

*The Neural Interface*¹

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It does not often happen that one encounters a set of texts and artworks that propose a different and wholly original paradigm for thinking through cultural history and the philosophy of the human subject. But that is exactly the challenge and the pleasure offered by the essays and images by Warren Neidich that are collected here: a *sui generis* landscape in which even familiar monuments from the history of art, architecture, philosophy, and aesthetics appear strange and disorienting, because the angle of approach that is taken toward them is so unexpected. This is still a work in progress, with many questions yet to be answered and areas calling for further investigation—but the overall conceptual architecture here is already complete in its general outline; and it taps into speeds of connection and association vivid and compelling enough to push thinking in quite new directions.

The appearance of familiarity can turn out to be deceptive. In certain respects, Neidich revisits territory familiar from phenomenology, with its opening move of suspicion concerning the givenness and independence of the reality that appears outside the self. As in the phenomenological reduction, there is an inaugurating suspension of certainty—we cannot *begin* thinking we know the nature and limits of “self” and “world,” since the meaning of these terms is precisely the matter that is to be investigated. And as in phenomenology, the emergence of the world within human consciousness is the result of a cooperation between self and world in which both self and world co-inhabit and mutually constitute each other, through a perpetual crossing-over or chiasmus where the world “out there” is in fact built by consciousness “in here,” but by an embodied consciousness, a mind that is also a part of material reality, part of the world itself.

Yet in its classic forms, phenomenology always had recourse to a level of primary security in the way it conceived of the body that experientially inhabits the world. The basic, common sense orientations of the object world remain intact—the centralized subject of experience inhabiting its own lived horizon, equipped with sensations that build up a habitat of recognizable objects and circumstances, whose solidity and substantiality are real and dependable. Neidich’s allegiance to cognitive neuroscience undoes this elemental security of the body and of things, since the picture of being that it

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begins with is so radically fragmented and de-realized. What appear to the senses as “apple,” “table,” or “hand” are, in this perspective, so mirage-like and apparitional that even the most primitive ontological securities are undermined.

Central to what Neidich takes from neuroscience is the distinction between the primary repertoire—the enormous and variable nervous system with which human beings are endowed at birth—and the secondary repertoire, the pathways of connection that are built up through interaction between the brain and the outside world. Certain complexes of neurons are coded to respond to stimuli for color, others for shape, for weight, for texture, for movement, with each complex occupying its own region of the brain. When neurons are stimulated at the same time by converging inputs, a configuration is formed that, if repeated often enough, will stabilize as “apple,” “table,” or “hand.” The effect of there being an entity or object is not, then, the result of a real thing imprinting itself on the senses, like a seal imprinting itself on wax. Rather, the thingness of the thing is a matter of *timing*, of networks that are “tethered (or synchronized) through temporal “signatures” that bind all these disparate inputs (such as color, shape, weight, texture, movement, and so forth) “in an experienced seamless whole.” Perhaps the key word here is “seamless”: the apple appears seamless, yet the reduction carried out by neuroscience—which in this respect seems far more radical, counterintuitive, and disquieting than the classic phenomenological reduction—unravels that seamlessness, unbinding the security of a prior object world into the groundlessness of neurons firing in sequence. The solidity of things vaporizes into flashes of synaptic energy leaping from axon to neuron. The level at which the real is understood to operate is no longer that of the object but the neuron, and at this molecular, morcelized level no *things* as such appear, only fragmentary attributes, surges of brain activity within which no things as yet exist, merely quanta of electrochemical energy discharging along columns and limbs of cortical tissue.

Cognitive neuroscience is hardly the first discipline to have questioned the security of ontological categories. Indeed, the demonstration of a fundamental groundlessness of being has been a hallmark of modern Western philosophy, a permeating vertigo that runs through the writings of Heidegger, Sartre, Wittgenstein, Derrida, and Lacan. To that extent, Neidich’s anti-realism does not in itself constitute an unfamiliar position. What is striking, however, is that the appeal to neuroscience closes off access to the key term by means of which these different visions of groundlessness have tended, historically, to restabilize themselves: namely, the signifier. The effort of the “linguistic turn” in philosophy lies in transforming questions asked of Being into questions asked of language. In the later philosophy of Wittgenstein, for example, “the limits of my

language are the limits of my world.” Which is to say that the language with which consciousness thinks does not picture or represent the world directly; rather, language itself is the primary reality, and attempts to establish the existence of a world outside the linguistic are invalid or meaningless. What holds the world together, then, is the coherence of the rules by which language operates, the “language games” that particular communities bring into being in their construction of a shared, coherent reality. Similarly in Derrida, nothing stands outside the signifier in the position of signified: a word does not derive its meaning from outside the system of language, for instance from an intention or thought that language reflects or reiterates, or from a referent—a thing in the world—that language names. Rather, meaning is the effect of movement from one signifier to the next, in a circulation that is “groundless” in that it rests (as in Wittgenstein) on nothing outside the circuit of language itself. And again in Lacan, the Symbolic order is a system that does not rest on a prior reality but rather marks a fundamental break from reality, in which the signifier is hollowed out by the absence of the thing it names: the Symbolic order exists in opposition to the Real, and can never adequately represent or embody a Real that is understood to lie outside all symbolic conventions.

Each of these accounts of being and representation is in its own way as anti-realist as the account that Neidich takes from neuroscience: that is, all are committed to a radical, counter-intuitive and disquieting understanding of consciousness as being never in direct communication, in terms of mental contents, with the reality that surrounds it. Yet, as our new century advances, it becomes increasingly evident that despite this shared thematic of groundlessness that runs throughout linguistic philosophy—the insistence that what we take to be reality is only a construction, without foundation in an absolute—what resecures the subject’s place in the world is the primacy of the signifier, and the shared semiotic conventions that anchor the subject in the world, giving the world its solidity, coherence, and substantiality. The radicalism of neuroscience consists in its bracketing out the signifier as the force that binds the world together: what makes the apple is not the signifier “apple” (though this, too, may play an important role in the process of reality-building), but rather the simultaneous firing of axons and neurons within cellular and organic life. The level of the ground of being, or of the real, shifts from the signifier to the neural configuration, the orchestration of myriad plays of lightning across the ramifying branches of the brain.

From this shift to a cortical or neural model of subjectivity follow a number of consequences that can be taken as distinct advantages which the “neural turn” possesses over the broad family of accounts of the real that are based on the primacy of the signifier. The first is the resolution of a classic difficulty faced by poststructuralist

thought in relation to the breadth of experience that it is able to describe; for by concentrating on the signifier as the basic unit of description, the analysis commits itself to an intensely *cognitive* point of view. Feeling, emotion, intuition, sensation—the creatural life of the body and of embodied experience—tend to fall away, their place taken by an essentially *clerical* outlook that centers on the written text. The signifier rules over a set of terms whose functions are primarily textual in scope: the analysis of ordinary language (Wittgenstein); of the circulation of meaning within the literary text (deconstructive criticism); of the disruptions of the symbolic order that indicate the advent of unconscious fear and desire in the analysand’s speech or in the discourse of the work of art (psychoanalysis). While the family of terms that owe their allegiance to the signifier—*text, discourse, code, meaning*—is brilliantly adept at dealing with questions of signification, it encounters a notable limit when the area that it seeks to understand exceeds the sphere of textual meaning. Though semiotics is often at pains to point out that the signifier belongs to the sensory order, it is difficult to modulate the term so as to include the full range of sensuous and emotional experience, the affective, the physical, and the kinesthetic. Yet, as Neidich’s essays indicate, the pathways of association and combination that constitute the “secondary repertoire” are immensely variable in their range of operation: their configurations pass not only through the discursive arena in which semiotics specializes, but sensory memory, affective resonance, and habits of touch and movement that belong to the motor and kinesthetic regions of the body’s experience of the world.

Consider, for example, the kind of analysis of material culture that George Kubler postulated in his classic work, *The Shape of Time* (Yale University Press, 1962). The ways in which an artifact evolves within material culture certainly concern the world of symbolic meaning, and yet the form that is assumed by cultural artifacts is arrived at through a host of other factors. Such typical objects as tools and vessels are shaped by the availability of particular materials within a region, by cost, by ease of manufacture, by the practical function they are to perform, by the artisanal traditions that are passed on from generation to generation, by the habits of the hand and eye—the whole nexus of bodily predispositions—that are called upon when the maker sets out to fashion the object, and by the user to use it. The shape of such familiar and unassuming objects as tables, chairs, plates, bowls, jugs, and knives evolves slowly: within each culture, one form gradually assumes priority because it balances the multitude of factors that shape it over centuries—it performs the task well, it feels “right” for the job. While each artifact may *carry* a meaning or meanings that belong to the order of cultural symbols, the artifact cannot be *derived* from these alone. It comes into being through the interaction of a welter of factors that lie beyond the symbolic register. The familiar objects that

surround us in daily life are known to us not only as meanings but through sensuous and kinesthetic handling, the suite of bodily actions that is brought into play whenever we make use of them. Their constellation maps together a vast array of neural “signatures” from the myriad registers of experience within which the object appears, only some of which concern the cognitive work of the signifier.

The cultural space that Neidich’s writings portray is much more rooted in the subject’s sensory, kinesthetic, emotional, and gestural experience than in the essentially textual space described in poststructuralist thought, where the key issues are representation, code, and meaning. The brain’s cortical operations involve constant revision and remapping, the “pruning” and elimination of pathways that fall out of use, and the strengthening of those pathways which by a process of natural selection come to dominate and grow in speed and efficiency. The subject here is essentially a creature of habit and habitat, of sensory-motor repetitions. The *time* of cultural production is accordingly defined not as the *instant* when the signifier releases its singular meaning, but rather the long, longitudinal history of practical and habitual activity that lies behind and within it.

Crucial to Neidich’s narrative is that, in modernity, the technologies that have evolved in the sphere of visual communication have come to operate on the subject with particular vehemence, not only in the realm of meaning but in their determining influence on the primary habits and dispositions of experience. Since the nineteenth century, Western visual technology has developed by modeling itself with closer and closer accuracy, Neidich argues, on the patterns of association and combination with which the subject constructs its surrounding world: photography, cinema, television, the internet—each of these technologies is driven by an ergonomic agenda that aims to maximize efficiency and eliminate waste (the same ergonomic drive that is present, according to neuroscience, in the development of the brain itself). Technology intervenes within the primary reality of experience—which is no longer, of course, the reality of the signifier but the configurations of the neural body. As the forces of spectacle gain ever wider currency in a rapidly globalizing world, those cultural forms that emerge as dominant, in the competition for structuring the pathways of consciousness, will annex and colonize more and more of the subject’s interior life, worldwide. As Neidich puts it, “the culturally diversified message is now democratized to incorporate strategies that can hail the multiplicity of global subjectivities....[in] a kind of neo-colonialism in which territories and natural resources are now substituted by the regions of the brain and brainpower.”

In some ways this is a familiar narrative—the warp drive into hyper-reality, into a cyborg space of accelerating and predatory mega-icons or “phatic signifiers” whose ability to capture and mesmerize the cultural subject seems to be pruning away the vestiges of an earlier, less heated era before virtuality supplanted the real. To readers of Paul Virilio, Fredric Jameson, Guy Debord or William Gibson’s *Neuromancer*, this is meat and drink—yet it is important to notice the distinctive cast of Neidich’s thought when his writings deal with visual technology and cyberspace. His is certainly a story of a fall from grace. The idea that the order of simulation is beginning to usurp the place of the real and “to walk all by itself” is signaled several times over in the essays gathered here. In the first era of cinema, when the image was still tethered to the sensory-motor habits of the pre-modern, film followed the same logic of linear and causal sequencing that prevailed in the world of habitual practicality. But at a certain point (Neidich, like Deleuze, dates it to the emergence of the post-1945 European avant-garde) the cinematic image breaks free of the body, launching into new constellations of image-space and image-time that are no longer constructed around—or held back by—the traditional rhythms of bodily experience. Similarly in architecture, in the course of the twentieth century the new image technologies of cinema and television gradually invade the stable order of the built environment, absorbing buildings into the generalized image-stream and image-flow and turning the architectural surface into a skin or screen subject to the montage of the virtual image. Or, in a different register of Neidich’s writing, consider the case of the phantom limb, in which the classical, sculptural image of the body (Leonardo, Michelangelo) gives way to the image of the “homunculus,” a labile, mutable body whose organs and limbs drastically differ from the image received from the past, a body where the currents of desire—especially in the case of Pierre Molinier—rewire and reorder the body’s surfaces into new combinations and bizarre juxtapositions (the hand as a subset of the face, a foot whose sensations are adjacent to the anus, and so forth).

All of these narrative moments turn on a loss of the natural body, a body harmonious within the integrity of its classical outline, and its mutation into a cyborg state, part flesh and part machine. As in the movie *The Matrix* (Warner Brothers, 1999), the subject is bound to a manipulated cyber-spectacle whose powers of persuasion no longer operate (as in modernity) at the level of ideology or belief, but at the far more primal and insidious level of neural and cortical life, as communal hallucination. It might even seem that *The Matrix* portrays, in the idiom of cinema, the same essential world-picture as Neidich’s writings and artwork, where the terrain on which culture now operates is the landscape of the brain itself, at the level of its synaptic firing.

And yet the comparison with *The Matrix* would, I think, be misleading. *The Matrix* centers on the power of the virtual to transfix and immobilize the subject of culture—and the capacity of truth (Keanu Reeves) to break the hallucinatory spell. It is a Sleeping Beauty story, of waking out of narcotic slumber into the “true” picture of things, the horrific hive of incubation and delusion within which post-humanity slumbers. But Neidich’s narrative is structured around the exactly opposite hypothesis, the *non-availability* of this consoling moment of disillusion in which the real finally conquers the virtual. For in the fundamental description of the brain’s activity that Neidich draws from neuroscience, the distinction between the real and the virtual cannot be drawn at the level of ontology. The apple, the table, and the hand are at the same time real (we see and feel them) *and* virtual (assembled from synchronized signatures or fragments). *The Matrix* maintains a much less sophisticated, almost fundamentalist distinction between the real (good) and the virtual (bad): fans of the movie will know that scenes set in the Matrix are tinged slightly green, while scenes in the real world are tinged blue. The entire effort of *The Matrix* lies in sustaining a real/virtual dichotomy that neuroscience brackets out. Despite superficial similarities, *The Matrix*—like the apocalyptic visions of takeover by simulation in writers like Virilio and Baudrillard—depends on a Manichean separation between the natural and the simulated that Neidich, and neuroscience, render archaic in their opening moves.

If in Neidich the subject of postmodern culture is conflicted, this is not because of estrangement from nature but rather is the result of existing *between* technological regimes. In Antonioni’s *Blow Up*, the protagonist is torn between the picture of reality that comes from ordinary sensory-motor experience and the competing version of reality that is established by photography. What is emphasized in Neidich’s commentary on the film is the unevenness of cultural development, the clash between residual and emergent, rather than the triumph of one consistent visual-technological regime (such as the Matrix). Neidich’s portrayal of history is non-teleological, in the same way that Darwin is non-teleological: what drives the evolution of subjectivity is conflict between competing systems, in a field of force that is full of reversals, switchbacks, unexpected mutations, and strange singularities. Though the coercive forces in culture may possess extraordinary means to colonize and manipulate the neural interior of the subject, they also face the extraordinary resistance that comes from the subject’s sheer variability, its rapid adaptation and ability to mobilize alternative and resistant patterns of reality-building.

This is where the arts, in Neidich's view, are able to perform essential cultural work. Neidich's understanding of cinema, for example, attributes to the avant-garde powers of resistance, reinvention, and cultural mobilization that are rarely found in discussions of visual aesthetics. In the traditional accounts of the avant-garde that were forged during the era of modernism, avant-garde art tends to be portrayed as significant yet marginal, operating in a separate aesthetic domain away from the central motivating forces of society located in the spheres of economics, politics, and technology. But if the central arena of cultural development is the "neural interface," those art forms that are able to directly access the inner activity of the brain have the potential to create new configurations of image, space, and time, to forge new pathways within the mind/world nexus, that can challenge dominant forms of cultural expression on their own ground. Avant-garde cinema is no longer at the periphery of culture, offering a merely different set of visual conventions or styles: it is able to rewire perception itself, and to offer cultural subjects patterns of experience that block and oppose the standardized repetitions of the "phatic signifiers" that seek to impose their regime on consciousness. There emerges a new and powerful conception of art as a force for radical social and cultural change, since the territory on which it operates is no longer at the edge of the social field but at the very center of cultural activity, within the "sculpted brain" itself.

For the brain with which humanity is endowed is so superabundant in its primary repertoire, so amorphous and changeable, that no single regime can be adequate to govern or standardize such complexity. In the older, archaic picture of the coercion of the cultural subject (Marx, Freud, technological determinism) it was assumed that the subject could be mapped, interpellated, and manipulated—that the subject of ideology could be made uniform and acquiescent. Neidich presents a different conception of freedom, in which the subject of culture has the ability to remap itself, rewire itself, and assume forms so creative and protean that it will always outrun the forces that seek to limit its plasticity. In a sense, the image of the body that is sketched here is invulnerable and indestructible—even trauma and amputation cannot irreversibly damage the neural body, since its basic plasticity allows it to regroup and reorganize its pathways of association and combination into new, unforeseen morphologies. Though the "homunculus" may lack the harmony and grace of the classical image of man, its capacities for shape-shifting and self-transformation give it a new range of powers.