroque cyberspaces

One of the most interesting historical uses of the virtual anticipates the way in which people now refer to virtual realities or virtual teams. This is found in the discussion of mirror reflections as 'virtual images' and of the way we experience dreams as 'virtually real'. In optics, a 'virtual image' is formed by the apparent, but not actual, convergence of light rays to make an apparent but not exact counterfeit of the real. This is not simply a matter of perfect resemblance, however, for the image is reversed left to right. The image is virtual in that it suggests a potential mirror-world on the other side of the glass, an early precursor of the power of simulation. Illusions, mirrors to extend the space of a room (such as the Palace of Versailles' Hall of Mirrors) and *trompe-l'œil* decoration fascinated eighteenth- and nineteenth-century writers.

If cyberspace is a 'consensual hallucination', in the words of the novelist who coined the term, William Gibson (1984: 67; see Chapters 3 and 4, this volume), then cave paintings might well count also. But skipping backward only 200 years, and much closer to our time, another historical moment celebrated the virtual to produce the first elaborate virtual environments – often in the form of the interior decoration of churches. This indulgence in *trompe-l'œil* contrasted with the dislocation and wars of eighteenth-century Europe, the first state powers asserting a harmonious, ecstatic world, in part as an expression of their power. These simulations were made to appear to defy gravity.

> The heady lure of these mystical works is based on their elaborate continuities of human and fictive space. . . . They pair techniques involving the creation of a dreamscape, and the provision of [human] figures for identification that call the viewer to enter fictive space, changing with their movements, inviting their co-authorship. They are fundamentally navigable . . . 'spaces of persuasion'.
>
> (Maravall, 1986: 74–5, quoted in Cubitt, 1998: 75)

Baroque architecture and decoration rendered a dramatic space of swirling movement beyond the cares of the subluminary world into paint, plaster and marble. Not only did painted scenes of heavenly delights on vaulted ceilings trick the eye; the buildings were celebrations of forced perspective both in their floor plans and sections. Dominant lines of cornices, and rows of columns were shifted off of a right-angled grid to converge slightly, giving an impression of grandeur and distance.

> At its pinnacle, the Baroque offered the thoroughly mediated interactivity of audience participation in the spectacle of its own rule. . . . [It] 'was, like postmodernism today, at once a technique of power of a dominant class in a period of reaction and figuration of the limits of that power' . . . we need to understand the culture of spectacle in the first Baroque as the beginnings of our own. To understand that the vertigo of imperial expansion, the terrors of absolute power and the morbid fascination with decay and mortality have been transformed into these virtual architectures is to catch a glimpse of the emergence of our own obsessions with the universe as our object of possession, our anxieties about absolute commodification.
>
> (Beverley, 1993: 64, quoted in Cubitt, 1998: 75)

Virtual environments have been less spectacular in their treatment of space due to technical limitations. However, they share the concern of the baroque church ceiling to draw the viewer into a spectacle which transcends the everyday spaces of the temporal world, at the same time pushing that participant away as a 'fallen' mortal. The mind and soul could escape, but in both cases the body is a dead weight which pulls one back to Earth. Angels indeed – these spaces solicited a separation of the mind and body into a virtual and concrete pair: the soul and the flesh. For the former, salvation came through the powers of the state and its church; for the latter, abjection and domination as a 'bare life' (cf. Agamben, 1998) worthy not of lofty institutions such as the state but of the soil.

Some of the first commercial immersive environments, such as nineteenth-century panoramas, drew huge paying crowds to see the world as controlled spectacle. Like a diorama in a museum which has been constructed and arranged to show the ecology in which an animal lives, panoramas attempted to create a virtual environment via a 360-degree painting viewed from a central viewing platform. Into these circular paintings 'it was possible to project yourself imaginatively, exploring the *mise-en-scène*' visually, as earlier Europeans had marvelled in the baroque ceilings of their basilicas. In

> a curious inversion of the panopticon, placing the subject in the centre of the field of vision, radiating out into a world prepared for ocular discovery, placing . . . the power of universal vision firmly in the eye of the mass spectator, a bizarre democratization of the aristocratic gaze, first as panoptic professional, and then as the world-spanning, mobilized look of the sovereign individual' – the paying spectator.
>
> (Cubitt, 1998: 78–79)

Panoramas

The gazebo-like central viewing platforms of famous circular panoramas such as, for example, the *Mesdag Panorama* allowed viewers to look out on a circular painting mounted in a rotunda. The 14m-high *Mesdag Panorama* presents a seaside scene. This virtual beach has been on display since 1881 in The Hague, Netherlands. It allows one a vicarious view of a timeless, harmonious and cultured nature. Patrons would ascend from a staircase below into a viewing platform constructed like a gazebo which blocked out the ceiling of the building and prevented the viewer from getting too close to the painting (Halkes, 1999: 84). This is not an interactive environment – nothing in the painting changes to respond to the viewer, nor was the scene ever peopled by actors to enhance the illusion. It is not simply a representation but a simulation in which real sand conceals the

bottom edge of the painted beach scene (Halkes, 1999). The panoramas were extravagant attempts to not only mimic reality but to outdo actual experience (in this case of the popular seaside destination of Mesdag), by relocating the viewer to a panoptic and omniscient position.

As Crary argues in his book *Techniques of the Observer*, vision had been understood as the privileged sense of truth and of divine revelation. Seeing was believing. The pinhole camera obscura was the icon of classical vision because it revealed the physics of light and images. By contrast, he argues, the panopticon and stereoscope broke with this timeless model. These are the icons of the embodied, binocular vision of the nineteenth century. Unaided vision was shown to be all too human. It depended neither on revelation nor on laws of optics but on physiology and the imperfect, ageing biology of the human eye. The inverted images seen through pinhole cameras or in a camera obscura demonstrated this in physics and optics (Halkes, 1999). The stereoscope (an apparatus for 3D viewing by combining two photographs of the same scene, one slightly displaced from the other) and zoetrope (in which a series of drawings of an action, spinning on a circular tape or shade, were viewed through a slit, giving a cinematic appearance of moving images) depended on human binocular vision to make sense of otherwise nonsensical images (Crary, 1992: 67ff.).

> the pictorial panorama was in one respect an apparatus for teaching and glorifying the bourgeois view of the world; it served both as an instrument for liberating human vision and for limiting and 'imprisoning' it anew. As such it represents the first true visual 'mass medium'.
>
> (Oettermann, 1997: 7; see also Halkes, 2001: 60)

But more recently, Halkes incisively argues that the panoramas did not break with classical vision once and for all, nor did they testify to an alienation from an all-embracing truth. The panopticon was not part of a linear evolution of the sense of vision. Rather the panopticon was an example of more complex desires in the nineteenth century for a classical vantage point analogous to the eye of God – even as it was being displaced at the time. Advances in technology and medical understanding removed vision from the order of divine revelation while visible appearance was displaced in favour of the microscopic and invisible in the sciences (see Mizroeff, 1999; Friedberg, 1993).

In some ways, today we are back to the panopticon. The rise of digitally simulated objects and environments raises similar issues. They displace unaided vision and the frail bodies as the standard of insight and performance. Digital simulations both liberate and incarcerate, displacing the original material world in favour of virtual environments (see Chapter 3).

Liminoid virtualities

Although these are only two examples, none of the many historical virtualities required the purchase of computers or online subscriptions. But we can clearly find historical types of virtual realities, fictions, simulations and perception games which tricked the mind and body into feeling transported elsewhere. Retrospectively, it is clear that there has been a history and succession of 'virtual worlds' which anticipate the ability of information and communications technologies to make present what is both absent and imaginary. The cinema is one example, but any number of rituals create, through a willing suspension of disbelief (for Euro-Americans), milieux in which rules other than those that govern the face-to-face interactions of actual bodies are the norm (for example, flashbacks and other temporal reorderings, leaps from scene to scene and 'superhuman' powers).

For most cultures, however, collective 'conjuring' of altered modes of perception and understanding are more common practices. These virtual spaces that populate the anthropological literature are lived more strongly than the mere 'consensual hallucination' envisioned for cyberspace (cf. Gibson, 1984). Rituals inaugurate liminal zones which are the performative

settings for rites of passage such as puberty or marriage (Turner, 1974). These zones allow what is often a symbolic death or removal from one social status and birth into another. Initiates first lose their status and, after undergoing the appropriate rituals, are received back into the society and the space of the everyday with a new status. In between is a 'time out of time' on the '*limen*' (threshold) of membership or a new status. In this space, initiates are instructed in their new identity and responsibilities. The bride and groom's walk down the aisle at a wedding is a common example familiar in European and American societies. The wedding service is a liminal time and space. In it, the bride and groom enter according to strict customs. Harking back to ancient patriarchal traditions, the bride is escorted down a central aisle and 'given away' by her father or another representative of her family. The couple receive instruction from the priest and promise to care for each other, even if in what seems like code today – 'I promise . . . to have and to hold' and so on. The bride and groom then exit down the aisle as a new, socially recognized couple.

Like Janus, the double-faced god of doorways and portals, the border between the everyday and sacred, ritual spaces face both inward and outward, creating an equivocal, ambiguous zone – a zone is not just a line, but a strongly marked, interstitial space. '*Limen*' are thus 'threshold' spaces in which one is neither 'in' nor 'out' (Turner, 1974). A key part of the transformation is the suspension of everyday social norms to allow a rearrangement of the social order, conferring new status and allowing society to acknowledge and recognize the new identity of those who have been the focus of the ritual. As such, liminality offers a utopian moment in which the weight of limiting social regulations is lifted. Liminality is crucial to the adaptive powers of a culture.

Liminal zones are virtual environments or spaces. The bride and groom remain quite close by; they do not literally and materially travel from one place to another. The rules of quotidian face-to-face life are suspended or even inverted in a carnivalesque of norms. In their place, special rules of engagement rule the moment and the space. Victor Turner's famous dictum states that liminality is 'betwixt and between' stages in the life process, located between the urban/civilized/members and the wilderness/nature/outsiders (Turner, 1974). Of less life-changing status, there are many examples of *liminoid* spaces and genres in any society – the Web, vacation resorts, theme park environments not to mention specific holidays and events (Shields, 1989). In contemporary society, liminality has been stripped of its transformative power to become a commodified experience, and no more so than in the tourism and leisure industries (Shields, 1991) and online (Shields, 1996; Silver, 2000).

Like liminal zones and events, virtual spaces are 'liminoid' in that they are participated in on a temporary basis, and distinguished from some notion of commonplace 'everyday life'.[1] Virtual space is not only betwixt and between geographical places in a non-place space of telemediated data networks, but participants take on specific 'usernames' or identities, and many surreptitiously engage in activities they might not otherwise consider. Computer-mediated, digital forms of virtuality are continuations of long-running processes; to be understood they need to be linked back to a history of cultural forms such as the liminal.

However, is this loss of the liminal a degradation of the virtual in digital virtual spaces? The technology and fixed programming code of virtual realities supercharges and often overpowers the qualities of liminality. The greatest power of digital virtuality – and perhaps its most widely discussed feature – has been in providing a matrix in which new modes of being and practices of becoming could be experimented with. In its early stages through the 1970s and 1980s, few and tenuous guidelines were provided for *metaxis*, the leap from the concrete to the virtual. This was usually a leap of imagination but in the case of online gaming it became merely a question of adjusting a computer interface (see Chapter 2). Metaxis is the key conceptual sleight of hand in allowing users to imagine leaving behind identities in one realm to become something/someone else or to play an

entirely different role (for example, in a role-playing game). The charged, affectual space of online games and chats gained its character as an extension of the rhythms and encounters of virtual bodies, sociable exchanges and animated tracings of hypertext links, none of which the space pre-existed except abstractly. A liminal zone provides the potential for assuming new identities, and thus the virtual became a liminoid space; not one directed at rites of passage, but rather at experimentation – like that other, sacred liminoid space of advanced economies, the scientific laboratory.

The virtual rebounds on the material and the abstract, changing the Enlightenment tradition of simple dualisms not only of here and there, inside and outside, but of concrete and abstract, ideal and actual, real and fake, transcendent and immanent. The either–or model is shifted in a tangible and everyday manner into a system of hybrids of the old dualisms which are best understood as intensities and flows (see Shields, 1997). The virtual infects the actual as a metaphor which has moved from the realm of digital domains and computer technologies to become an organizing idea for government policies, everyday practices and managerial strategies. The virtual shifts the commonsense notions of the real away from the material. The virtual, as in a 'virtual organization', is more heavily invested with notions of collective performance and *inhabitation* than a priori architectural objects such as 'the factory' or 'the office'.

Like other liminoid zones under capitalism, such experiences and sites generally become commodified as package tourist attractions, not sacred places which are the sites of cures or pilgrimage destinations. From the virtual as a threshold to the effervescence of cultural margins, the Internet becomes more and more a pay-per-view, pre-screened information service. Much of the popular discussion of computer-mediated communications amounts to domesticating virtual spaces and bringing it out of its liminoid status – a realm of illicit information (how to build a nuclear bomb and so on), the resort of the repressed that contemporary culture generally excludes or refuses to grant a place to (the obese, those physically challenged in one way or another), an arena in which forbidden desires are unleashed, and a subculture populated by mythified figures such as the hacker.

UTOPIAN VIRTUALISM

The hype around digital virtuality over the past decade has been more about myth and less about actual cyberspaces. As a fad and myth, virtualism is itself virtual. Symptoms of virtualism include exaggerated expectations of anything described as 'virtual', and unrealistic expectations that digital technologies will solve social problems. The boom in technology stocks and enthusiasm for virtual reality hinted at the ongoing expectations of the virtual. In line with its historical definitions, it carries a certain promise of positive potential or virtue. Portrayed as enabling a human virtuosity beyond the limits of the body or gravity, the legacy of the baroque echos through the claims of Silicon Valley entrepreneurs.

The explosion of virtual reality as well as more mundane virtual spaces is that it allowed a utopian moment of gaiety that was arguably the most significant Western, and even more specifically American, counter-cultural moment since the 1960s. Although it was reabsorbed into the commercial mainstream, its utopian and liminal moments commodified and packaged into experiences for sale or vague promises of excitement attached to the purchase of a home computer, virtualism marks the culture of the close of the twentieth century as surely as stock-market booms marked the economy.

Unlike the 1960s this moment of cultural effervescence and optimism was not limited purely to one demographic group such as the young or the wealthy but was participated in by a range of consumers and producers who stretched from the young inventors of video-games (in their early teens) to financiers and investors who supported and 'bought in', socially and psychically, to the utopian dreams of, first, Silicon Valley entrepreneurs and, later, dot-comers. Statistics showed that older people, poor

households and young black men neither dived into the consumer frenzy for technology (the devices themselves) nor acquired the skills to enter and keep abreast of the rapidly evolving industry. Computers came to appear as essential, as a necessity. Despite all this hand-wringing, the last two decades of the twentieth century witnessed an explosion of utopianism into the mainstream which has been only partially quelled by the familiar journalistic doubt, accusations of political naivety and an unwarranted faith in technology to transform social relations and redress inequalities from a personal to a global scale.

A remarkable element of this process was how quickly the paradigms on which information and computing technologies were based evolved and matured. Short, two-year cycles of novelty followed by obsolescence which had been finally rejected by automobile consumers reappeared in the computer industry. Software and machinery that did not work or was so insecure as to be a dangerous liability together with inflated promises and hype echoed some of the cars of the 1950s and 1960s. The car, after all, was the greatest vehicle not only of people and materials moving from place to place, but of myths and dreams – virtual delights and transports. However, as Poster notes,

> the history of electronic communication is less the evolution of technical efficiencies in communication than a series of arenas for negotiating issues crucial to the conduct of social life; among them, who is inside and outside, who may speak, who may not, and who has authority and may be believed.
>
> (Poster, 1990: 5)

SUMMARY

This chapter has considered the virtual as defined in dictionaries and encountered in historical forms of social interaction. The basic dictionary definition of the virtual is 'anything that is so in essence . . . although not . . . actually' (*OED*) as in a task which is 'virtually complete'. A related term, 'virtue' suggests the intangible or latent quality of virtuality – there but not necessarily obvious to the senses. Historical virtualisms abound in simulations and representations that take on a life of their own (such as Baroque church interiors and Panoramas). But religious debates over the nature of virtual presences, such as during the Reformation, have been ugly in the past. The close affiliation between the virtual and liminality is especially significant for cultural and anthropological analyses of the 'prehistory' of contemporary European and American fascination with digital virtualities. In its use to conjure altered perceptions and understandings, the virtual overlaps with liminal rituals such as rites of passage. Liminal zones are social spaces in which initiates are 'betwixt and between' old and new social statuses and identities. Today's commercialized, digital virtualities are liminoid in that they derive from the liminal but do not entail rites of passage. The utopian tint and optimistic outlook of late twentieth-century virtualism indicates its positive potential across social groups. However, later chapters will consider the exclusive quality of digital virtuality. While suspicious of a sales pitch that mobilizes fears of a 'digital divide', the question of who speaks and who gains entry to digital virtual environments and simulations is an important one. More profoundly, the implications of the virtual for our attitudes and actions towards risk and our understanding of the importance of balancing the virtual with the concrete (in economics) and the virtual and the abstract (in culture) will be probed in the chapters that follow.

2

THE VIRTUAL AND THE REAL

What is 'the virtual'? The virtual calls into question our pre-conceptions about the actual, demanding that we broaden our understanding of reality. Beginning with the basic meanings of the virtual and its contrast with the actually real, this and the following chapters examine:

- The cultural impact of computerization as a new digital virtuality.
- The significance of the virtual in leisure time, family life and for simulation and video-gaming subcultures.
- Workers' experience of and roles in the virtual workplace.
- The virtualization of firms and organizations, including successes and failures.
- The morality and ethics of virtual social relationships at a distance over the Internet, including attempts at the moral regulation of the Web.
- The implications for everyday life off-line, including the experience of unwired societies and those excluded from the virtual worlds of computer-mediated telecommunications.

This chapter examines how the virtual is often contrasted with the 'real' in commonsensical language by many writers who have not paused to examine the implications of the terms they are using. Other commonsense cases include the way we talk of the 'virtually real', the 'virtually completed' task or the 'virtual team'; and the way in which we understand ritual, faith and our memories. We are interested in slippages in meaning, the way in which new understandings of the virtual are coming to prevail not only in professional and public cultures but in everyday life. This process occurs through myriad techniques, not only through digital communications.

As argued in Chapter 1, virtuality appears in various forms throughout history which are sometimes explicitly called virtual. The idea and word are by no means new. But today's tight connection of the virtual to digital hardware and software is a new form. It represents a return of 'the virtual' in our social activity. Some would just dismiss the term as an overused and underdefined label. However, this ironically recognizes that, at a minimum, 'the virtual' is one of the most important marketing terms for the high-tech sector which is claimed to drive the development of a putative high-tech, knowledge-oriented 'virtual society'.

Still, 'virtual' is often meant to signify an absence, unreality or non-existence. Everyday talk in the media equates the 'real' with concreteness, material embodiment, tangible presence and reliability. These definitions suggest that the virtual is a type of wooden nickel, not 'the real' thing, valueless and without dignity. So why is the term so widely used? Fortunately, popular wisdom is something different from talk and we routinely deploy the word 'virtual' as a place-holder for important forms of reality which are not tangible but are essential and necessary to our survival.

Beyond this sceptical stance, the popularity of the virtual as an adjective applied to almost everything points to barely acknowledged but widespread desires and beliefs. The multiple uses of the term 'virtual' hint at more than the digital: the term

has connotations of effectiveness and success. 'Virtual' is a space; it is places, relationships, and implies values. To understand the term and the power of its associations is to be armed with a tool for cutting through hype to the lasting core of technological and economic change. I will argue that it is indicative of a sea change in cultural attitudes: we are becoming more comfortable with absence, more nuanced in our use of abstraction, and more dependent on the past as a bastion of identity in the face of a global cultural and environmental future which no one can predict.

VIRTUALLY REAL

As the discussion of definitions in Chapter 1 illustrate, the virtual is often defined in contrast with '*the real*'. However, this then raises the issue of what 'the real' is. For psychologists and physiologists, a physically real object is one that can be verified by others and its movements tracked by most firsthand observers who perceive it (cf. Shapiro, 1995). But when one transfers a computer image or file, can it be said to move in the same physical way? No. The virtual is neither absence nor an unrepresentable excess or lack.[1] The file moves and is conventionally verifiable for most computer users, and is 'real', so we need to break down the commonsensical notion 'reality' into more fine-grained concepts. Although few reflect on it, it turns out that this is something most people do anyway – we are far more sophisticated in our day-to-day manipulation of virtual and actual objects than we might suspect. Although this topic is worrying only for a few, perhaps not very sophisticated academics, one commentator has argued that this is the true value of the virtual – to directly confront the question, 'What is reality?' (Woolley, 1993). For example, virtual reality and simulation technologies (e.g. flight simulators, role-playing games and 3D architectural displays) attempt to replicate the sensory information of the physical world in order to present a constructed 'information-world'. While common sense appears to supply a ready answer to the differences between the virtually real and the actually real, the issue of 'the real' has generated centuries of philosophical debate. Entire fields of philosophy have developed around this question. Ontology (studying 'what exists?') and epistemology (studying 'how we can be certain' about what exists) have examined such questions from many sides and provide a wealth of insights into the many forms reality takes.[2]

The virtual troubles any simple negation because it introduces multiplicity into the otherwise fixed category of the real. As such the tangible, actually real phenomena cease to be the sole, hegemonic examples of 'reality'. Further, the logical identity of the real with these phenomena is broken apart, allowing us to begin to conceptualize processes such as becoming in terms of emergence and dialogism (cf. Bakhtin, 1981) rather than only as a dialectical as a negation of existing identities (Laclau, 1996: 20–46).

Operating with a simple notion of the tangible and the original as the one and only 'actually real' leads to a series of conundrums over anything produced from a model or in a series, such as in the case of mass production. The solution is not to debate the reality of the virtual, but to develop a more sophisticated theory of the real and the ways in which the *virtual* and the *concrete* are different really existing forms, how they are related to each other and to non-existing *abstractions* and *probabilities*. To do this, we want to build up, out of its shadings and partial uses, a model of what people understand by 'the virtual'. This will allow us a strategic insight into how commonsense notions of the world at large are changing, and how people's understandings of their powers and possibilities in that world are following suit, with the result that they act in ways which would be unexpected according to previous models of reality – one which left out or did not value the virtual. Perhaps this will help us to understand what we mean by 'reality' these days.

In everyday usage, 'the virtual' has many meanings. Something 'virtual' might be distant, it might be something invisible

but important, or it might refer to informal arrangements or latent factors. Even on a strictly local scale, the idea of 'virtual teams' has become an influential organizing idea for competitive businesses. Virtual teams are not only groups of workers who communicate through computer email and so on, but all teams that are assembled to address particular types of problem, to respond to crises or to pursue very specific projects – springing into action with the lightness of electrons, and winding up their operations at the conclusion of a project. If these teams are fleeting they can be recalled back into existence, like a computer file redisplayed on a video screen (see Lipnack, 1997). They are virtual if only because they are neither face to face nor propinquitous (local); rather they are far-flung, temporary and latent. Their supporting infrastructure is a rented communications link and thus they leave few tangible traces other than email records and archived video-conference recordings. A search of the Internet reveals not only 'virtual worlds' but also virtual hospitals; florists; virtual tours and virtual tourists; many games (Virtual Pool); towns (e.g. Virtual Springfield Mass., or Santa Cruz Cal.); music, malls, virtual girlfriends (Bernadette.net in Australia has long been one of the most famous websites); an ancient Egyptian 'virtual temple' (thoroughly contemporary and accessed via an American server), and a virtual Jerusalem (which leaves one wondering about whether or not heaven could be described as 'virtual').

Upon close inspection, popular uses of the virtual make it clear that people understand this as intimately tied to the tangible and actually real. Anything 'virtually so' is very close to being really so. 'Virtual' covers all things that are 'almost so' – unfinished jobs which we none the less call 'virtually complete', a second-hand car which is 'virtually new' and so on. Etymologically, 'the virtual' is exactly this: it is what is so in essence but not in form. The '*actual*' contrasts with the essential, conceptual or '*ideal*' quality of these common notions of virtuality. The opposite of the virtual, however, is the *concrete*.

It is important to distinguish our approach here from Plato's philosophy of forms, in which ideal types informed and animated the actual manifestations encountered in material reality. The ideal of trees was a required 'essence' hidden in any given tree. Where Plato argued that this was the ontological basis of reality, we are showing how humans have a cognitive ability to substitute 'what is so in essence' for actual things themselves. We understand that x, y and z stand for quantity to be substituted into a calculation rather than requiring the actual objects to be lined up and enumerated. We enjoy the lifelike as much as the living, and with collect representations of the far away and the past. All these are virtualities. Fiction, imagination, memory, engineering and mathematics depend on this cognitive ability, as do representations, conceptualizations and all ideations (all non-actuals of every sort). Abstraction and the fabrication of purely cognitive representations and signs are interlinked with the same capacities required for the virtual.[3] Actual materiality accounts for the gross mechanics of the natural world, but neither quantum mechanics, nor social science, nor studies of digital transactions could be complete without attending to the virtual as much as to the concrete.

Even though the virtual retains a quality of something that is 'almost so', it can quickly come to appear to have real substance in and of itself. To describe something as 'virtual' indicates that it is not strictly according to definition, as in a 'virtual office', which is to say not literally an 'office' as one might understand an office to be, but an office 'in effect'. This example illustrates how being 'not quite', say, an office can shade into being a new form of the office which necessitates a change in the definition of offices and possibly of office work. Raymond Williams, one of the founders of cultural studies, once pointed out how these are cases 'of a definition of quality which becomes, through real usage, based on certain assumptions, a description of the world' and a self-fulfilling prophecy, moving what was once only a

perception into being a worldview (Williams, 1981: 68). The virtual is by no means the first case of this shift from a specific description to an essentialized, self-evident way of the world, something seen as 'the nature of things' or all-encompassing context such that everything comes to be seen to be, in one way or another, as having a virtual component as well as a material existence. Williams uses just such an analysis to examine the manner in which the sense of the 'natural', as an 'inherent and essential quality of any particular thing', became a cultural notion of *nature* – 'the essential construction of the world' (Williams, 1980: 68). A quality becomes reified, or turned into a thing itself. On the one hand, this could be dismissed as a category mistake; but on the other, it highlights the manner in which the virtual is closely bound up with the concrete – it does not make sense to locate the virtual outside of the 'real' but rather to make it part of it. General qualities are virtualities that 'really exist'. They can co-exist and co-define an 'actual' object or process in the material world, the manifestation of which depends on the context or situation in which it takes place.

By using old terms in new ways, there is a slippage of definitions and a transference which takes place between originals and new technological forms, simulations and objects. This has been called a process of '*seconding*' or 'trafficking' between the traditional or known and the new (Franklin *et al.*, 2000: 22–23). Seconding may reinforce or replace the original. In *Global Nature, Global Culture* Franklin *et al.* give the example of a trademarked cosmetic 'Virtual Skin' from the company Prescriptives. 'Women want liquid skin in a bottle', says a representative. The ad copy reads, 'make-up priorities have changed – we want foundation to hide blemishes, disguise shadows and be imperceptible. It has to look, act and feel like skin.' Culture and nature, the artifice of 'Virtual Skin' and actual skin, 'mimic each other's qualities such that they can hardly be differentiated, while the difference between them is precisely what makes this seconding or substitution desirable' (Franklin *et al.*, 2000: 25). 'Virtual Skin' is claimed to retain both the essence of actual skin adding the virtue of improving over the original. This transferability between the actual and the virtual, in which a quality becomes the essence of the matter, appears again and again in advertising and business notions of the virtual.

THE VIRTUAL IS REAL BUT NOT ACTUAL

Proust commented that memories are virtual: 'real without being actual, ideal without being abstract.' Dreams and vivid memories may be mistaken for experiences which one is actually living. We may awake from a dream that seems so real, so 'lived' that for a moment we confuse it with an actual experience. It may even inspire us to action– to achieve our dreams. While we may recognize the difference between actual and these imagined or recollected events, the richness and power of such experiences makes them important to us and highly valued in many cultures.

But the virtual is not only contrasted with the actual. It is different again from the abstract and from the probable or possible. As Stivale (1998), commenting on the work of the philosopher Gilles Deleuze, comments, the opposite of the really existing is the *possible*:

> The possible is never real, even though it may be actual; however, while the virtual may not be actual, it is none the less real. In other words, there are several contemporary (actual) possibilities of which some may be realized in the future; in contrast, virtualities are always real (in the past, in memory) and may become actualized in the present.
>
> (Hardt, 1993: 16)

The *possible* is that which does not really exist, but could to various extents. At one extreme is the absolutely *abstract*, and an ideal which, properly speaking, has no existence, but rather only possibility.[4] Closer to home is the *probable*, such as the likelihood of rain in the weather forecast. The probable is an 'actual possibility'.

As the quote from Proust suggests, there is a history of reflection on the virtual. Three key authors stand out: Proust, to whom the definition is attributed by Henri Bergson, the second figure, and Gilles Deleuze, who attempts to recast Bergson's intuitionist style of thought as a general approach (for intuition is not properly a faculty but a methodology).

Although his work is much referenced in philosophical discussions of virtuality (cf. methodologically: Deleuze, 1988; Badiou, 2000), Bergson rarely uses the term *virtual* himself. Gillian Rose argued that Deleuze offers not *Bergsonism* but a 'new Bergsonism' (Rose, 1984: ch. 6). It is more common among English commentators on Bergson to make no mention at all of the virtual until the late 1980s (cf. Pilkington (1976), notably the discussion of Bergson and Proust; Kolakowski, 1985). We cannot therefore go back to an authoritative definition or philosophical discussion of 'the virtual', but are left to our own devices. For example, in *Matter and Memory* (Bergson, 1988), the virtual is used only as a descriptive term, an adjective which helps summarize a much longer (and now outdated in terms of both the language of realization (see below) and in terms of neurophysiology) discussion of stimulation, perception and memory. There are important literatures and long-running debates on the writings of all three. This section merely glosses some of the key points of the virtual in relation to each and indicates key interpretations and texts. Philosophical positions are made more complex by the lack of a sense of intellectual development over time (their positions change and develop) among adherents of each figure and the tendency to isolate the virtual as a philosophical issue rather than locating it as a key problem in everyday life and affairs.

> in other words, the virtual image evolves toward the virtual sensation and the virtual sensation toward real movement: this movement, in realizing itself, realizes both the sensation of which it might have been the natural continuation and the image.
>
> (Bergson, 1988: 131)

Bergson argues that the (human) mind establishes a gap between stimulus and response which enables remembrance of experience (memories similar to virtual images in optics), if in a rather passive manner, and thereby opens the possibility of unpredictability and freedom. It is only the mind that integrates the multiplicity of our worlds into a unified flow of duration (*durée*). This unity is indiscernible in analytic methods based on the division (or 'spatialization') of time into moments (Deleuze, 1986, II: 81–82). This allows Bergson to suggest that actualization can be turned back on itself, a philosophical move which is criticized as a replay of the metaphysical quest for a unity of all things (see Douglass, 1992; Badiou, 2000). Objects are 'the point of indiscernibility of two distinct images, the actual and the virtual' (Deleuze, 1986, II: 82; Deleuze, 1994: 209–210). A full examination requires the analysis of both sides of an object or situation – a kind of 'double circuit' which I would expand to a fourfold optic which considers all four ontological modes.

> If everything about matter is real, if it has no virtuality, the proper 'medium' or milieu of matter is spatial. While it exists in duration, while clearly it is subject to change, the object does not reveal itself over time. There is no more in it 'than what it presents to us at any moment.' By contrast, what duration, memory, and consciousness bring to the world is the possibility of unfolding, hesitation, uncertainty. Not everything is presented in simultaneity. This is what life (duration, memory, consciousness) brings to the world.
>
> (Grosz, 1999: 25)

The virtue of conscious subjects is that they reverse the virtual to actual sequence of becoming. 'A body becomes virtual by

organizing itself into a subject . . . this virtual effect then posits itself as the actual ground' (Colebrook, 1999). Bergson's dualistic version relates the virtual to the actual (rather than the concrete) establishing a series of binaries:

Actual – Virtual
Matter (Object) – Memory (Subject)
Present – Duration (Progression)
Spatial (Synchronic) – Temporal (Diachronic)
Non-Organic – Living
Inert – Potential
Complete – In-process

The relation of influence between Bergson and Proust is much debated (for a refutation see Pilkington, 1976: ch. 4). Therefore, we cannot simply assume that all three share the same definition of the virtual, even though Bergson and Deleuze repeat Proust's mantra. Further problems arise in translation. For example, in the translation from the French *'actuel'* used by Proust and Bergson, the notion of the present is lost while the actuality of the probable is muddied. For this reason, and in accordance with more recent scholarship such as Stivale and Hardt's (above), I argue that the terms need to be further clarified by resetting the dualisms favoured by Bergson in particular, ideal–actual, existing and non-existing in a mutually exclusive manner. It helps to view these terms in tabular form, a tetrology of the real and possible (Table 2.1).

- The *virtual* is a 'real idealization' such as a memory, dream or an intention.
- The *concrete* is an 'actual real' such as a taken-for-granted thing, an actualized idea and anything that embodies memories. It is the event, our everyday 'now'.
- The *abstract* is a 'possible ideal' (expressed as pure abstraction, concepts);
- The *probable* is an 'actual possibility' usually expressed mathematically, such as a percentage.

Table 2.1 The virtual and the concrete

	Real (existing)	*Possible (not existing)*
Ideal	virtual (ideally real)	abstract (possible ideal)
Actual	concrete present (actually real)	probable (actual possibility)

The best contrast to the virtual is the concretely present (which may also be called the real actual).[5] *The virtual is distinct not only from the concrete, but also from the abstract.* This is a continuum of soft oppositions; for example, the virtual might feed and nurture the possible and is clearly in a dependent relation to the actual (in the case of virtual reality, this would be exemplified by its reliance on telecommunications infrastructure, technology and living bodies). Is the past real? Yes, virtually, inasmuch as there is an actual past of events which were once the concrete present and which are now really existing memories, cognitive representations reconstructed each time we remember (Neisser, 1982; Antze and Lambek, 1996; and see below).

Where it does appear in the work of Bergson, the virtual is entangled with duration as part of his study of the importance of the subjective understanding of the flow of time (*durée*). This true time is grasped only in the course of its actualization, a process of differentiation and creative evolution rather than the production of concrete instantiations which were already established virtually. That is, the concrete is not a copy of the virtual – the relation is not one of resemblance or identity (Deleuze, 1994: 212; see below) as it might be between the concrete and abstract representations such as concepts or images. Bergson designates this process as a vital force (*élan vital*).

Difference is primary, a factor which Deleuze exploits a generation later to develop a post-structuralist philosophy of difference. Thus, across different categories (for example, race) Deleuze provides a conceptual toolkit for understanding their commonality-in-difference, with the proviso that he is not providing a new form of metaphysical unity.[6] Others, such as Butler, attempt to capture something of this relationship by developing the idea of 'performativity' as creative 'citation' (Butler, 1993).

> Different levels only coexist insofar as they remain virtual (at the level of essences). What coexisted in the virtual ceases to coexist in the actual . . . cannot be summed up . . . each one retaining the whole, except from a certain perspective, from a certain point of view. These lines of differentiation are therefore truly creative: They only actualize by inventing . . .
>
> . . . The whole is never 'given' . . . it cannot assemble its actual parts . . . an irreducible pluralism reigns.
>
> (Deleuze, 1988: 101, 104)

Deleuze argues that the virtual is constitutive but ineffable. It is not opposed to the real and is therefore not realizable in the same way that the (non-existing) possible is. Axiomatically, the possible is an image of the real, a negation. Realization is a process of bringing the possible (the abstract or the probable) into existence in a manner that resembles it. In contrast, the virtual is fully real but can be actualized as the concrete. For Deleuze, 'the actualisation of the virtual . . . always takes place by difference, divergence or differenciation. Actualisation breaks with resemblance as a process no less than it does with identity as a principle. Actual terms [the concrete] never resemble the [virtual] singularities they incarnate. In this sense, actualisation . . . is always a genuine creation' (Deleuze, 1981: 125).

In his influential *Becoming Virtual* (1998), Pierre Lévy turns from history, memory and the past to apply Deleuze's work with a focus on imaginative and artistic creativity in the contemporary moment. His interest is in the relationship between the becoming of new creations and ideas, which Bergson argues can be apprehended only subjectively, and the event in which the 'new' takes concrete form (Lévy, 1998: 172). These two axes are also axes of time and space, with the virtual flowing towards actualization on the former (time), and the possible which takes on substance to become real on the latter (space). These axes are not only non-exclusive but parallel and complementary. They both describe the same dualism which lurks in the background: existing–not existing (Lévy, 1998: 171).

Drawing on the work of Deleuze's writing partner Felix Guattari (Guattari, 1992), Lévy also considers the process and risks of virtualization, a process of creative enquiry and questioning which opens up problem frames to critically question cultural formations, 'the way things happen'. Virtualization moves from situations (*'l'actuel'*) to create problems 'the knot of constraint and finality that inspires our acts. Final causes, the "why" of the situation' (Lévy, 1998: 174). Again, however, Guattari sets up his discussion in terms of a matrix of two dualisms: the Real and the Possible, and the opposition of the Virtual to the Actual (*l'Actuel*). The result is to exclude from the internal categories of the tetrology above a category of the concrete and material.

Although Table 2.1 is enormously simplified and provides a non-exhaustive list, the analysis is useful for teasing out the characteristics of often taken-for-granted concepts, which are key to our understandings of culture, and of those fears and hopes, which underlie our outlooks and motivate our actions. Of course any ongoing action, belief system or argument mobilizes all four facets of ontology. No one would conclusively win an argument on the basis of complete abstractions; there will be attempts to test even the abstractions of theoretical physics against reality. This is not because every truth is empirically testable[7] but because there is both a material benefit to extending theory towards controlling the real, and something akin to

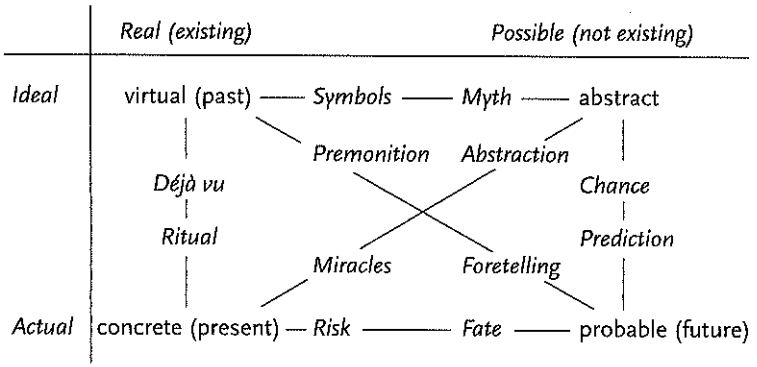
a compulsion to extend our understanding across the full range of ontological facets. Hence one marshals evidence (the concrete), chance and coincidence (co-variance and probability), and abstract ideals (moral values) in the assertion of regularity and of laws of social action (virtuals). Thought takes us beyond the present moment of the actual, not only to abstract ideas but to general problematics, to the historical and to the realm of principle, all of which are virtual.

In social science, for example sociology, attempts are made to interpret actual events. The stories constructed by sociologists and anthropologists are argued to be more than mere abstractions, and more than statistical predictions – they are held to convey something that is really taking place 'beneath' the surface of events.[8] Thus, for example, an uprising may be interpreted and argued to be a manifestation of class tensions around economic entitlements. Understanding global economic relations as intangible but powerful 'virtual' relations frames our attitudes and actions towards national economic instability and the popular experience of change in the job market. 'The virtual' becomes a template for understanding and reacting to events in everyday life whenever societies face a situation in which distant events (a corporate merger) have local impacts on a related but quite a different register (prices for a service).

The real qualities of the virtual, such as a memory of an event, distinguish the virtual from the unreal, or even surreal, qualities of the abstract. But the strength of Table 2.1 is that it allows us to both distinguish the virtual from – and relate it to – worlds of material existence, the mathematical worlds of probability and possible occurrences, and the abstract world of pure idealizations. These relationships are mediated by human agency, the flow of time and concurrence of place – something that is captured in the everyday language of surprise at transformations, the calculation of risk and the invoking of spirits. A risk or myth, an event or dream draws on all aspects of the real and possible. Contemporary cognitive science and neurology shows Proust to be incomplete: in any dream one could find not only the virtual but the concrete present of neurochemistry, hormones and the electrical exchanges of brain cells. A caution against reducing to one element or another is therefore in order. None the less, the table has an analytical and heuristic value: we can learn by considering social action in terms of each of the four aspects of the tetrology and in terms of their exchanges with each other. Walter Henry in a trenchant analysis points out that all communication involves the concrete (voice, inked letters), the virtual (coded meaning), the abstract (ideas), and the probable (author's intention) (Henry, 2001). These categories are woven together in everyday cognition and interaction. Thus it is not a matter of drawing on one single category – we rarely find pure examples of the virtual – but an assemblage of the terms. This explains how in imprecise everyday speech it is often difficult to demarcate where a naming of materiality, such as a useful product, stops and a projection of probability, shaded with abstract belief and glossed over with virtualities such as a brand name begins.

As the case of the Eucharist suggests (above), attempts to invoke the spiritual, for example, involve moving the virtual into the concrete, and giving abstract ideas the force of a material presence. The unpredictable is defined and the invisible may be divined in such rituals. We greet these shifts between the categories of existence with surprise and awe, understand them as miraculous events. Examples of such movements between categories may be added to flesh out the tetrology (Table 2.2). Deleuze speaks of actualization as a dramatization that enacts a simulation rather than a copy of an original image (as in the case of realization – Deleuze, 1981: 216–220). It is a 'contraction' of virtualities, which comes into being through an indexical leap rather than continuity with an original. Yet the virtual continues to inhere 'within this actual dispersion as that which both constitutes it and into which it dissolves' (Widder, 2000: 129; cf. Deleuze, 1993: ch. 7). There is thus an axis of realization between the possible and real, and an axis of actualization between the ideal and actual that are characterized by very

Table 2.2 Figures of speech and movement between categories of the real and possible



Virtual↔Concrete

- *Déjà vu* exemplifies the sensation that the present has already been experienced in a dream. The actual–real present is lived in a surreal, dreamlike state as virtual, or ideal–real.
- *Ritual* actualizes latent possibilities, conjures the past with a view to altering the present.

Virtual↔Abstract

- *Symbols* represent and thus make present abstractions by giving them a form.
- *Myth* formulates the past as an idealization, purifying it of factuality in favour of moral and ethical ends.

Abstract↔Probable

- *Chance* is the abstract idea of the play of probability.
- *Predictions* formulate the abstract ideals into calculations of the actually possible.

Concrete↔Probable

- *Risk* is our pragmatic approach to probability – we take risks on the chance that a computable probability will not actually occur.
- *Fate* describes a present or an outcome as a future prescribed as an actuality.

Concrete↔Abstract

- *Miracles* are said to occur when the non-existing ideals suddenly materialize.
- *Abstraction* conceptualizes the concrete present as a pure (non-existing) idealization.

Virtual↔Probable

- *Premonitions* are visions of probabilities in the felt form of emotional sensations. They are real idealizations of actual possibilities.
- *Foretelling* the future casts a calculated, possible outcome as something that has already been conceived, imagined and possibly represented.

different relations. Above all the performative relations of actualization challenge us to rethink identity relations characteristic of the process of realization

Similarly, there is a range of traditional 'beings' who 'figure' these exchanges. These figures are our contemporary pantheon of spirits. Perhaps we most fear the figures of the past: *ghosts* and apparitions are virtual (they are reputed to exist but have no material substance). They cross into actuality as manifestations that have actual effects (hauntings). Biblically, *angels* appear in dreams to foretell the future (probable–virtual). Angels as messengers, witnesses and guardians provoke chains of actual events, connecting the divine and concrete. To this day, Europeans perceive outlines of Greek mythical figures abstracted in the constellations (concrete–abstract). The figures of fate and time preside over secular, modernist mythologies of progress. And the almond-eyed silhouette of the *alien* has moved what were once called 'creatures from outer space' from fantastic abstraction into being a figure of the probable, a being whose existence is debated as much in the virtual mode of recovered memory as in the fictional television series *The X-Files*.

Flows between categories are not only a matter of analysis. In many cases, *rituals* are used to shift group perceptions and

understandings in a coordinated and actual manner. While we have argued that the virtual has always been a crucial part of ontological thinking, even if it has been less recognized in some periods and cultures and more in others, what historical examples of the virtual can be found outside of historical records of intellectual thought and scholarship? The historical importance of the virtual may be detected from records of ritual events and ceremonies; for example, the coronation of kings and queens bestows a title and ascribes an identity to an actual individual. Historically, royalty were understood to be god-like beings – the Japanese Emperor continues to be honoured in these terms. Coronations *actualize* the virtual, bringing the idea of 'the King', for example, down to Earth in the form of an actual individual. The transformation from, for example, 'Crown Prince' to 'King' is engineered via an elaborate ritual in which social attitudes and expectations are shifted and bodies move ritually from one status to another.

In day-to-day terms, distant loved ones or those who travelled and emigrated to far-off destinations in the past were removed from the face-to-face interactions of family and tied to home only through the occasional delivery of precious letters by post. While clearly still existing, distant relations are hardly a material factor in everyday life. Rather they are virtual and abstract, for distance and lack of contact remove them from many day-to-day considerations. In a deep sense, the face-to-face world of communities and clans was never totally governed only by the real–actual because humans, family groups and communities have likely always travelled and been nomadic to a certain extent. Those who were absent were much like the constellations – more abstract than virtual – and all the more so because they did not figure in the highly localized routines of everyday life during their absence. *Faith* kept not only memories alive of those travelling away, sailing perhaps great distances, but describes a key mental activity in any form of the virtual: the willingness to accept an ideal 'in essence' in the place of actual presence, seconding the virtual as actual.

From the eighteenth century until the early twentieth century positivism was the unchallenged theory of science. It insisted on the observability of all that is 'real' dismissed the virtual along with the abstract. Such nominalism has now been shown not to have been, nor to be the case in scientific practice (cf. Latour, 1993). A rigid division between the materialism of empirical reality and the idealism of abstract thought simplified the ontological into two categories: existing versus non-existing. The virtual was conflated with abstraction. Probability was largely misunderstood, kept out of the picture by a focus on only the present and on only Euclidean space. The virtual was thus suppressed, although, historically, many cultures have long regarded the virtual (memories, dreams and so on) as a significant form of the real. Religious and mystical rituals were often intended to actualize the virtual – injuring a voodoo doll would cause physical harm at a distance.

In earlier times, the virtual was considered an important aspect of the means of awareness and knowledge. Liturgy and ritual consciously evoked the virtual as real, not trivial. Spiritual realities and truths are approached through the virtual and the abstract. Religions still provide countless miracle stories of the abstract becoming concrete. Visual images of the abstract operate as virtual forms in which the possible but not actual may be understood as 'an ostensibly sensory phenomenon' (Nie, 1998: 116). Rather than a descriptive or propositional knowledge of the world, the spiritual is offered as a transformative form of knowledge which is expressed imagistically as pre-verbal figures laden with affect, paradox, the coalescence of opposites, and embodied, sensory forms of knowledge:

> As literary constructs, the miracle stories use imagistic dynamics in material objects to stand for and evoke a real – if imaginal – experience in the reader or listener of a leap mimicking that of the . . . 'divine'. In the ritual situation, this enactive experience of the leap would be the basis of a belief that would store this image as a model for subsequent [religious] perception. In

> addition, it could establish the predisposition to foreground the meditative-affective – that is, imagistic or 'dream' – mode of awareness . . . in situations within the religious context.
>
> (Nie, 1998: 116)

With the rise of computer-mediated communication and digitally created virtual environments, the virtual returns to 'Western' cultures (see following chapters) in the form of absences made present. Simulations offer virtual environments – clearly they are 'something' but there is no materiality there. This has puzzled theorists used to thinking in the either–or terms of the material–idealist division which, like a flute with only one note, offers only notes and rests: the materially existing or the abstract, non-existing. Although its name may be unfamiliar, the virtual will be shown to be a category with which people are comfortable and in terms of which they live their lives. In part, this is because the virtual has always existed in its 'traditional', ritualized forms.

Recognizing the virtual allows us to see more clearly how it enters into categories of thought and into descriptions of the world and embellished narratives which cast the world in a given light or frame problems. Moving away from the simple actual–ideal binary of (concrete–abstract) to recognize how the virtual fits in relation to these terms and with probability has important implications for the way in which risk is understood and managed at a societal level.

MEMORY

The virtual includes those elements, such as memories, which are not simply abstractions but are *real ideations* (day-dreams, the past and so on). They may be experienced as real, but they are neither tangible nor actual. This is not merely a matter of semantics but essential to understanding the significance of simulations and their relationship to material reality. The actual is context bound. Memories are by definition virtual. They have to be worked up each time they are recalled or invoked (Neisser, 1982). The virtual is always real, even if it is a memory or a past event, but it is not actualized in the present except via specific human interventions, such as rituals, which make these memories or other 'virtualities' tangible, concrete. The psychological, museum and archaeological metaphors by which the past is conceived

> tend to transform the temporal into the spatial and are intensely visual. Layers are excavated, veils lifted, screens removed. As such the recall of socially and effectively charged events involve a social organisation of a present space (structured encounters with a site, even tours or processions), with specified stopping-places and actions (ablutions, obsequities, gestures and readings) and time (seasonal ceremonies), as well as an historical space and time (Kirmayer 1989). Memory is reconstructed anew each time through secular rituals of for example the systematic, often guided, tour in which the site is 'framed' by discourse. The position of the viewer may be left in question or explicitly positioned, but there is always a space, a distance, between the spectator and her memory.
>
> (Antze and Lambek, 1996: xii)

This distance is the space of '*metaxis*': the operation of the imagination which connects the perceptual environment with the virtual and abstract world of meanings which over-code our perceptions. Psychologists have advanced the suggestion that 'there is a survival advantage to constructing a social reality that corresponds to some objective reality' (Shapiro and Lang, 1991: 689). However, this naturalizes an either–or dichotomy between the 'real' and the 'fictional' which even psychological research indicates is too crude. A review of the literature confirms some of our categories: Dorr found that as children mature into adolescence, their definition of 'real' shifts in a complex manner from 'something fabricated but "possible"' to something fabricated but probable or representative (for a review see Dorr,

1983). Thus children may believe in fairies (abstract, that is, improbable but possible to imagine) while adolescents (and many adults) deny their existence but idolize the screen characters portrayed by actors. These dramatis personae are probable and virtual but not actually existing characters based on the recognition that the acting is lifelike. Thus we may learn selectively from fictional scenarios (novels) as much as from life experiences, making quite sophisticated judgements about what is relevant to import into our everyday actions (Tyler, 1984; Rubin, 1988) – or falling victim to urban myths and media hoaxes (such as the 1938 CBS broadcast of *War of the Worlds* (see Fedler, 1989)) depending on variables such as the level of anxiety, urgency of the situation in which we find ourselves, trust in the source, and pressures to conform to socially accepted beliefs and attitudes.

Earlier, it was noted that children's sense of reality includes the possible as well as the real, narrowing down to exclude abstract entities such as mythical fairies and distinguishing fictional events and tales from historical happenings (Dorr, 1983). None the less, the past never recurs literally; it has a virtual existence as a narrative, a memory, an ideation (see above). How does the social commemoration of these virtualities interact with children's simultaneous quest for certainty and the sense of control that authorship of their own imaginative fantasies brings? What is the impact of digital virtuality, which offers a magical, computer-mediated version of the global village?

Fiction and fantasy reveal an enduring adult willingness to believe in virtual and abstract entities, especially where a story of reasonable doubt in the empirical facts can be constructed. Ambiguity is fascinating. How many shooters were responsible for the death of US President John F. Kennedy? A host of films and television specials have been made on this topic. The Ottawa Elvis Sighting Society may believe Elvis is alive – even though most would admit that it is unlikely he would ever have moved to the capital of Canada, a place that meteorologists have shown is actually, materially, the coldest capital city in the world. The preference for materialism emphasizes the actual–real, but the virtual is a required category for distinguishing non-existing and ideal abstractions such as concepts from ideal but really existing virtualities such as memories and myths (see also Antze and Lambek, 1996) and, of increasing importance, simulations and totalities such as groups and classes. These exist in and of themselves, but are not actualities, again, not concrete.

TECHNOLOGIES OF THE VIRTUAL

Howard Caygill comments:

> the ensemble of techniques that make up the world wide web and its technological basis in the interlinked servers of the Internet seem to promise a new art of memory in which knowledge as technological invention replaces knowledge as recollection, and in which the archive appears as an effect of the links made possible by the technological work of memory rather than a given (and carefully policed) store of information.
>
> (Caygill, 1999: 2)

In effect memory moves from the virtual realm of recollected knowledge into the material realm of stored and access information.

Techniques of the virtual create the illusion of presence through props, simulations, partial presences (such as a voice conveyed by telephone or thoughts written in a book) and rituals which invoke the past and make absent others present. They aid metaxis from the virtual to the actual by giving concrete presence to intangible ideas. Historically, a growing web of communications, beginning with the early couriers and envoys, first between the courts of rival countries and empires, later across those empires in the form of postal systems which served common people, and finally via telegraph and other forms of telecommunication to the far corners of the globe, culminating

in the spread of the Internet and email as a grass-roots alternative to phone, fax and telex which girdles the globe (even if this is more the exception than the rule in some developing countries – see Chapter 4). In the twentieth century, 'the decoupling of space from place accomplished through the use of the telephone implies that "virtual" life has been coming for a long time' (Hakken, 1999: 90) – and has been with us even longer if the brief historical survey we have given is correct.

Perspective, used in images since the Renaissance, is one such technology. It is a convention for representing scenes, and giving representations the appearance of being virtually real. Rather than being strictly accurate, perspective creates the illusion of space of a two-dimensional surface for fantasy and contemplation. Effective representation of a hand outstretched towards the viewer requires alteration of the rules by 'foreshortening' the length of the limb. The secret of great classical art is often how it breaks the mechanical rules of perspective: for example, Michelangelo's sculpture of the *Pieta* (there are actually several versions and studies). In this marble sculpture of the dead body of Christ held by his seated mother Mary, Michelangelo reduced the size of Christ to fit him across Mary's lap, in the name of obtaining an integrated composition. Whether Christ is tiny or Mary is huge – the point is that either way, the sculpture is not simply an image of actual bodies (as in an abstract representation); it is a virtuality.

The realist preoccupation with simulating the material world is defended on geometric grounds, but static perspective compositions composed from a single point are not the 'natural' way of seeing things. We move around and scan the environment with both eyes, binocularly (much discussed since the 1960s – see Hillis, 1999). Even if it is so culturally entrenched that it seems natural, perspectival technique has developed over the centuries to provide a rationalized image for the viewer. Perspective is an odd form of special effect aimed at arresting vision.

Perspective becomes more than a technique; 'seconded' perspective becomes naturalized as a way of seeing that dictates a visual approach to the world in which we are preoccupied with space and geometric alignment. Time, lost without the sequentiality of movement, is rendered virtual with the effect that images come to be frozen snapshots of some point always in the past. 'We are persuaded by this theory, to view the world from a single fixed position, with a single lead eye', even though we break the rule in the virtual: 'In dreams, objects and people often appear to be "there" and "here" at the same time. Roads can lead to more than two places at once. Spaces can be logically unrelated but appear connected nonetheless' (Wachtel, 1980: 84–85).

SUMMARY

This chapter elaborates on the definition of the virtual as '*that which is so in essence*' but not actually so. This notion of the virtual as essentiality was contrasted with the common distinction between the virtual and the real. It was argued that a better contrast opposes the virtual with the concrete. A four-part definition of the virtual, the concrete, the abstract and the probable was proposed. The virtual is ideal but not abstract, real but not actual. It is ideally real, like a memory. Of more significance is the weaving together of these ontological categories in our representations of reality, of the past and of the future. Virtual elements are embedded in everyday activities and the language we use. Ritual, miracles, understandings of risk and fate all involve slippage between the categories as the virtual is actualized, the probable takes place – as our fears and dreams 'come true'.

We examined the roots of the virtual in the everyday mental ability to accept the 'almost so' in place of the actually so. *Metaxis*, or the ability to imaginatively close up the gap between fiction and reality and between the virtual and the actual has a long history, and may be found in social rituals and in the historical record. Historically, cultures have long regarded the virtual (memories, dreams and so on) as a significant form

of the real. Rituals were developed to invoke and manage virtualities, integrating them into life as carnivals, sacred times and places, and mysteries. In some cultures the virtual was easily mistaken as concrete. However, the virtual was challenged by modern positivism, which dismissed it as non-existing abstraction and concentrated on the concrete and the probable.

Computer-mediated communication reintroduces virtualities as important presences in the form of distant but significant others – friends, clients, teammates – and in the form of digital simulations for play and by which future trends and actualities are anticipated and prepared for. Concrete techniques of the virtual including not only computers but also conventions such as perspective, support the virtual and give it tangible presence. The embeddedness of the virtual appears in approaches to problem solving including the frames within which we pose questions or understand problems. Slippage between the virtual and actual appears to have been widely accepted – we embrace virtual substitutes while nostalgically remembering (i.e. virtualizing) what we might call 'the real thing'. The following chapters will consider the rise of digital virtualities in the form of online virtual environments; the role of virtuality in videogaming and simulation; the impact of digital virtuality at work; in the economy; and in personal lives with special attention to risk and security.

3

DIGITAL VIRTUALITIES

This chapter considers the rise of simulation software and hardware as a digital form of the virtual. From the painted circular panoramas of the 1800s to immersive virtual reality and digital renderings of environments in role-playing and other online games, there is a long history of virtual environments. Central to the recent history is the rise of sophisticated graphic display hardware and software, complex geographical information systems (GIS) and the popularity of video- and computer-games. This chapter outlines:

- The history of virtual environments, dating from the panoramas of the 1800s needs to be separated out from virtual technologies and simulation technologies.
- The 'liminoid' quality of virtual environments, 'betwixt and between' people.
- Computers as filters at the boundary of the concrete and a digitally created virtuality.
- The autonomy of cyberspace.
- Impacts on everyday life.

slavery on the Ivory Coast. The editors denied responsibility for publishing the story without checking the facts. The journalist 'tried to off-load his breach of journalistic ethics by suggesting that he was trying to forge a new form of journalism of the kind, presumably, in which reported fact and stuff you make up are given equal weight' (Kingston, 2002: SP8).

We need to know more about how 'the virtual' becomes a template for reacting to material events in everyday life. We need to know more about how the biases and conceptual categories of the past are translated into the new, virtual, matrices of the present and future. We need to learn more from past manifestations and forms of the virtual so that we understand better the implications of our ongoing investment in creating a global, digital virtuality.

Notes

1 THE RETURN OF THE VIRTUAL

1 Although in recent media-stunts people attempted to spend a year during which they purchased all the necessities of life via online shopping sources, but even here, they did not remain logged on as participants in an online, virtual environment for the whole period. The Web remained a temporary communication and logistical space. They merely directed their consumer spending to retail sites on the World Wide Web.

2 THE VIRTUAL AND THE REAL

1 The virtual is not a form of The Real in Lacan's sense. Whereas Lacan counterposes an unrepresentable actuality as an absent fullness which figures in language as excess and lack, but which can never be adequately represented. It therefore constantly troubles and undermines the authority of, for example, representations of self-identity (see Zizek, 1989; Widder, 2000: 118).

2 Debates about the world are intractable when posed in purely philosophical terms. The social and natural sciences developed out of natural philosophy as a result of the need to probe the material world about us rather than attempting to provide a purely philosophical answer. This approach considers people, machines, media and nature to be part of an integrated environment. It will be continued here. Rather than defining the virtual by contrasting it with the real, this book takes a different tack, by surveying the ways in which the term 'virtual'

has come to prominence in contemporary usage, and examining the usage of the term itself to see what it means to different people.

3 Some worry that the increasing prominence of the virtual represents not only a shift from the actual to the ideal, as discussed in this book, but a corresponding shift towards an imbalance away from abstraction in favour of virtualities. In the terms set out below, that is to say a shift from the possible towards a greater bias in favour of the real. This could entail a loss of the free-wheeling creativity afforded to the imagination to create purely conceptual abstractions (concepts, fantasies) (see Baudrillard, 2000: 66).

4 Hegel provides a theory of the realization of this abstract Idea into the expression of a collective Spirit in the form of the political nation-state. His theory of dialectical negations is an attempt to visualize the historical and political process by which identity is realized through a process of negation that specifies differences between identities. Development continues in attempts to surmount – by negation – the contradictions that have been created between them. The initial positive state is an abstraction because it is 'indifferent' to any other object but it therefore cannot be specified or even accounted for (Hegel, 1977 ss. 578 in Widder, 2000: 124; Rorty, 1967).

5 If one struggles to put meaningful terms into the matrix that can be created from Proust's definition, the expected correspondences found in, for example, Bergson and Deleuze do not appear. Deleuze's suggested arrangement leaves one floundering to conceive of a 'possible', that is, a non-existing virtuality. He himself argues this is an impossibility, a null-set. Sketching in the 'real and actual' as the concrete (in square brackets) produces a Platonism in which the real includes both ideal forms and concrete objects (Badiou, 2000). The abstract, understood as a transcendental that exists only in concept but not in reality, fits poorly but is needed to avoid a form of Platonism. The concrete can easily be lost altogether.

6 However, he is criticized for constructing a philosophical system in which that amounts to the same thing (Badiou, 2000 – see n. 1 above).

7 A flaw in Russell's empiricism and Capor's positivism disproved by Karl Popper.

8 Such realist positions require the category of the virtual to avoid the accusation of committing a *post hoc* ergo *procter hoc* fallacy of conventionalism – that they test only for the existence of the intangible structures they assert rather than searching for simpler explanations.

3 DIGITAL VIRTUALITIES

1 In digital domains, the network, with all its computing and telecommunications infrastructure, the conventions of digital addressing and of data processing, precedes virtual space in an even more literal manner than Baudrillard could have dreamed of when he remarked, 'the map proceeds the territory' (Baudrillard, 1990: 1). Even the current notion of the website is a gloss on what is a strictly codified manner of retrieving and displaying data. Web pages themselves are composed out of linked elements such as graphic image files, punctuated by hypertext links to other data and files. Hypertext links are indexes caught on the threshold of departure, signalling to another page or text. They are paradoxical because they appear to be an interior gateway. To indulge in an architectural metaphor, a link is less a portal to the outside and more like a hidden passage in a building – a door to the inside, that leads out somewhere else, reinforcing the sense of self-sufficient totality achieved in the Net. Ambiguity thus becomes 'mystery' in the absence of a span across clear categorical divisions (in this case, distinctions such as inside and outside, here and there, break down – see Shields, 2000).

2 Myron Krueger provides an early history of the development of technologies such as the light pen for sketching or selecting items on a video screen, the mouse and the graphical interface of the Apple computer, and the head-mounted display at military-funded research institutes and university labs (Krueger, 1991). Rob Kitchen's *Cyberspace: The World in the Wires* provides one of the first histories of the development of virtual reality and virtual environments, specifically relating them to the parallel but earlier emergence of the Internet (Kitchin, 1998: 45ff.) and offering a rare history of European and Japanese work (see Timeline). Hillis (1999) integrates sources to give a critical history of virtual reality in the United States and its predecessors from the pin-hole camera and Cinerama to the development of early head-mounted displays (HMDs).

3 Like terrifying monsters, the dinosaur figures large in the American imagination of a ferocious otherness, so foreign as to be locked in another space (a lost land or island) or time (the cretaceous, or the far future). Whereas wheeled transport is far more efficient, the fantasy of the walking avatar or robot is deeply ingrained in VR. Walking upright like cinematic depictions of the tyrannosaurus (or some *Star Wars* battle machine) is a mark of the human and hints at a horrifying otherness – a reptilian intelligence or cunning.