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# Postmodernism and Replication Technologies

## A Theory of the Mechanics of Culture

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*Abstract: This essay speculates about how the ideological mechanics of postmodern culture may be related to evolutionary biology, cognitive virtualization processes, and immunity theory. My goal is to understand postmodernism from an ontological perspective, treating it as lived systemizations of power in which information technology, digital capitalism, globalization, and the posthuman industry function as primary modes of power through their virtual and immunizing features. This essay attempts to reconceptualize postmodern technology and knowledge by replacing such typical abstract theories as the "postmodern condition," "late capitalism," or the "hyperreal" with a study of the ontological mechanics contemporary culture.*

Keywords: Postmodernism, virtual reality, immunity theory, natural selection, globalization, digital capitalism, information technology and the posthuman (cyborg).

**I**NTRODUCING THE TOPIC of this paper has proved challenging because of its scope and relationship to our conference topic. A much-needed solution appeared with Christopher Scanlon's welcoming remarks printed in the International Conference on Technology, Knowledge, and Society handbook, Scanlon noting that for Heidegger

technology is a way of being in the world, an encompassing framework through which the meaning and significance of human being, actions and values is constituted and increasingly, reconstituted...modern technology is challenging; it provokes an aggressive orientation to the world such that everything is to be regarded in objectified terms (13).

These points—especially the more aggressive and objectified characteristics of technology—help introduce my concerns. At one level I want to offer a strategy for understanding the cultural mechanics of the postmodern era, an effort *ontological* in nature, especially given the role information and digital technology play in constituting the grammar and epistemology of our times. This effort is justified on two fronts: very little analysis of postmodernism recognizes our times in terms of an historically unique *systemization of power*—what I call *the politics of the virtual*—and, secondly, the majority of that analysis ignores the ontological ironically in favor of the abstract, presenting theories of the contemporary in terms of a "postmodern condition," "late capitalism," or "hyperreality," to reference the most popular.

Much of what this essay tries to sketch abstractly is a response to questions implied in

our conference title. For instance just how are technology, knowledge and society related, and can a postmodern theory be constructed on a basis of those relationships? Do they share certain connections or common sources? This paper is to be understood more as a sketch than a detailed academic argument. It answers the above questions by presenting a general theory of replication system dynamics, and then by exploring how it illuminates the relationship between the most dominant mechanisms of postmodern power, that is, information technology, capitalism, globalization and the posthuman industry. I shall suggest that the four are related by the human cognitive capacity to *virtualize*.

But why and how so? Because as both virtual and replicated systems, all four function as power immunity agents entirely in concert with the *bio-logic* of natural selection. Given this premise, I then want to explore how postmodernism represents the latest evolutionary version of that logic, with its dominant mode of power being able to create and store knowledge in totally virtual regimes—hence postmodernism as the first truly virtual culture—with information technology, digital capitalism, globalization and the posthuman functioning as virtual immunity subsystems producing and protecting postmodern power. The more virtualized postmodern values become the more immune they become to the instabilities of socio-economic and political forces, much in the same way that virtual cognitivism and the immune system support the aims of natural selection. To explore this connection is then to see how biology and human culture engage each other systemically.



A brief comment on my first premise. The most fundamental assumption guiding my theory of post-modern virtualizing is that human cultures do not just appear suddenly out of nowhere across the horizons of human time, popping up auto-generatively, nor do they necessarily have a unique origin point (i.e. Hebraic culture), nor are they really all that unique. Human cultures find their structures through long, evolutionary biological processes, the two arguably in some form of co-parallel relationship with cultures mapping and duplicating certain protective biological processes. In the book version of this paper, I spend considerable time exploring how the evolution of the *organic* body structures the culture-body politic, with the replication process taking material form in a number of cultural productions. For instance, the fact that the human body has evolved two of everything important—from the nervous system (bi-hemisphere brains; central-peripheral nerve mappings) to the endocrine or the reproductive system—parallels a similar behavior in social and cultural systems, whether we are talking about cosmologies and God cloning, Old or New Testaments, or the body politic, with most post-Enlightenment political and legal systems consisting of bi-cameral elements. Once we turn biology or sociobiology inside out, we can begin to assess anthropologically how cultures evolve and create systems assuring their own survival. I like to spend the remainder of this essay fleshing in some central premises.

### **The Virtual**

It is fairly easy these days to confuse virtualization with virtualizing, one a product that operates within the real, the other a process. I prefer not to treat the virtual simply in the customary terms of familiar spatial or technological virtualizations—as already something *represented* and made synonymous with certain technologies—but rather as an arguably universal and programmed human cognitive function, a mental activity. Humans virtualize whether it is an allegorical cave virtualization, paintings found in the *Trois Frères* cave-sanctuary, pre-historic cattle inventory engravings cut into bone baton calculators, the invention of mathematics, Athenian drama, the alphabet, Shakespeare's allegorical "Globe," a theory based on how mass and the speed of light produce energy, software codes, or Jaron Lanier's VPL multi-person, head mounted display of virtual worlds. Virtualizing is not simply the objects it produces—e.g. American Airlines flight simulators and it's not simply Gibson's cyber "there-there." No, at the level of evolutionary biology virtualizing reflects a patterned and highly programmed human behavior, arguably part of the way human consciousness knows, stabilizes, engages, and controls an often unpredictable world. The virtual is an allegorical

epistemology, a space of knowing independent of those undesired anomalies that threaten natural selection and its advancing genetic material.

Virtualizing has a biological history; its capacity a matter of evolutionary neurophysiology. It is an inheritance and a staging area, a mental theatre whose evolutionary trajectory can be traced back three million years to the primate brain of *Australopithecus*. We know that greater land triggered survival demands helped create the famous "reptilian brain" that provides clues to our neuro-ancestry. Around 5 million years ago new additions—the cerebrum and the cortex—provided a more advanced brain with hundreds of millions of nerve cells organized into different areas of the brain and given specific tasks. Still later advances in this new cortex marks the appearance of modern human beings. Even more specifically—as several palaeoneurologists have argued—the human brain then evolved a third frontal convolution which not only proves that the human brain was evolving as a steadily reorganizing entity, but that, as it did, it no longer simply stored data but began using that memory to craft technologies that helped hominids overcome survival limitations imposed upon them by nature. This evolving of an executive function temporalized data; it froze the world and its relational elements so associated abstractions could be constructed and tested. This executive capacity might also offer us an answer to my opening question of how knowledge, technology and society are related: *all there in coordination help insure that genetic protein strands wind their way into the future.* The three, along with the executive virtualizing capacity they engender, help create, record, and ritualize ancestors. Virtualizing may have developed with the brain of *Homo habilis*. Moreover, when the brain grew in size to 1200 grams or more, it was no longer simply a rudimentary hard disk storing instinct programming with little associative or reflective capability. It developed those complexities by integrating simultaneous perceptions with the evolution of both a refined central and peripheral nervous system. One might even conjecture that culture formation depends upon a highly sensitive peripheral nervous system that allows the brain to differentiate the space separating the body from the world and to sense the world. This separation is a first step in virtualizing, a recognition that a body and eventually a consciousness are simultaneously a being *in and not in* the world.

More speculation: with greater neuron production and subsequent neural connections, memory becomes even more integrated with analytic capacities, the two now occurring without delay. The greater the capacity to reason, the longer the duration for systematic or deductive rational thought. And the longer those durations, the more likely complex abstractions can be constructed and cognitively acted upon. And

with this profound power to abstract and to imagine comes the ability to mentally order and reorder nature—each segment taking place in a purely mentally configured space. The brain cognitively creates its own world and populates it with ideas and idea relationships generating new meanings, associations and technologies.

Most importantly, the evolving power to virtualize is the power to *abstract* and *immunize*. As already suggested, virtualizing mentally produces spaces free from the inconsistencies of material reality. To virtualize is to alter all the rules, to defy space and time and even mass and velocity. It is a space in which consciousness continually associates abstractions upon abstractions, modeling and remodeling reality. And without this virtualizing capacity there is no capitalism, no information technology, no globalization and no dreams of transcending the physical and degenerative with posthuman biotechnologies.

And to complicate matters a bit, I want to explore how the complex nature of human virtualizing can be illuminated by tracing its sources, that is, to natural selection and immunity theory. In essence, I want to raise Darwin's theory of natural selection to the level of a grander social theory combining anthropology and sociobiology, not that others haven't of course. My quest is to understand how human evolutionary biology might possibly drive the formation of knowledge systems we commonly abbreviate as *culture*. In essence, is the ideological—the stuff that makes up what we believe and value—ultimately biologically determined and constructed, apart from the vague notion of a meme?

To answer this question I would like to concentrate on hundreds of millions of years evolution of the mammalian immune system. The story is told of a Russian zoologist who, in 1882, noticed on the Sicilian coastline that a starfish larva was engaged in phagocytosis. His piercing of the larva with a rose thorn prompted the larva to engulf the invader with new cells that “were attempting to defend the larva by ingesting the invader.” This observation led the zoologist to the idea that phagocytosis was a “...fundamental mechanism by which creatures throughout the animal kingdom defended themselves against infection” (Beck and Habicht, 1). The zoologist, Metchnikoff, went on to realize that “the host defense systems of all modern animals have their roots in countless creatures that have populated the planet since life began” (2).

If biological evolution has any role in programming cultural processes, then to what extent has this ancient immunity programming been appropriated in cultural formational and regulatory behaviors? Here all I can say is that natural selection and immunity system evolution can conceivably explain how biological programming becomes cultural dir-

ectives. The implications of this idea produce some interesting questions: is culture biology incarnated; do biological processes translate themselves into information capacities that, in turn, shape how human cultures form and behave; and is this one way of understanding how information technology, capitalism, globalization, and the posthuman industry are related; and are these four postmodern virtualizations driven and ordered by biology processes that are always about the evolutionary business of immunizing vertebrates, protecting and performing replication activities with the goal of reducing threats to their primary natural selection obligations? And restated from above, does information technology, digital capitalism, globalization and posthuman virtualizations reflect and function as immunity agents to protect various modes of uniquely postmodern modes of power and dominance?

If natural selection is a process whereby “...certain genes gain representation” in subsequent generations “...superior to that of other genes located at the same chromosome positions” (Wilson, *Sociobiology*, 3), then can we assume that this directive functions in much broader ways than previously assumed and over far greater expanses of evolutionary primate time? Can it be seen operating in a trans-systemic manner, even to the point of producing a back-up system—the *immunity capacity*—that ultimately provides a supplemental means to insure that any vertebrate's DNA—its prime protein data—can make future DNA? Is it possible that mutations or variants of natural selection take virtual form consistent with the evolutionary logic of immunity? Or put in another way, is information technology, the history of capitalism, the advent of postmodern globalization and posthumanism replicated immunity systems, protecting both the biological and the cultural from any threat to anything deemed a DNA equivalent? How equivalents of DNA? Or do they? Do the three function to insure the survival of concentrations of power, the cultural

I ask you indulgence in helping me to put the proverbial pieces of this puzzle in place, my theorizing still very speculative at this stage. In fact, I will not pretend that this theory can be empirically proven because that is not the nature of theory anyway. Step one in any theory is a speculation about phenomenal relationships that have not yet been satisfactory seen or explained. Theories are always provisional; they are hypotheses and, therefore, can never be proven. At best great theories buy time; each instance of when new experiments are observed to agree with what the theory predicts simply means the theory lives to see another day.

Perhaps this undertaking best begins with a statement as to what I mean by replicational dynamics and how its theory relates to natural selection and

immunity. Here is my basic assumption: a good deal of biological systems, particularly those in the vertebrate subphylum and human cultural productions behave in highly repetitive patterns or adaptive dynamics. That is, they exist in terms of various replicational behaviors and forms. Organic life and modes of cultural production are similar in that each seeks out or reflects a doubling of themselves: duplication is the basis by which all life forms and cultural systems find or represent form, order, purpose, identity, value and meaning, with each of these understood as a behavior arising from a far more fundamental source or impulse. When do organic or cultural entities, given their programmed behavior, refuse to or intentionally fail to replicate themselves in one way or another. And, more interestingly, what creates or regulates this replicational dynamic, or, from another angle, what initiates and sustains natural selection?

Because of time limitations, I have decided to defer answering these larger questions, preferring instead to describe how information technology and contemporary capitalism might conceivably function as immunity systems guarding dominant institutionalizations of power in postmodern society.

First off, information technology is not simply a tool for trafficking information, goods, and capital. Information technology is not Microsoft® or Cisco®. There is more to it than hardware, networks, servers, software, uplinks, and complex data harvesting or mining engines. It is more than what it represents, what it makes visible and desirable. Its most important power lies in the abstract, a place that the majority of humans rarely need to go. Information technology is the first technology to literally become a language, a way of knowing the world. It functions both semantically and grammatically, creating signifying content as well as mapping network architectures and distribution gateways, both of which distinguish higher and lower levels of information importance. And while most of us go about the business of using sonic language to buy wine, to confide with our therapists, to close a bank account, or to share important life experiences, the language of information technology hovers overhead unspeakably, ubiquitously, immune from many material world anomalies that affect sonic language. What threatens the material does not directly threaten cyberspace.

No industrial technology ever reached the power that information technology enjoys as arguably a techno-epistemology. While pistons or mass assembly lines may never have organically changed how people thought—both being production methods—information technology, by contrast, tells us we live in a networked world where intelligent or useful information efficiency is highly valued. No smokestack or diesel engine ever told us we were connected; they never had a rhetoric. In fact they did

the opposite, explaining why, for instance, Marx and Engels saw industrial power as an alienating force. Work turned people into enemies. We, by contrast, know the postmodern world as something connected and collective. When the network becomes the computer then globalization can begin. We believe what we are told, that intelligence is collective; individual thought is now part of a distributed networked phenomena. So whether we believe in rain forest ecological networks or the capitalist economy as a natural or organic network, the ideological content of information technology tell us that we can now live in a world protected by the network. The network immunizes us from what Steven Shaviro describes as “the conflicting imperatives of aggressive predation”—what is implicit in a Hobbesian or Darwinian model of nature—and “.the unquestioning obedience and conformity” to the other, to capitalism as a protective and immunizing network (Shaviro, 2-3).

All one need do to understand the pervasiveness and immunizing features of information technology is to look back to the recent history of the Internet. I need not go into much detail other than to say that in 1959 Paul Baran and others at RAND created secure communications technologies immunizing military communications networks from nuclear attack. His results described two key ideas: the use of a decentralized network with multiple paths between any two points while dividing complete user messages into *message blocks* before they were launched into the network. Information technology virtualizes and enacts immunity behaviors both at conceptual and operational levels. At the simplest level, information technology does not simply place a screen between us and the material world; it replicates that world but injects an entirely different epistemology and metaphysics, and, in so doing, determines how we think. Lastly, information technology is even now becoming the means of creating the virtual human, the ultimately immunized posthuman cyborg, the machine whereby information even loses its body—the gesture one of utter disembodiment and absolute immunity. Paradise and the infinite may become a matter of metal and microcircuits.

What can be said of the immunity dynamics implicit in the logic of information technology also applies to the invention and evolution of capitalism. There is an historical correlation better the greater need for producing protected information and the evolution of capitalism. Hernando De Soto argues that “capital...creates the wealth of nations” because it is “the lifeblood of the capitalist system, the foundation of progress” (5). Capital is more than material wealth; it is part of a “representational process” whereby assets (equipment, property, and ideas) are “. . . represented in a property document that is the visible

sign of a vast hidden process that connects all these assets to the rest of the economy” (6-7). In essence, capitalism virtualizes value. The solving of the “mystery” of capital

requires an understanding of why Westerners, by representing assets with titles, are able to see and draw out capital from them. One of the greatest challenges to the human mind is to comprehend and to gain access to those things we know exist but cannot see. Not everything that is real and useful is tangible and visible. Time, for example, is real, but it can only be efficiently managed when it is represented by a clock or a calendar. Throughout history, human beings have invented representational systems...to grasp with the mind what human hands could never touch. In the same way, the great practitioners of capitalism...were able to reveal and extract capital where others saw only junk by devising new ways to represent the invisible potential that is locked up in the assets we accumulate (7).

That capital is part of a “representational system” enabling individuals to invent economies based on abstract value explains why it can immunize itself from any outside the system threat. Capitalism, like information technology and globalization is heavily metaphoric. And abstract ideas, by their nature, are metaphoric.

The point of this presentation has been to flesh in very broadly the major logic of a theory of virtual postmodern culture and its relationship to replication-dynamics, focused here on the relationship

between natural selection and immunity and how the two have a functional presence in how postmodern capitalism, globalization, the posthuman and information technologies are related in ways we normally do not see. My real focus has been to offer a glance at a much larger project that will deconstruct the power girders structuring postmodern culture, an epoch whose unique technologies, notions of value and territorialism construct amazing immunities from forces that challenge those primary ambitions and values.

To understand postmodern culture we need to know why and how technology becomes ideological knowledge and why our society is so informationally and capitally driven. And to do that, we need to ask some very fundamental questions about the nature of culture and human biology. Postmodern culture, like all historical cultures, doesn't arise from inside a vacuum; its ideological dynamics have clear sources. I hope I have suggested some new ways of looking at how contemporary relationships between technology, knowledge and society produce those sources and how given Heidegger's interest the “aggressive orientation” and “objectified” status of dominant postmodern technologies reveal their relationship to the bio-logic of evolutionary processes and virtualization. Is not the objectivity of traditional science and technology a kind of virtual space, a protective representational environment in which momentary non-ontological truths are produced, valued, and then directed outward to the real? A history of virtualization *as a mechanism of powers that order and stabilizes genetic replication* needs to be written.

## References

- Beck, G and Habicht, G. “Immunity and the Invertebrates.” *Scientific American*, 1996, V.275.  
 De Soto, H. (2000) *Mystery of Capitalism: Why Capitalism Triumphs in the West and Fails Everywhere Else*, The. Basic Books, New York.  
 Shaviro, S. (2003). *Connected or what it means to live in the network society*, Minneapolis: University of Minnesota Press.  
 Wilson, E. (1980) *Sociobiology: The Abridged Edition*. Boston: Harvard University Press.

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