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[−] Abstract and Keywords

This chapter is a philosophical meditation on art made in virtual worlds. It proceeds by locating such art within three thematic contexts, those of new media art, computer-generated virtuality, and worldhood. Discussion of these themes draws upon the resources of Western philosophy, including the work of Aristotle, Aquinas, Scotus, Kant, Marx, Bergson, Husserl, Benjamin, Adorno, and Deleuze. The meditation concludes by specifying six dimensional characteristics that make virtual worlds a unique medium of aesthetic expression: immersion, interaction, ambiguity of identity, environmental fluidity, artificial agency, and networked collaboration. While other art forms might share one or two of these characteristics, only the art of virtual worlds is capable of exhibiting all six, so that it is the full cluster of characteristics that makes this media unique.

Keywords: Art, aesthetics, philosophy, immersion, new media, identity, collaboration, Deleuze, Benjamin, Marx

IN 1967 Guy Debord wrote, in *Society of the Spectacle*: "In societies where modern conditions of production prevail, all of life presents itself as an immense accumulation of spectacles. Everything that was directly lived has moved away into a representation" (Debord 1967 [1977], 1). An English translation of the book was published in paperback ten years later. On its cover, there is a photograph of a movie audience wearing 3D spectacles. The book designer understood that "the society of the spectacle" would not reach full development until images became immersive. Computerization made possible what the 3D cinema of the 1950s and 1960s could only imperfectly anticipate, first in the form of computer games, and then as full-blown virtual worlds. Artists have been drawn to both media, but especially to virtual worlds such as *Second Life* and *OpenSim*. The appeal is understandable. What painter, for example, has not entertained the fantasy of the canvas as a portal permitting physical entry into the world of the painted image? Virtual worlds bring that fantasy closer to realization. This chapter attempts to shed philosophical light on this new development in the realm of images.[1]

In order to understand art made in virtual worlds, it is necessary to locate it within three thematic contexts. Proceeding from the general to the specific, the art of virtual worlds is a form of new media art; its medium is computer-generated virtuality; and its virtuality has the form of worldhood. In what follows, we will consider each of these themes in order, as well as the specific "dimensional" characteristics (in a sense to be clarified) that make virtual worlds a unique medium of aesthetic expression.

New Media Art

There is no word in any language that distinguishes what we now call "art" from other forms of making prior to about 400 years ago. The emergence of the word follows epochal changes in the institutions and practices of making that occurred during that initial salvo of modernity, the Renaissance. At the heart of these changes is the successful bid of painters and sculptors to free themselves from the medieval guild system, and to achieve a status

equivalent to that of the scholar-practitioners of what was then referred to as "the arts." Traditionally the arts included both the seven liberal arts of the medieval curriculum (grammar, logic, rhetoric, arithmetic, geometry, music, and astronomy), and an alternative grouping under the seven Muses, more appropriate to Renaissance humanism (history, poetry, comedy, tragedy, music, dancing, and astronomy). The arts occupied the mental side of the division between mental and manual activity, the side of the learned professions as opposed to the crafts organized by guilds, the side of the life of the mind in contrast with that of the body as an instrument of physical work. Over the course of the Renaissance, the visual arts of painting and sculpture migrated from the manual to the mental side of the social division of labor. "Art" in the modern sense of the word, with the visual arts at its center, established itself as a learned profession rather than a craft activity, and thereby shed its association with the traditional devaluation of manual work in the eyes of the upper classes. The elite patronage system that supported the arts in this period was both partial cause and result of this bid to liberate art from the laboring body.

Still, the basis of the artist's claim to elevated status was proficiency in technique. Technique is mastery of artistic material. Artistic technique remains a form of *techne*, in the ancient Greek sense of knowledge that guides the process of making. Art, therefore, remained stubbornly connected with manual skill, in spite of its Renaissance claim to high status. But the material upon which artistic technique works is more than sheer physical material—the wood, stone, metal, and so on—of the guild-based crafts. While never losing its physical qualities, the material of "art," in the new sense of the word, is primarily historical and expressive in character. In analogy with the Renaissance arts of history, literature, and music, artistic material is matter as the historical deposit of past acts of meaningful shaping. As a historical sedimentation, the expressive possibilities of artistic material change over time. The artist's ability to understand, shape, and expand these possibilities constitutes the essence of artistic technique (Adorno 1984, 300–308).

The development of modern technology as a radically new form of *techne*, transforms the nature of artistic technique. Modern technology makes its appearance in the first phase of the Industrial Revolution. As Marx points out in the first volume of *Capital*, the reconfiguration of bodily labor into a series of discrete, repetitive movements that characterizes the transition from guild to industrial production prepares the way for the substitution of machinery, such as the power loom, for the human body in the labor process (Marx 1976, 490–491). In its second phase, however, one that Marx barely lived to see, industrial technology breaks even more radical ground. It proceeds to apply machinery to forms of making that have no bodily model, such as chemical and electrical processes. The second kind of modern technology, shaping without bodily precedent, leads to the creation of new media, and the emergence of new media art. Here even the residual attachment of the arts to manual skill burns away.

The earliest forms of new media art are photography and cinema, each of which depends upon the development of chemical processes, optical devices, and finally electrical machines. Walter Benjamin refers to both of these arts in his enormously influential essay "The Work of Art in the Age of Its Technological Reproducibility." But we need to be careful here. Benjamin's treatment equivocates on the question of whether reproducibility is reproduction of an original. Although he recognizes that photography, for example, has no single authentic print, his paradigmatic example of reproducibility is that of a photograph of an artwork, a statue or painting, that possesses what Benjamin calls an aura, a mark of its authenticity and authority, derived from its original place in magical or religious practices (Benjamin 2008, 21–22). In his description, the aura of the original is lost through its photographic reproduction. It would seem, on this account, that the photograph is a degraded reproduction of the original thing, namely, the original minus its aura. But this fails to recognize the fact that, while photography and cinema may produce multiple copies, these "copies" are sui generis, and not subordinated to a model to be replicated. The light reflected by the surface of a physical thing and focused by the lens of the camera initiates a series of physical and chemical events that results in a fundamentally new image, even when that series is steered by the photographer's desire to "capture the subject." If the digital image has now made the problem of the authenticity and truth of the photographic image intractable, this is merely because it has made apparent what was already the case with analogue imagery, that is, that the photographic image is something fundamentally different from an ordinary percept caught on film. In spite of the apparent realism of photography and cinema, these two forms of new media art are not essentially reproductive at all. Their innovative character involves instead new forms of productivity beyond bodily production.

The emergence of new media art breaks the link tying artistic technique to manual skill, but it does not complete the process of assimilating art to the learned professions. The new media artist is a sibling of neither craftsman nor

scholar. Rather he or she is an organizer and operator. For example, the photographer organizes camera, chemical bath, negative, enlarger, paper, and so on into an ensemble of processes resulting in the photo. The photographer also operates the camera, enlarger, and print drier, all of which are machines interposed between his or her body and the artwork. In cinema, the director is organizer of a crew that makes the film—cameramen, sound engineers, editors, and so on—who in turn operate the machines that shape the cinematic material. Organization and operation certainly belong to the life of the mind, but not as it was understood by Renaissance humanism. That is to say, they do not belong to that dimension of human existence that elevates it above the material world and the problem of its mastery. Instead, organizing and operating are concerned precisely with the mastery of matter, but through the manipulation of intermediary machines, especially those involving chemical and electrical processes. Since organization and operation take over the functions of manual technique, new media art is "conceptual" from the beginning. Its conceptuality, however, is more akin to that of applied science and technology than to the high-culture-creating intellect of Renaissance humanism. In this very specific sense, photographers and directors are the first "conceptual artists."

The conceptualism of photography and film reaches its culminating expression in the formalized symbolic languages of computerized new media art. The earlier phases of modern technology interposed physical machine processes between maker and material. The current phase interposes symbols. It is true that digital symbols are usually connected to such physical machines as computer screens, printers, and speakers. The point, however, is that by operating with any one of a nested hierarchy of formalized languages—machine language, programming language, or application—the artist directly faces symbols, but not the machines they operate. In working on formal symbols, computer art differs from older new media art.

Virtuality

The concept of the virtual has a long history in Western thought, going back to the ontological distinction Aristotle makes in his *Metaphysics* between substance in a state of latency (*dynamis*) and substance in a state of full and active presence (*energeia*) (Aristotle 1968, Book Theta). Being is said in many ways, Aristotle tells us, but one of the ways in which it is said is primary, and all of the others are parasitic upon that primary sense. We distinguish, for example, between a quality, such as being snub-nosed, and the underlying substance (*ousia*) that possesses the quality, say, Socrates; or between a location, such as being above the moon, and a substance, such as one of the fixed stars, that is in this location. The various ways in which being is said are what Aristotle calls the categories, and substance is the primary category. Latency and presence are not categories, however, but the ways in which substance itself has being prior to any of its qualities, locations, or other categorial specifications. Aristotle gives the examples of a seed and the full-grown tree into which the seed develops, and an unworked block of marble and the statue that emerges from it. The seed may be rough or smooth, and the tree may be gnarled or straight, but none of these qualities concerns the relation between *dynamis* and *energeia*. That relation involves the development of the tree from the seed, that is, the full unfolding of the underlying substance. Similarly, the marble may be white or pink, and the final statue painted or not, but the relation between *dynamis* and *energeia* pertains, not to these categorial specifications, but rather to the emergence of the statue from the marble under the sculptor's hand.

For Aristotle, *dynamis* is just as much a form of being as *energeia*. Still, *energeia* has an ontological priority over *dynamis* that derives from its ability to account for processes of change. Every natural or artificial process of change is a transition from latency to full presence. But such transitions can be initiated only by something that is already fully present. This is why Aristotle postulates the existence of a prime Unmoved Mover, a fully present being who is the final cause of change by acting as the lure or perfect exemplar to which all things seek approximation. This is also at the root of the medieval conception of God as *actus purus*, as the ultimate object of desire who keeps the whole universe in motion, the cosmic pole of Love who, as Dante says in the incomparably beautiful final canto of *The Divine Comedy*, "steers the sun and the other stars."

The Romans translated *energeia* with the single word, *actus*, but they used two words they regarded as synonyms as translations of *dynamis*: *virtus* and *potentia*. This lack of distinction in meaning is appropriate, since Aristotle had not distinguished between two senses of *dynamis*. But medieval thinkers who followed the Romans made the distinction that Aristotle and his Roman translators had not. In particular, Duns Scotus and Thomas Aquinas introduced the technical term *virtualiter* to signify that which has being in a virtual, though not a potential manner.

Aquinas applied the concept of having being *virtualiter* to the existence of elements in a mixture (Aquinas 1948, Ia, 76, 4 ad 4). He made the point that elements exist virtually, not because of a potential to separate from the mixture, but rather because they contribute their special powers to the mixture, without appearing as distinct substances. Earth is *virtualiter* in marble, for example, because it is what makes marble heavy, not because it is potentially the independent element, earth. In this sense, being is virtual when it does not fully and explicitly appear, and yet is the locus of a real power, or efficacy.

Scotus's conception of being *virtualiter* is related to his anti-Aristotelian thesis that being is univocal, not analogical in meaning (Scotus 1978, 3–9). For Scotus, Aristotle was wrong when he claimed that being is said in many ways, and achieves unity only when each meaning is analogically related to the primary sense in which it is said, namely being as substance. Aquinas had followed Aristotle by arguing that our talk of God is based on an analogical extension of our talk about the only entities we encounter in direct experience, namely God's creatures. But Scotus argues against this Thomistic-Aristotelian position by claiming that being means precisely the same thing whether it is attributed to God or to creatures. His argument is that God is infinite in character. But this means that God possesses in an unlimited degree all the positive attributes possessed by finite things. However, in order for this assertion to be meaningful, God must possess the same attributes as finite entities, differing only in the way in which he possesses them. Whether we are speaking of the attributes of God or of creatures, our language has a univocal sense. Scotus introduces the concept of virtual being in the context of his theory of univocity.

If being is always said in the same way, Scotus asks, then what is the status of the "transcendentals"? The transcendentals are expressions such as truth, unity, and goodness that lie above any genus because they must be predicated of whatever has being. For Scotus, unity, truth, and goodness are coextensive with being, and yet they add something to the concept of being. Being is always said in the same way, but there is more to say about being than is contained within its concept. This means that the transcendentals are present within being, not as real parts of its essence (*in quid*), but in a virtual manner (*virtualiter*).

Both Aquinas's and Scotus's ideas of virtuality lie opposite to what the word "virtual" later came to mean in English: the sort of, but not quite real. For the two medieval thinkers, virtuality is augmentation rather than impoverishment. Virtual being adds something to actual being, so that the sum of the two is more than either regarded separately. The virtual and the actual are equal and irreducibly distinct aspects of reality.

Henri Bergson renewed this medieval conception of virtuality as augmentation in the late nineteenth century. In his early masterwork, *Matter and Memory*, Bergson contrasts what he calls the "pure past" with the actual memory-image that makes the past available to our living present (Bergson 1962, 171). Say I meet someone on the street whom I know, but cannot remember from where. Was it my freshman year in college, or my stint in the army, or…? Bergson says that I am searching in the pure past for the stratum of memory where the person is located. The person must belong to my pure past as something real, or I would never be able to assign him a memory-image in a successful act of recollection. The pure past is real but virtual, in that it is not part of my actual present. Common to Aquinas, Scotus, and Bergson is the fact that each of these thinkers contrasts virtuality with actuality, but not with reality. The virtual and the actual are both real. This means that the concept of virtual reality has been with us for at least 800 years, 2,300 years if we trace it back to its progenitor, Aristotle.

Jaron Lanier was probably the first to use the expression "virtual reality" to refer to computer-generated immersive environments in the 1980s. But Ivan Sutherland had already vetted the idea in a three-page paper published in 1965, titled "The Ultimate Display." Sutherland focuses on the ability of graphical displays to make the mathematical processes involved in computation available to the human senses (Sutherland 1965, 506–508). By simulating sensory objects, the task of the display "is to serve as a looking-glass into the mathematical wonderland constructed in computer memory." The display is not limited, however, to simulating ordinary objects and processes. Since the rules of programming are not constrained by the laws of physics, Wonderland can be populated with strange denizens such as negative masses, opaque objects that suddenly become transparent, and triangles whose edges become rounded as soon as someone looks at them. Sutherland envisions the Ultimate Display as a room where the computer directly controls matter, like the Holodeck that would later be made famous by the *Star Trek, Next Generation* television series: "A chair displayed in such a room would be good enough to sit in…and a bullet displayed in such a room would be fatal." Properly programmed, "such a display could literally be the Wonderland into which Alice walked." In 1968, Sutherland took the first step toward realizing his vision of a digital Wonderland when he implemented the earliest form of virtual reality with wire-frame graphics and a

stereoscopic head-mounted display.

At the same time Sutherland was implementing his early version of virtual reality, Gilles Deleuze was finishing *Logic of Sense*, an important philosophical work that includes an extended discussion of Wonderland (Deleuze 1990, 1–35). The world Alice enters when she falls through the rabbit hole or passes through the mirror subverts not only the laws of physics, but those of ordinary logic as well. According to Deleuze, Alice is caught up in a paradoxical logic of events. After reaching the bottom of the rabbit hole, for example, Alice recognizes that she is becoming bigger (than her earlier size), and smaller (than her later size) at one and the same moment. The events in Alice's world have no trouble exhibiting normally incompatible properties. The Stoics were the first to recognize that events are not things, but play on the surfaces of things. In a famous Stoic example, a knife, my arm, and the movement of the knife along my arm are all physical. But "having been cut" is not a physical property of my arm. It is a "sense," a surface effect of the underlying state of physical things. While physical being is actual, the realm of senses, or events, is virtual. The logician-storyteller Lewis Carroll is the second great explorer, after the Stoics, of the virtual realm of sense and its paradoxes.

For Deleuze, though virtuality is an aspect of reality rather than a linguistic artifact, it is nevertheless inherently expressible in language as the sense, or ideal content, of propositions. This is a major theme in twentieth-century philosophy, especially in the work of Frege, Meinong, and Husserl. Between the proposition as a linguistic entity and the state of affairs it denotes, there is the meaning of the proposition, the way in which it denotes. Meanings are ways of "seeing as," varying "slants" on things. For example, I can see and refer to the pen as lying on the table, or as a gift from my friend, or as having been made in France. Husserl calls meanings *noemata*, literally, "thought objects." In a celebrated turn of phase, he says that the tree burns, but the noema of the tree does not.

Lewis Carroll's books reflect on the nature of sense, not philosophically, but by humor, pun, and paradox. Wonderland and the looking-glass world are places where sense runs rampant, where it replaces things and states of affairs. (A great deal of Alice's confusion stems from the fact that she often takes senses to be things.) What links senses with events is the significance of the verb and its derivatives: a burning tree, a shrinking child, a grinning cat. We understand something *as* something when we grasp the verb that characterizes it, and so the manner in which it appears. The Cheshire Cat's grin survives the disappearance of the cat because it is not a physical being, but rather a grinning way of being a cat, in other words, a cat-event.

Contrary, even contradictory, meanings can coexist when regarded as meanings, rather than as belonging to things and states of affairs. In an example from Meinong, the round square has a perfectly definite sense, even though it is impossible for such a thing to exist. Or in another feline example from Carroll, Alice recognizes in a moment of lucidity that it doesn't make any difference whether cats eat bats, or bats eat cats, as long as we do not know which is true (as long as we regard both as pure senses). Paradoxically, nonsense is a part of the logic of sense as contrasted with the logic of things.

Although Deleuze does not discuss computers in his book, his insights nevertheless illuminate the nature of computer-generated virtual reality. Just as the virtual domain of sense is a surface effect of underlying physical states, computer-generated virtual reality is a surface effect of the underlying state of hardware. Computer hardware is able to assume any number of possible physical states. Each state is a differential, and normally changing, distribution of electrical charges. Programming code constrains the plasticity of the physical machine by determining the way the charges may be distributed. The machine distributes charges in such a fashion as to simulate the operation of a typewriter, or a camera, or a sound studio, and so on. This was Turing's discovery (Turing 2004, 58–90). A universal Turing machine (universal because it has a notionally infinite memory) can simulate any finite machine. The real machine has virtual effects on the surface level, the level where the user interacts with the machine. This is the so-called "user illusion." Physical processes occurring in depth give rise to surface virtual effects. But this is just the point the Stoics, Lewis Carroll, and Deleuze make.

Worldhood

Shortly after the development of head-mounted displays and associated devices, artists began making virtual art. But because of the equipment involved, including fast computers with enormous memories, this was a very expensive proposition, sometimes requiring the investment of hundreds of thousands of dollars, and therefore corporate or government sponsorship. When virtual worlds resident on the Internet began to develop over the last

two decades, the monetary barrier to creating virtual art was broken. The opening of *Second Life* in 2002 was especially important in this regard, since SL makes its content-creation tools available to users.

The fact that virtuality takes the specific form of a world or plurality of worlds has important consequences for the practice of virtual art. But what exactly is a world? Kant tackles this question in his *Inaugural Dissertation*:

> In a substantial composite, just as analysis does not end until a part is reached which is not a whole...so likewise synthesis does not come to an end until we reach a whole which is not a part, that is to say, a world.

> (Kant 1968, 47)

The problem both analysis and synthesis presented to Kant is that of completing an infinite task in a finite time. Neither the simple part nor the world as a whole can be given in sense experience, because analysis in the first case and synthesis in the second cannot be carried to a conclusion. Simple part and ultimate whole are what Kant calls "Ideas of Reason." In *the Critique of Pure Reason*, he tells us their only legitimate function is regulative in character. The Idea of a world gives us, not knowledge, but a rule that tells us to carry on with synthesis no matter how far we have gone (Kant 1978, 449–458).

What for Kant is a regulative Idea is for Husserl something we directly experience (Husserl 1970, 142–143, 161–164). For Husserl, we experience the world, but not in the same way we experience discrete objects. We experience objects as standing out against the ground of a world that surrounds them, a world that can be explored but not exhausted. The object presents itself as something that invites us to surpass it, something that refers to other things, and ultimately to the totality of things. But this totality can never be given as something over and done with. The world-totality always remains radically open. We are in the midst of a world that draws us into itself, a world that is perpetually excessive, and so cannot be represented as a completed whole.

Our incarnation in a living body is the correlate of the infinite openness of the world. For Husserl, the world gives itself as arrayed around a living body that is mobile and exploratory, a body that can move beyond every finite object in the act of probing the world that is that object's ground. The experience of being in a world through a living body is that of immersion. To be immersed means to be in the midst of things (*in media res*) rather than holding them at a distance. The French phenomenologist Merleau-Ponty would later say that there is no bird's-eye view of the world, no "high altitude thinking" that could provide us with a comprehensive conceptual grasp. Or as his friend Jean-Paul Sartre was to paraphrase him: "We are grounded from birth" (Sartre 1965, 158).

Virtual worlds are immersive because immersion is a necessary condition of any world we are capable of experiencing perceptually. In the case of virtual worlds, however, immersion is mediated through the user-controlled avatar as a digital surrogate of the perceiving, mobile body. New visitors to virtual worlds are often astonished to find just how powerful the experience is of being lodged in an avatar body. Avatars, for example, keep appropriate distances from one another, getting close enough to make face-to-face communication effective, but not so close as to infringe on each other's "personal space." Perhaps even more surprisingly, when a user's physical body is tired, he or she often experiences the desire to have the avatar sit or lie down. Of course, the more intense such palpably somatic sensations are, the more powerful the experience of immersion.

However, immersion is not only perceptual in character. It also involves such psychological phenomena as the fixation of attention and the willing suspension of disbelief, both of which are involved, for example, when we are immersed in the imaginary world of a play or novel. In the collaborative work, *4 Jetpacks 4*, the virtual artists Bryn Oh, Nonnatus Korhonen, and Glyph Graves explore both perceptual and narrative forms of immersion in a self-enclosed installation that hosts a narratively structured performance piece (see Weblink: Zabel 1 immersion 1-30).

Like immersion, interaction is a necessary condition of worldhood. If we were incapable of interacting with other things, then we would not share with them a common world-context. Husserl insists that, before causality is a category of the exact natural sciences, the world of ordinary experience connects objects with one another and with embodied subjects in a common "causal style." Heidegger makes a similar point when he says that being-in-the-world involves "dwelling" along with other beings (Heidegger 1962, 105). We share a world with other things only when things matter to our bodies, when they have an actual or potential impact upon us, and when, conversely, our bodies matter to things. In virtual worlds, the avatar is able to manipulate objects, to move them

from place to place, to sit or stand or lie upon them, to make them crash into one another, and so on. And just as importantly, objects may block the avatar's movements and so must be circumvented by varying bodily strategies, just as we must walk around some obstacles in the actual world, or jump over others. In other words, causal efficacy runs in both directions: from avatar to object, and from object to avatar. This reciprocal, interactive connection is a form of engagement, an encompassing inclusion of the avatar and its user in a surrounding world of real things (see Weblink: Zabel 2 interactive 1-19).

The use of the word "real" here is a conscious choice on the part of the author. One of the unfortunate linguistic habits of participants in *Second Life* is to contrast *Second Life* with Real Life (SL with RL, in the online shorthand of the initiated). But SL is RL, in one of its virtual expressions. Virtual worlds are not fake, or even imaginary worlds. They are computer-generated augmentations of reality.

The Six Dimensions of Virtual Art

In the history of new media, artists have tended initially to treat the new on the model of the familiar. Most media theorists are familiar with this principle from Marshall McLuhan's work, through it is also present in more sophisticated form in the philosophical hermeneutics of Hans Gadamer, as well the aesthetics of reception of Hans Robert Jauss. The basic idea is that our encounter with something new always occurs within an horizon of expectations that we carry with us from the past, and that shapes our acts of interpretation. Understanding occurs through the gradual modification of prejudices (prejudgments) in the light of ongoing experience. With respect to the history of new media, the earliest photographers shot historical and mythical scenes in studios in emulation of academic painting, and the first filmmakers kept their movie cameras stationary in accordance with older photographic practices. It takes considerable time and experimentation to discover the unique dimensions of the material made available by a new medium, and hence the artistic technique required for its mastery. The art of virtual worlds (at most two or three decades old) has followed this pattern, tending to fall back in its initial stages on earlier filmic, photographic, painterly, sculptural, and architectural models. But this phase is coming to an end as virtual artists begin to explore the unique dimensions of their medium.

Let us stipulate a definition of "dimension" as a parameter or matrix along which data changes in accordance with a rule. Given this definition, time and space are specific examples of dimensionality, but not the only ones. Temperature and air pressure, for instance, are dimensional in that they change in a rule-governed way when we move from the surface of the earth to the sky. Color has differing forms of dimensionality depending upon the color wheel an artist employs. Programmable computer operations are also dimensional in this usage of the word, since programs are comprised of algorithms, which are so strictly rule-governed that they can be implemented by machines.

At their current stage of development, virtual worlds posses six dimensions that collectively distinguish art made there from that of other forms of new media art. These dimensions are

1. Immersion
2. Interaction
3. Ambiguity of identity
4. Environmental fluidity
5. Artificial agency
6. Networked collaboration

We have seen that immersion and interaction are necessary conditions of worldhood. Without them, virtual worlds would not be worlds at all. These two ontological conditions of worldhood are, at the same time, aesthetic dimensions of art created in virtual worlds. The other four dimensions result from particular, contingent decisions concerning design and implementation. They apply specifically, though not exclusively, to *Second Life* as well as other virtual worlds that permit user-created content, and hence artistic activity. (*World of Warcraft* exhibits these four dimensions, although it does not permit user-created content.)

Ambiguity of identity results from the fact that our bodily presence in the virtual world is mediated by a variable digital representation (an avatar). Dwelling within a world involves being present in a body. The body both constitutes our perspective on things and makes us present to other embodied experiencers. Though personal

identity can be a very complex construction, its ultimate foundation is continuity of bodily presence. But in SL and similar worlds, digital bodies and the names that uniquely identify them can be altered, multiplied, discarded, or exchanged at the will of the user. Since bodily presence is open to such radical discontinuity, the identity of the virtual person is protean and ambiguous, including indicators of age, gender, race, and even biological species. In a globalized age of fluid identities, this is an especially rich area for artists to explore (see Weblink: Zabel 3 ambiguity of identity 1-17).

Environmental fluidity is to the external virtual world what the protean character of identity is to the internal sphere. Since the virtual environment is constructed from graphical primitives and scripts that can be altered very rapidly, constancy is the exception rather than the norm. It is in the virtual world that Marx's famous observation about capitalist modernity reaches fruition: "All that is solid melts into air" (see Weblink: Zabel 4 environmental fluidity 1-10).

Artificial agency refers to the facility with which software agents can be embedded in virtual worlds. Since the virtual world is itself a complex program, it is relatively easy to introduce into it artificial life and intelligence as responsive and even evolving forms of aesthetic expression. Here the artwork sheds its character as an object, becoming an actor instead (see Weblink: Zabel 5 artificial agency 1-8).

Because virtual worlds reside on servers connected to the Internet, they offer unprecedented opportunities for collaboration across national and linguistic boundaries. Such networked collaboration between artists, as well as artists and audiences, can involve formidable organizational and aesthetic difficulties. But never before has art been capable of such globalized collectivity (see Weblink: Zabel 6 networked collaboration 1-15). It is true, of course, that virtual worlds share some of these dimensions with other forms of new media, but no other medium exhibits the entire group of six. The whole cluster is what makes the art of virtual worlds something unique.

In 2009–2010, through the nonprofit organization Virtual Art Initiative, I initiated collaborative explorations of each of the six dimensions discussed above in *Second Life*. Each collaborative team included between 2 and 12 artists charged with producing a single work or an integrated group of works exploring one of the six dimensions in an attempt to discover some of its inherent expressive possibilities. The whole effort was conceived as an experiment in the reflective mastery of the material that is unique to the art of virtual worlds. More than 40 artists from 14 countries participated in the project, and their work was exhibited in six virtual exhibitions in *Second Life*, as well as in the physical space of the Harbor Gallery of the University of Massachusetts at Boston in April 2010.

Although I have already made Weblink references to this work above, the short space of the present chapter does not permit a discussion of the results of the project in the actual pages of this book. For that, the interested reader will have to travel to the book's virtual augmentation by going to its associated website. There we will discuss the collaborative works while illustrating them with digital images and videos.

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Notes:

(1) . The are important political questions of Debordian inspiration that need to be raised concerning the images that populate virtual worlds, but that is a theme for another discussion.

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