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"Virtual Reality" - Book Chapter

By: **Derek Stanovsky**

The Blackwell Guide To The Philosophy Of Computing And Information

Edited by: Luciano Floridi

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ISBN 0-631-22918-3 (alk. paper) — ISBN 0-631-22919-1 (pbk. : alk. paper) <http://www.blackwellpublishing.com>

Blackwell Philosophy Guides

Series Editor: Steven M. Cahn, City University of New York Graduate School

The Blackwell Guide to
the Philosophy of
Computing and
Information

Edited by
Luciano Floridi

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First published 2004 by Blackwell Publishing Ltd

Library of Congress Cataloging-in-Publication Data

The Blackwell guide to the philosophy of computing and information / edited by Luciano Floridi.

p. cm. — (Blackwell philosophy guides)

Includes bibliographical references and index.

ISBN 0-631-22918-3 (alk. paper) — ISBN 0-631-22919-1 (pbk. : alk. paper)

1. Computer science—Philosophy. 2. Information technology—Philosophy.

I. Floridi, Luciano, 1964– II. Series.

QA76.167.B53 2003

004'.01—dc21

2003045339

A catalogue record for this title is available from the British Library.

Set in 9/11.5pt Galliard
by Graphicraft Limited, Hong Kong
Printed and bound in the United Kingdom
by MPG Books Ltd, Bodmin, Cornwall

For further information on
Blackwell Publishing, visit our website:
<http://www.blackwellpublishing.com>

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Virtual Reality

Derek Stanovsky

Introduction

“Virtual reality” (or VR) is a strangely oxymoronic term. “Virtual,” with its sense of “not actual” is jarringly juxtaposed with “reality” and its opposing sense of “actual.” Undoubtedly the term has gained such currency at least partly because of this intriguing provocation. “Virtual reality” is currently used to describe an increasingly wide array of computer-generated or mediated environments, experiences and activities ranging from the near ubiquity of video games, to emerging technologies such as tele-immersion, to technologies still only dreamed of in science fiction and only encountered in the novels of William Gibson or Orson Scott Card, on the Holodeck of television’s *Star Trek*, or at the movies in *The Matrix* of the Wachowski brothers, where existing VR technologies make possible a narrative about imagined VR technologies. The term “virtual reality” covers all of this vast, and still rapidly expanding, terrain.

“Metaphysics” too is an expansive term (see for example Chapter 11, ONTOLOGY, and Chapter 13, THE PHYSICS OF INFORMATION). Setting itself the enormous task of investigating the fundamental nature of being, metaphysics inquires into what principles may underlie and structure all of reality. Some questions about virtual reality from the perspective of metaphysics might be: What

sort of reality is virtual reality? Does the advent of virtual reality mark an extension, revision, expansion, or addition to reality? That is, is virtual reality real? Or is virtual reality more virtual than real and, thus, not a significant new metaphysical problem itself? How else might the links between “reality” and “virtuality” be understood and negotiated? Perhaps even more importantly, do the possible metaphysical challenges presented by virtual reality necessitate any changes in existing metaphysical views, or shed any light on other metaphysical problems?

This chapter approaches some of these questions, focusing on three main issues within the tremendously open field of inquiry laying at the intersection of metaphysics with virtual reality. First, the technology of virtual reality, along with some of the issues arising from this technology, will be situated and examined within the Western philosophical tradition of metaphysics stretching from ancient to modern and postmodern times. Next, the issues raised by virtual reality for personal identity and the subject will be explored and examined, beginning with Cartesian subjectivity and moving through poststructuralist theories of the subject and their various implications for virtual reality. Finally, these metaphysical considerations and speculations will be brought to bear on the current economic realities of globalization and the emerging information economy, which have become inextricably bound up with both

the metaphysics and politics of virtual reality as it exists today.

Since metaphysics itself is one of the broadest subjects, it seems odd to restrict the discussion of virtual reality only to one of its narrower senses. Therefore, virtual reality too will be construed as broadly as possible, and not confined to any one particular technological implementation, either existing or imagined. However, the insights concerning virtual reality gleaned in this manner should also find application in many of its narrower and more restricted domains as well. One final qualification: since metaphysics inquires into the fundamental structures of reality, and since it is unclear at this stage how virtual reality is to be located within reality, it might be more appropriate if the present inquiry into the metaphysics of virtual reality were described instead as an exercise in “virtual metaphysics.” It may be that what virtual reality requires is not so much a place within the history of Western metaphysics as it does a metaphysics all of its own.

Virtual Reality

Virtual reality has been described in a variety of ways. In one of the earliest book-length treatments of virtual reality, Howard Rheingold writes: “One way to see VR is as a magical window onto other worlds . . . Another way to see VR is to recognize that in the closing decades of the twentieth century, reality is disappearing behind a screen” (Rheingold 1991: 19). This framing of virtual reality is a useful one for our purposes in that it helps to clarify and highlight one of the central issues at stake. Does virtual reality provide us with new ways to augment, enhance, and experience reality, or does it undermine and threaten that reality? Virtual reality is equally prone to portrayals as either the bearer of bright utopian possibilities or dark dystopian nightmares, and both of these views have some basis to recommend them. Before exploring these issues further, it will be helpful to describe and explain the origins of virtual reality, what virtual reality is currently, and what it may become in the future.

Virtual reality emerged from an unlikely hybrid of technologies developed for use by the military and aerospace industries, Hollywood, and the computer industry, and was created within contexts ranging from the cold war to science fiction’s cyberpunk subculture. The earliest forms of virtual reality were developed as flight simulators used by the US military and NASA to train pilots. This technology led to the head-mounted displays and virtual cockpit environments used by today’s fighter pilots to control actual aircraft. Another source of VR lies in the entertainment industry’s search for ever more realistic movie experiences beginning with the early Cinerama, stereo sound, and 3D movies, and leading to further innovations in the production of realistic images and audio. Add to this a whole host of developments in computer technology. For instance, computer-aided design programs, such as AutoCAD, made it possible to use computers to render and manipulate three-dimensional representations of objects, and graphical computer interfaces pioneered by Xerox and popularized by Apple and Microsoft have all but replaced text-based computer interfaces and transformed the way people interact with computers. All of these trends and technologies conspired to create the technology that has come to be known as “virtual reality” (for more on the genesis and genealogy of VR see Rheingold 1991 and Chesher 1994).

There is not, or at least not yet, any fixed set of criteria clearly defining virtual reality. In his book *The Metaphysics of Virtual Reality*, Michael Heim identifies a series of “divergent concepts currently guiding VR research” each of which “have built camps that fervently disagree as to what constitutes virtual reality” (Heim 1993: 110). The cluster of features considered in this section concern computer-generated simulations which are interactive, which may be capable of being shared by multiple users, may provide fully realistic sensory immersion, and which may allow for forms of telepresence enabling users to communicate, act, and interact over great distances. Although not all of these elements exist in every version of virtual reality, taken together, these features have come to characterize virtual reality.

At one end of the spectrum, technologies allowing interactions with any representation or

simulation generated by means of a computer are capable of being described as virtual reality. Thus, a video game simulation of Kung-Fu fighting, or the icons representing “documents” on a simulated computer “desktop” might both be cases where computers create a virtual reality with which people then interact in a variety of ways. What makes these candidates for virtual reality is not simply the fact that they are representations of reality. Paintings, photographs, television, and film also represent reality. Computer representations are different because people are able to interact with them in ways that resemble their interactions with the genuine articles. In short, people can make the computer simulations do things. This is something that does not happen with other forms of representation. This form of virtual reality can already be provided by existing computer technologies and is becoming increasingly commonplace.

At the other end of the spectrum lie technologies aimed at fuller sensory immersion. Head-mounted displays, datagloves, and other equipment translate body, eye, and hand movements into computer input and provide visual, audio, and even tactile feedback to the user. This type of virtual reality aims at being able to produce and reproduce every aspect of our sensory world, with users interacting with virtual reality in many of the same ways they interact with reality, e.g. through looking, talking, listening, touching, moving, etc. (even tasting and smelling may find homes in virtual reality one day). Virtual reality in this vein aims at creating simulations that are not only perceptually real in how they look and sound, but also haptically and proprioceptively real in how they feel to users as well. As Randal Walser, a developer of virtual-reality systems, has written: “Print and radio tell; stage and screen show,” while virtual reality “embodies” (quoted in Rheingold 1991: 192). At the imagined limit of such systems lie the virtual-reality machines of science fiction, with *Star Trek*’s Holodeck and the computer-generated world of *The Matrix* producing virtual realities that are perceptually and experientially indistinguishable from reality. No such technology exists today, but some elements of it are already possible.

In addition to the virtual reality of interactive simulations, whether confined to two-dimensional

video screens, or realized through more ambitiously realistic and robustly immersive technologies, there are other elements that may also play a part in virtual reality. Perhaps the most important of these is provided by the capability of computers to be networked so that multiple users can share a virtual reality and experience and interact with its simulations simultaneously. The possibility for virtual reality to be a shared experience is one of the principal features by which virtual reality can be distinguished from fantasy. One of the tests of reality is that it be available intersubjectively. Thus, what is unreal about fantasy is not necessarily that the imagined experiences do not exist; it is that they do not exist for anyone else. Dreams are private experiences. On the contrary, the shared availability of virtual reality makes possible what William Gibson describes so vividly in his early cyberpunk novels of a computer-generated “consensual hallucination” (Gibson 1984: 51). The ability to share virtual reality sets the stage for a wide variety of human interactions to be transplanted into virtual reality, and opens opportunities for whole new avenues of human activity. Communication, art, politics, romance, and even sex and violence are all human activities that have found new homes in virtual reality. The possibility for the creation of entirely new forms of human interactions and practices that have no analog or precedence outside of virtual reality always remains open.

Another feature that may be encountered in virtual reality is that of “telepresence” or presence at distance, now frequently shortened simply to “presence.” E-mail, video conferencing, distance education, and even telephones, all enable types of telepresence. In each of these cases, the technology allows users to communicate with distant people as if they were in the physical presence of each other. Such communication is so commonplace in so much of the world today, it hardly seems strange anymore that it is possible to communicate with people who are thousands of miles away. More sophisticated, realistic, and immersive technologies both exist, and can be imagined, that allow not only for written or spoken communication over great distances, but also for other types of interactions as well. For instance, the military use of remotely controlled aircraft and missiles, or the use of unmanned spacecraft

for exploration where humans might see, move, control, and use instruments to explore far-flung destinations in the solar system are both examples which allow human presence virtually. Other examples can be found in medicine, where surgeries are now performed via computer-controlled instruments, and surgeons interface with a video screen rather than a patient. These examples illustrate ways in which human presence, action, and interaction can be created virtually, and such examples are becoming more, rather than less, common.

Virtual reality not only creates new virtual spaces to inhabit and explore, but creates the possibility of virtual time as well. With the creation of computer-generated simulations came a bifurcation of time such that one now needs to distinguish between time in the simulated, virtual world and time in the rest of the world. Thus, only with the advent of the artificially created worlds of virtual reality does the concept of “real time” (RT) enter into general parlance. Communications and interactions in virtual reality (as opposed to IRL, “in real life”) may be synchronous (as in video-conferencing and chatrooms) and coincide closely with real time, or asynchronous (as in e-mail exchanges) and diverge widely and unpredictably from the passage of time in other virtual interactions or with time outside the simulation. Time may even stop, or go backwards, within virtual reality. For instance, a simulation might be paused indefinitely, or reset to some previous state to allow users to experience a part of a simulation again. Time may also vary simply as a result of the technology used. This might happen when faster machines are networked with computers operating at lower MHz, or utilizing slower modems. In such cases, this can mean that some objects are rendered faster and changed and updated more frequently than others, giving an oddly disjointed sense of time, as objects in the same simulation move at distinctly different rates of time. These variations and complications in time emerge alongside and with virtual reality.

Not all of these elements exist in every version of virtual reality. However, taken together, they provide the background against which current virtual-reality systems are being invented and reinvented. These same elements also trace the

horizon within which any metaphysics of virtual reality must take place.

Virtual Metaphysics

It is possible to recapitulate a large portion of the history of Western metaphysics from the vantage-point offered by virtual reality. The debates over rationalism, empiricism, realism, idealism, materialism, nominalism, phenomenology, possible worlds, supervenience, space, and time, to name just a few, can all find new purchase, as well as some new twists, in this brave new world of computer-generated virtual reality. This section traces some of the most influential Western metaphysical views concerning the distinction between appearance and reality and explores their possible relevance to virtual reality. This discussion by no means exhausts the metaphysical possibilities of virtual reality. In addition to the many strands of Western (henceforth this qualification will be omitted) metaphysics left untouched, there remain vast areas of metaphysical thought that could also be fruitfully explored, including long and rich traditions of African, Chinese, Indian, and Latin American metaphysics.

Distinguishing between appearance and reality is perhaps one of the most basic tasks of metaphysics, and one of the oldest, dating back at least to Thales and his pronouncement that despite the dizzying variety in how things appear, in reality “All is water.” This desire to penetrate behind the appearances and arrive at the things themselves is one of the most persistent threads in metaphysics. Virtual reality presses at the very limits of the metaphysical imagination and further tangles and troubles long standing problems concerning how things seem versus how they really are. For instance, puzzles concerning mirrors and dreams and the ways in which they can confound our understanding of reality have a long history and haunt the writings of many metaphysicians. Virtual reality complicates these puzzles still further.

“But suppose the reflections on the mirror remaining and the mirror itself not seen, we would never doubt the solid reality of all that appears” (III. 6 [13]). This passage from Plotinus

comes wonderfully close to describing the current possibilities of virtual reality. Virtual reality may be very like the images in a mirror persisting even after the mirror disappears. In the case of mirrors, such a possibility remains only hypothetical. Plotinus assumes that in most cases the difference between reality and the reflection of reality presented by a mirror is easy to discern. After all, it is only Lewis Carroll's Alice who peers into a looking glass and takes what she sees to be a room "just the same as our drawing-room, only the things go the other way" (Carroll 1871: 141). Such a confusion seems amusingly childish and naive. So confident is Plotinus in this distinction between real objects and their unreal mirror images that he uses it as an analogy in support of his claim that reality lies with form rather than matter. However, what is more striking is that Plotinus allows that under certain circumstances (if the image in the mirror endured, and if the mirror itself was not visible) these reflections might fool us as well. Indeed, it is our inability to distinguish image from reality that lends interest to such spectacles as fun houses, with their halls of mirrors, and the illusions performed by magicians. In these cases, we do make the same mistake as Alice. It is this possibility of fundamentally conflating image, or representation, with reality that lends mirrors their metaphysical interest.

Virtual reality may present us with a new sort of mirror; one with the potential to surpass even the finest optical mirrors. If so, then virtual reality may fatally complicate the usual mechanisms used to distinguish image from reality, and representation from what is represented. For Plotinus, it is the limitations of the mirror image that reveals its status as a reflection of reality. It is only because images in a mirror are transient (fleeting, temporary, failing to persist over time or cohere with the rest of our perceptions) and because the mirror itself does not remain invisible (its boundaries glimpsed, or reflecting surface flawed or otherwise directly perceptible) that enables us to tell the difference between image and reality. One of the inherent limitations of any mirror is that it is necessarily confined to optical representations. Reaching out to touch an object in a mirror always reveals the deception. However, in immersive versions of virtual

reality, the image need not be limited to sight. In virtual reality, the representation may pass scrutiny from any angle using any sense. As for transience, while the images in virtual reality may disappear at any moment, they also may be just as permanent and long-lived as any real object or event. Moreover, mirrors can only reflect the images of already existing things. Virtual reality has no such constraint. Objects in virtual reality may be copies of other things, but they also may be their own unique, individual, authentic objects existing nowhere else. This last point means that the grounds for needing to distinguish image from reality have changed. It is not simply that the representations of virtual reality are false (not genuine) like the reflections in a mirror. It is not even analogous to Plato's view of theater, which was to be banned from his Republic because of its distortions and misrepresentations of reality. Instead, virtual reality may summon up a whole new reality, existing without reference to an external reality, and requiring its own internal methods of distinguishing true from false, what is genuine or authentic from what is spurious or inauthentic.

Dreams too can provide occasions where perception and reality become interestingly entangled and may be one of the best, and most familiar, comparisons for virtual reality. Dreams possess many (although not all) of the elements of virtual reality. Dreams are immersive, matching in sensory clarity and distinctness even the most optimistic science fiction accounts of virtual reality. In his *Meditations*, Descartes famously entertains the possibility that there may be no certain method for distinguishing dreams from reality. He writes: "How often, asleep at night, am I convinced of just such familiar events – that I am here in my dressing gown, sitting by the fire – when in fact I am lying undressed in bed!" and finds such anecdotes sufficiently persuasive to conclude that "I see plainly that there are never any sure signs by means of which being awake can be distinguished from being asleep" (Descartes 1641: 77). Here, Descartes seems to suggest that dreams and reality can actually be confused, unlike Plotinus, who viewed the confusion of images in a mirror with reality as only a hypothetical possibility at best. Descartes, however, is unwilling to allow this

much uncertainty into his philosophical system and so appends the following curious solution to the dream problem in the last paragraph of his last Meditation. “But when I distinctly see where things come from and where and when they come to me, and when I can connect my perceptions of them with the whole of the rest of my life without a break, then I am quite certain that when I encounter these things I am not asleep but awake” (Descartes 1641: 122). Along with clarity and distinctness, Descartes adds coherence as a final criterion for certainty, in an effort to resolve the doubts raised by the dream problem. This is despite the fact that one of the chief strengths of the dream problem, as he put it forward, lay in the fact that dreams often could be fit coherently into waking life.

Virtual reality also can pass these tests of clarity, distinctness, and coherence. Beyond this, VR, unlike a dream, is able to satisfy the requirement of intersubjective availability that only “real” reality is generally assumed to possess. That is, whereas a dream can only be experienced by a single person, virtual reality is available to anyone. At this point, Descartes’s dream problem takes on new life. Just as was true of the comparison with images in a mirror, the need to distinguish virtual reality from nonvirtual reality seems to dissolve. If virtual reality is not “real,” it must be on some basis other than those considered so far. Distinguishing dream from reality, for Descartes, just like distinguishing image from reality for Plotinus, takes on importance precisely because, without some reliable means of discrimination, such confusions run the risk of infecting an otherwise easily recognized reality with instances of unreality. This would render reality a concept of dubious usefulness, for it could no longer clearly be distinguished from its opposite, from the unreal, from appearance, from image, or from dream. Descartes and Plotinus both identify permanence and coherence as criteria of the real and transience as the mark of the merely apparent. However, such solutions work even less well in the case of virtual reality. At this point the name “virtual reality” starts to become justified. Virtual reality takes on an existence with a distinctly different character from dreams, images, and other mere representations.

Other metaphysical systems plot more subtle and complex relationships between appearance and reality. Kantian metaphysics occupies a pivotal place in the history of metaphysics providing, as it does, a continuation of important strands of debate from antiquity, the culmination of several disputes within the modern period, and the origin of many contemporary discussions in the field. Can the Kantian system help provide a more sophisticated description of the status of virtual reality?

Kant’s transcendental idealism revolves around the view that things in themselves are unknowable in principle and that human knowledge is only of appearances. Just like Descartes, Kant holds that we are epistemically acquainted with only our own perceptions. However, unlike Descartes, for Kant perceptual objects are nothing other than these patterns of representation encountered by the mind. Thus, Kant believes it is possible to overcome the epistemological problems introduced by the division between appearance and reality. This is because, for Kant, the mind plays an active, constitutive role in structuring reality. Chief among these contributions are the intuitions of space and time. Space and time are not themselves “things” that are directly perceptible, and yet, it is impossible for human beings to experience objects outside of space and time. What this means, according to Kant, is that “Both space and time . . . are to be found only *in us*” (1781: A 373). In this way, Kant hopes to overcome the epistemological divide between empiricism and rationalism by restricting knowledge to objects of experience, while at the same time granting an active role to the mind in structuring that experience.

Given a Kantian view, the objects encountered in virtual reality may not pose any significantly new metaphysical challenges. Since things in themselves are never the direct objects of human knowledge, the fact that experiences in virtual reality fail to correspond to objects outside the mind in any simple, straightforward way is not necessarily a problem. Every object of human knowledge, whether actual or virtual, is nothing other than just such an organized collection of perceptual representations. This means that virtual reality can be admitted to the world of empirical human experience on more or less

equal footing with the more usual forms of experience. Another way of stating this might be that, for Kant, all experience is essentially virtual. It is not epistemic contact with, or knowledge of, things as they exist apart from the mind that ever characterizes any human experience. What is known is only how those things appear to the mind. Given this, the fact that virtual reality exists for the mind (and can be made to exist for more than one mind) is sufficient to qualify those experiences as “real.” One may still need to exercise some care in using and applying the empirical knowledge gained by way of virtual reality. Likewise, inferences based on that knowledge must be confined to their appropriate domain. However, this holds true for any piece of empirical knowledge no matter how it is acquired.

Kantian metaphysics may also help explain why human interactions with computers have conjured up these strange new frontiers of virtual space and virtual time. If it is true, as Kant conjectures, that the mind cannot experience things outside of space and time, then any new experiences will also have to be fit within these schemas. Although the mind does not possess innate ideas or any other particular content, it does provide a formal structure that makes possible any experience of the world. Presumably, this remains true of computer-generated worlds as well. Once computer-mediated experiences become a technical possibility, the mind also structures, organizes, and interprets these experiences within the necessary framework. Thus, virtual reality may be a predictable artifact of the mind’s ordering of these computer-generated experiences. Virtual space and virtual time may be the necessary forms of apprehension of virtual reality, just as space and time are necessary to the apprehension of reality. In the case of virtual reality, the claim that space and time are “found only *in us*” seems much less contentious. Given these possibilities and connections, virtual reality may turn out to provide a laboratory for the exploration of Kantian metaphysics.

At this point one may wish to retreat to the relative safety of a more thoroughgoing materialism, where what is real is only the circuits and wires that actually produce virtual reality. However, the cost of such a move comes at the

expense of the reality of all experience. It is not just Descartes and Kant who find a need to accord an increased status to ideas and perception. Even in Heidegger’s existentialist metaphysics there is always not only the object, but also the encounter of the object; and these two moments remain distinct, and distinctly important. This experiential aspect of virtual reality is something that invites a more phenomenologically oriented approach. It may be tempting to see virtual reality as a vindication of Platonist metaphysics, where the world of ideas is brought to fruition and the less-than-perfect world of bodies and matter can be left behind. Others argue that rather than demonstrating the truth of Platonic idealism, or marking the completion of the Cartesian project of separating the mind from the body, virtual reality instead illustrates the inseparability of mind from body and the importance of embodiment for all forms of human experience and knowledge. After all, even in the noncorporeal world of virtual reality, virtual bodies had to be imported, re-created, and imposed in order to allow for human interaction with this new virtual world. This tends to point to the necessity of embodiment as a precondition for, rather than an impediment to, experience and knowledge (see Heide 1999).

There are many other possible approaches to the metaphysics of VR. For instance, Jean Baudrillard’s theories of simulation and hyperreality seem readymade for virtual reality, pointing to a metaphysics where contemporary social reality could be understood as having already fallen prey to the order of simulation made increasingly available by virtual reality. From Baudrillard’s vantage-point, simulations, like those of VR, mark the end of our ability to distinguish between appearance and reality, reducing everything to a depthless hyperreality (see Baudrillard 1983). Another possibility would be to follow Jacques Derrida’s critique of the metaphysics of presence onto the terrain of virtual reality where the absence of presence could be marked in new, high-tech ways. However, rather than pursuing additional examples, at this point it is better to inquire into a different, although closely related, set of metaphysical problems concerning the identity of the self.

Virtual Identity

In addition to raising questions about the nature and status of external reality, virtual reality also raises difficult questions concerning the nature of the subject, or self. Despite the differences in the metaphysical views discussed up to this point, there is one area of general agreement. Whether Platonist, Cartesian, or Kantian in orientation, in all of these systems there is a shared notion of a unified, and unifying, subject whose existence provides a ground for knowledge, action, and personal identity. Such a conception of the subject has been complicated in recent years. In particular, poststructuralist accounts of a divided and contingent subject have raised questions about the adequacy of previous views. Virtual reality also complicates assumptions concerning a unified subject. The example discussed above of images in a mirror can be used again to approach these questions surrounding the subject, this time through the work of Jacques Lacan.

Lacan's influential formulation of the "mirror stage" pushes the notion of the knowing subject to its limits. Inverting traditional Cartesian epistemology, the subject, instead of being the first and most surely known thing, becomes the first misrecognized and misknown thing. This is an even more radical mistake than that made by Alice in her trip through the looking glass. At least when Alice looked in the mirror and saw a girl very much like herself, she still took it to be a different little girl and not herself. For Descartes, this would amount to a mistake in the one thing he thought he could be certain of, the *cogito*. Given Lacan's view, "I think, therefore I am" becomes an occasion for error when pronounced while looking into a mirror. In this case, the I of thinking can differ from the I of existing (the I of consciousness thinks, therefore the I in the mirror exists). Lacan reworks the slogan to read, "I think where I am not, therefore I am where I do not think" (Lacan 1977: 166). Such a formulation could never serve as Descartes's foundation for knowledge once this division is introduced within the subject.

This divide within the subject is precisely what is highlighted in Lacan's discussion of the mirror stage. Lacan writes: "We have only to understand

the mirror stage *as an identification*, in the full sense that analysis gives to the term: namely, the transformation that takes place in the subject when he assumes an image" (Lacan 1977: 2). The subject is thus produced by an identification with an image, an image that is not the subject and yet which is mistaken to be identical with it. If identity is based on identifications, and identification is always an identification with something one is not, then one's identity will always be something that is at odds with itself. Elsewhere, Lacan explicitly relies on an example of a trick done with mirrors to illustrate the situation of the human subject. Here, the illusion of a vase filled with flowers is produced. For Lacan, it is the illusion of the self that is produced. (See figure 12.1.)

In the figure, the subject occupies the position of the viewer (symbolized by a barred S to re-emphasize this division which founds the subject), and the ego is represented by the virtual image of the inverted vase seen in the mirror. Lacan is proposing that a mistake worse than that made by Alice with the looking glass is not merely commonplace, but constitutive of human subjectivity. The self, emerging over time as the result of a series of identifications with others, is, like the image of the vase in the mirror, not actual but virtual.

Virtual reality compounds this dilemma. If in reality the subject is already not where it thinks itself to be, in virtual reality the situation becomes even worse. Virtual reality provides an open field for various and even multiple identities and identifications. In virtual environments, people are not confined to any one stable unifying subject position, but can adopt multiple identities (either serially or simultaneously). From the graphical avatars adopted to represent users in virtual environments, to the handles used in chatrooms, to something as simple as multiple e-mail accounts, all of these can be used to produce and maintain virtual identities. Identity in virtual reality becomes even more malleable than in real life, and can be as genuine and constitutive of the self as the latter. Sexual and racial identities can be altered, edited, fabricated, or set aside entirely. Identities can be ongoing, or adopted only temporarily. Thus, virtual reality opens the possibility not only of recreating space and time,

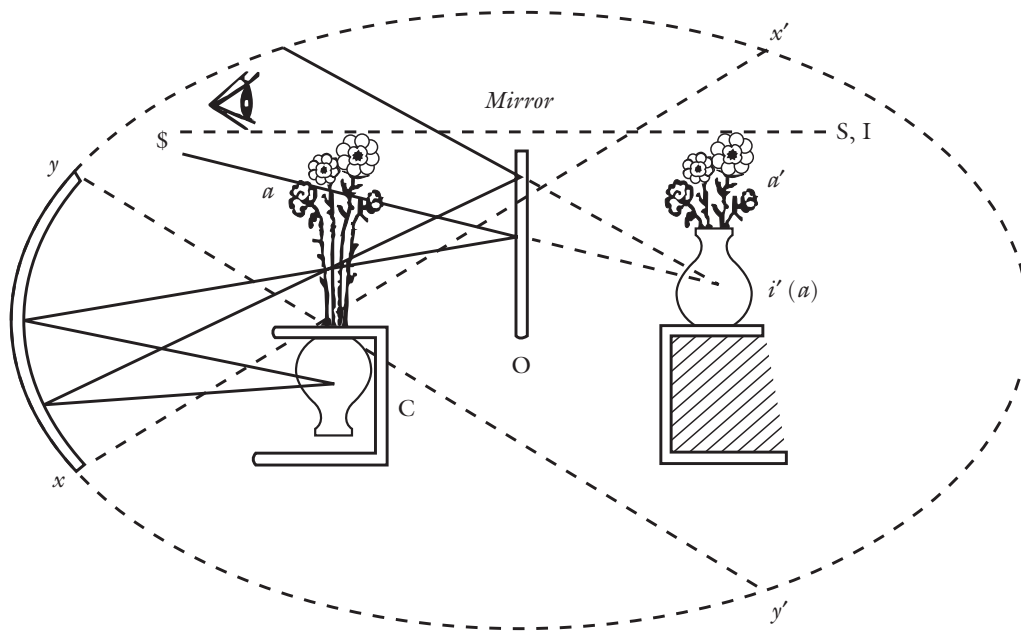


Figure 12.1: The illusion of a vase/the illusion of the self (Lacan 1978)

Source: "Diagram on p. 145," from *The Four Fundamental Concepts of Psycho-analysis* by Jacques Lacan, tr. Alan Sheridan.

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but the self as well. The subject is produced anew as it comes to occupy this new space. In her influential book *Life on the Screen*, Sherry Turkle argues that online identities make "the Gallic abstractions" of French theorists like Lacan "more concrete," writing: "In my computer-mediated worlds, the self is multiple, fluid, and constituted in interaction with machine connections; it is made and transformed by language" (Turkle 1995: 15). For Turkle, the divisions and fragmentations that mark every identity take on new prominence and find new uses in the virtual reality of online society.

Economic Reality

The metaphysics of virtual reality may strike some as the most esoteric of topics, far removed from everyday life and practical human concerns. However, metaphysical views often have a surprising reach and can make their influence felt in unsuspected ways. In the case of virtual reality, these metaphysical attachments are currently in the

process of producing and reshaping vast areas of our social reality. If virtual reality has yet to supplant more traditional modes of human interaction with the physical world, with each other, and even with oneself, there is one arena in which virtual reality has already made startling and astonishingly swift inroads, and that is in the realm of economics. From ATM machines and electronic transfers to the dot-com boom and bust, global capital has not been shy about leaping into the virtual world of e-commerce. Why has global capital been able to find a home in this new virtual economic space with such ease and rapidity? What does this colonization of virtual reality portend for other noncommodity possibilities of virtual reality?

Globalization is a process that has certainly been facilitated by the information economy of the digital age. Mark Poster has described this situation as "Capitalism's linguistic turn" as the industrial economy segued into the information economy (Poster 2001: 39). Capital has been instrumental in producing and disseminating the technologies that have made this process possible. The coining of the phrase "virtual reality"

is most often attributed to Jaron Lanier, a developer and entrepreneur of virtual-reality systems, to use as part of a marketing strategy for his software company. The potential of e-mail as an advertising medium was pioneered early on when, in 1994, a pair of enterprising green-card attorneys became the first to use e-mail as a form of direct marketing. Computer sales, driven by the expansion of the internet, fueled the expansion of the high-tech economy to such an extent that the internet service provider America Online could afford to buy media giant Time Warner. Virtual reality has created new commodities, which have quickly become new economic realities. Capital has also tended to transplant and reproduce already existing social and economic inequalities into this new virtual world. For instance, there has been much discussion of the “digital divide” between those with access to global information networks and those without. This divide falls along the well-worn demarcations of race and gender, but even more starkly, along class lines. The divide between rich and poor, both within and between nations, has been mapped onto the very foundations of the information age. These capitalist origins of virtual reality should not be forgotten.

Capital organizes economic and social life around the production and consumption of commodities. Marx writes that the commodity form raises a whole host of “metaphysical subtleties and theological niceties” (Marx 1867: 163). Relationships between commodities become “dazzling” in their variety and movements, while the social relationships between producers and consumers become obscured behind the appearances of wages and prices (Marx 1867: 139). For Marx, the value of a commodity only emerges virtually. The value of one commodity finds expression only in the body of another commodity through the relationship of exchange. Thus, the value of a watch might be expressed in its exchange for a cellphone. This system of exchange finds its culmination in money, a commodity whose function is to provide a mirror for the value of every other commodity. The particular commodity serving as money changes over time, from gold and silver to paper and plastic, as money asymptotically approaches the perfect mirror described by Plotinus, where only the image

remains and the mirror disappears. The current electronic transfer of funds around the globe comes close to realizing this goal (for a further discussion of “digital gold” in the information age, see Floridi 1999: 113ff). It may be that this spectral nature of money means that capital is uniquely adapted for virtual reality. Money is already the virtual expression of value.

For capital, the additional “metaphysical subtleties” tacked on by virtual reality may scarcely matter. The already virtual existence of money has facilitated the migration of capital into virtual reality with nothing lost in the transition. The online virtual reality of the internet was once home to a variety of small, but close-knit, virtual communities. This has changed. Now the character and function of the internet more closely resembles a virtual shopping mall as advertisements appear everywhere and the identity of consumer overtakes every other online identity. We may currently be living through a process of virtual primitive accumulation, or a kind of electronic enclosure movement, as the free association and utopian possibilities offered by online virtual reality are driven out by the commodification imposed by global capital. Capital, long a kind of universal solvent for social relations, is currently transforming the virtual social relations of online life at a breathtaking pace. However, this process does not occur without active resistance (see Chesher 1994, and Dyer-Witheford 1999). It is here that the urgency of these otherwise abstract metaphysical speculations can be felt. The metaphysics of virtual reality provides the horizon on which a host of new ethical and political questions will take shape and within which they must be answered.

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