

William E. Connolly

Experience & experiment

Social scientists and interpretive theorists of culture have struggled with the ‘mind-body problem’ since the inception of the human sciences. To emulate the natural sciences as they understand them, many social scientists pursue a predictive science (‘in principle’) that curtails attention to the creative dimension of culture. Cultural theorists, on the other hand, sometimes minimize the role of biology in human life in order to preserve a space for creativity in thought, emotion, and culture. Even culturalists who study bodily *representations* seldom examine the body as a site of biocultural dispositions and relay point for political mobilization. The anxiety is that to do so would be to play up the importance of genetic determination. In fact, cultural reductionism – that is, the minimization of how biology and culture are always mixed together in hu-

man life – threatens to generate the result its practitioners fear. It depreciates the layered character of the body/brain/culture network and thus ignores some aspects of that network implicated in cultural creativity.

The contemporary revolution in neuroscience offers the possibility of opening a new dialogue between advocates of a science of society and those of cultural interpretation. The most promising route, in my judgment, is to forge links between neuroscience – the observational and experimental study of body-brain processes – and phenomenology, understood as the explication of implicit structures of experience that infuse perception, desire, and culture. But what philosophy of mind and body can inform such inquiries without lapsing into either cultural or biological reductionism?

The approach that inspires me is a descendant of Baruch Spinoza’s doctrine of parallelism.¹ His philosophy has gone through several modifications by those indebted to him. I will present some of them, trying to make my own position plausible as I proceed.

William E. Connolly is Krieger-Eisenhower Professor at Johns Hopkins University. He has published numerous books on political theory, including “Political Theory and Modernity” (1988), “Why I Am Not A Secularist” (1999), “Neuro-politics: Thinking, Culture, and Speed” (2002), and, most recently, “Pluralism” (2005).

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1 See Baruch Spinoza, *Ethics* (with the *Treatise on the Emendation of the Intellect* and *Selected Letters*), trans. Samuel Shirley (Indianapolis: Hackett Publishing Co., 1992).

Spinoza projects a world of one substance without embracing mind-body reductionism. He asserts that each change of the body is matched by a parallel change of mind (and vice versa), even though neither body nor mind can be understood through the concepts appropriate to the other. There is, rather, one substance with two attributes: extension and ideas. A few formulations in Spinoza suggest that while God possesses the concepts to subsume ideas and extension under one rubric, human beings are capable of knowing that substance is univocal but incapable of understanding bodies and ideas through the same concepts.

In Spinoza's system, efficient causality gives way to immanent causality. The model of efficient causality, in which B is fully separate from A and follows from A in a predictable (in principle) pattern of succession, morphs into one in which new patterns of regularity come into being as 'expressions' of heretofore unrealized possibilities implicit in substance. His system – where for every change in thinking there is a corollary change in bodily state (and vice versa) – thus inspires several recent philosophies – best known through the work of Michel Foucault, Stuart Hampshire, and Gilles Deleuze. They emphasize the importance of techniques, “arts of the self,” and “micropolitics” applied to bodies to alter established patterns of thought, judgment, and feeling. Spinoza thus sets the stage for modern encounters between experiment and experience.

Spinoza's theory faces several questions and challenges, however. One is the place of responsibility and freedom in the system. I will bracket that issue here.² Another is what it *means* to say

2 I address that question in “Spinoza and Us,” *Political Theory* 29 (4) (August 2001): 583–595.

that mind and body are parallel. If the process of thinking is incommensurate with the movement of body-brain processes, how could you know that the two attributes run on parallel tracks? Some theorists indebted to Spinoza bypass this issue. Others respond by modifying his claim.

The former response is found in the philosophy of “anomalous monism,” a position advanced by Donald Davidson and taken by some to provide a useful updating of Spinoza. The latter response is what I will call “immanent naturalism,” a position that emerges from the conjunction of the English philosopher Stuart Hampshire and the French philosopher Gilles Deleuze, two recently deceased thinkers inspired by Spinoza.

Davidson is a monist in one sense. He says that though body and mind belong to one world, the explanation of bodily processes and the interpretation of thought processes differ because they are governed by different aims, roughly to foster prediction in the first case and to clarify meaning and responsibility in the second. The difference in aim enables the two systems to be part of one world while differing in their mode of account. But Davidson's model of physical explanation is too narrow to speak to Spinoza, and it is also not closely attuned to developments in physics, neuroscience, and biology that call into question the sufficiency of the law-like model of explanation.

Davidson says that “if two events are related as cause and effect, there is a strict law under which they may be subsumed Thus laws must belong to a closed system: whatever can affect the system must be included within it.”³ He

3 Donald Davidson, “Donald Davidson,” in Samuel Guttenplan, ed., *A Companion to the Philosophy of Mind* (Oxford: Blackwell, 1994), 231.

might have considered the possibility of moving closer to the idea of immanent causality, coming to terms with systems in which resonances and feedback loops roll back and forth between multiple nodes, in which some elements blend into others, and in which a degree of creativity and unpredictability emerges periodically from these patterns.⁴ This, at any rate, would move his thinking closer to that of the scientists and philosophers to be engaged here.

Another concern is that while Davidson distinguishes between interpretation (applied to “mental events”) and explanation (applied to “physical systems”), and while he is alert to how reflexive understanding by an agent of the causes of its own bodily state can introduce new considerations into future thought and action, he does not consider how techniques applied to the body can alter thought and feeling. Anomalous monism does not experiment with tactics of the body that then find *expression* in thought, feeling, and desire.

Stuart Hampshire surmounts these limitations in Davidson’s version of monism. He articulates five themes, all recognizably connected to the Spinozist philosophy they modify.

4 See in biology, for example, Lynn Margulis and Dorion Sagan, *What is Life?* (Berkeley: University of California Press, 1995), and Brian Goodwin, *How the Leopard Changed Its Spots: The Evolution of Complexity* (Princeton, N.J.: Princeton University Press, 1994); in paleontology, Stephen Gould, *The Structure of Evolutionary Theory* (Cambridge, Mass.: Harvard University Press, 2002); in neuroscience, Walter J. Freeman, “Consciousness, Intentionality and Causality,” in Freeman and Rafael Núñez, eds., *Reclaiming Cognition* (Bowling Green, Ky.: Imprint Academic Press, 1999); and in chemistry, the thinker who inspired several of the above studies, Ilya Prigogine, *The End of Certainty*, trans. Odile Jacob (New York: The Free Press, 1996).

First, Hampshire contends that while substance is one, we humans have two irreducible perspectives on it, what he sometimes calls the first-person and the third-person perspectives. Second, he says that a change in either body or thought is always correlated with *some* change in the other, even though we cannot specify the exact shape and extent of that change except through live experiments. So he drops the theme of a strict parallel while retaining that of an intrinsic connection. Third, he emphasizes how new findings in neuroscience can, once reviewed by the human objects of inquiry, be folded into their own thinking, informing future capacities of thought and action. Fourth, he asserts that coming to terms with such external knowledge can also prompt the invention of *techniques* and *technologies* to act upon the body/brain network, so as to alter, in turn, future patterns of thought, feeling, and action. (An example of the latter, unavailable when Hampshire wrote, is neurotherapy. Here the subject observes a screen that signals several of his own brain states. The subject then tries to move the signals this way or that according to the instructions of a therapist. If the body/brain patterns are altered in the specified direction over several sessions, a pattern of depression might be lifted or a new mood cultivated.)⁵ Fifth, Hampshire presents his (neo-)Spinozism as a defensible yet contestable philosophy: neither it nor mind-body dualism has been demonstrated to date, though an accumulation of evidence and argument may gradually increase its plausibility.

5 For one account see Alondra Oubre, “EEG Neurofeedback for Treating Psychiatric Disorders,” *Psychiatric Times*, February 2002, at <http://www.neurofeedback-institute.com/cgi-bin/articles.pl>.

Here is a formulation, from an essay written before the explosion of new work in neuroscience, in which Hampshire indicates how the plausibility of this philosophy may become enhanced:

The confirmation, if it comes, will not be like the confirmation of an empirical hypothesis. Rather the confirmation would be that some notions closely resembling Spinoza's key notions become widely accepted as peculiarly appropriate in studying and evaluating human behavior. New psychological knowledge might fit better into this framework than into any other. Certainly anyone who altogether rejects Spinoza's naturalistic standpoint, and anyone who has some religious and transcendental grounds for doing so, would remain unpersuaded, and given his premises, justifiably so. But those of us who have no such transcendental grounds may at least pause and consider the possibility that our habitual moralizing about the ends of action is altogether mistaken. Certainly we should not deceive ourselves by dismissing Spinoza as the kind of determinist who allows no possibility of deliberative self-improvement, as if this were the dividing line between him and traditional moralists. It is not.⁶

Gilles Deleuze, the author of two books on Spinoza, augments Hampshire's contribution.⁷ More than Hampshire, Deleuze anticipates modifications

6 Stuart Hampshire, "Spinoza and the Idea of Freedom," in *Freedom of Mind and Other Essays* (Princeton, N.J.: Princeton University Press, 1971), 203–204. The five themes are presented in that essay and its companion piece, "A Kind of Materialism," *ibid.*, 210–231.

7 Gilles Deleuze, *Expressionism in Philosophy: Spinoza*, trans. M. Joughin (New York: Zone Books, 1990); and Gilles Deleuze, *Spinoza: Practical Philosophy*, trans. Robert Hurley (San Francisco: City Lights Books, 1970).

in the concept of causality – modifications that neuroscience and allied disciplines are currently exploring. He elaborates a philosophy of immanent naturalism. It is *naturalistic* in refusing to embrace dualism or supernatural forces. It is *immanent* in identifying protean forces – forces that can disturb the "actuality" of relatively stable things, beings, processes, systems, etc. These forces, when activated under the right conditions, periodically introduce, say, a new species, weather system, or human brain/body pattern into the universe. Deleuze thus radicalizes Spinoza's idea of immanent causality and breaks more sharply than Hampshire does with the law-like regularity Davidson attributes to physical systems. Deleuze and his collaborator, Felix Guattari, first, challenge faith in a transcendence (often associated with mind/body dualism) "lodged in the mind of a god, or in the unconscious of life, of the soul, or of language . . . , always inferred." Second, they affirm historically "shifting relations of movement and rest, speed and slowness between unformed elements, or at least between elements that are relatively unformed, molecules and particles of all kinds."⁸

Such a philosophy of energetic "movement and rest" does not reduce the world to chaos. It suggests, rather, that each system – when examined in the timescale appropriate to it – oscillates between periods of relative arrest and heightened imbalance and change, followed in turn by new stabilizations, some of which may assume a composition never fully manifest before. The Nobel Prize-winning chemist Ilya Prigogine summed up a similar thesis more

8 Gilles Deleuze and Felix Guattari, *A Thousand Plateaus*, trans. Brian Massumi (Minneapolis: University of Minnesota Press, 1987), 266.

briefly, “Our universe is far from equilibrium, nonlinear and full of irreversible processes.”⁹

The conjunction of Hampshire and Deleuze suggests the value of translating Hampshire’s idea of parallelism and Deleuze’s idea of immanent causality into that of emergent causality. According to such a conception, neuroscientists can deploy advanced technologies to observe and alter body/brain processes. Such technologies may well become much more sophisticated and refined in the future. But to date, and perhaps forever, we cannot observe how this complex pattern of entries and multiple feedback loops *blends* layers of past experience into current encounters, carrying both into future action.¹⁰ Observation

9 Ilya Prigogine, *Is Future Given?* (River Edge, N.J.: World Scientific Publishing Company, 2003), 65. Here, and in *The End of Certainty*, Prigogine criticizes the concepts of law and causality in classical science, including some recent interpretations of science. Prigogine and Deleuze are connected by at least two streams: the debt each owes to the work of Henri Bergson on time as alteration, and the debt of Prigogine’s collaborator, Isabelle Stengers, to the work of Deleuze. For the latter, see Isabelle Stengers, *Power and Invention: Situating Science*, trans. Paul Bains (Minneapolis: University of Minnesota Press, 1997).

10 In his posthumously published book, *Spinoza and Spinozism* (Oxford: Clarendon Press, 2005), Hampshire seems to take another step toward the position I am attributing to Deleuze. The book consists of his classic 1951 book on Spinoza, the essay on freedom listed above, and a previously unpublished essay, “Spinoza and Spinozism.” In the latter, Hampshire expresses a debt to Antonio Damasio, whose book *Looking for Spinoza* (New York: Harcourt, 2003) is the first close engagement by a neuroscientist with the work of Spinoza. I explore this stimulating study in “The Radical Enlightenment: Faith, Power, Theory,” *Theory & Event* 7 (3) (2004).

can thus isolate *body/brain processes* of entry and reentry, but it takes embodied, mobile beings to absorb and catalyze a body/brain/cultural network into specific patterns of thinking, feeling, and judgment. To replicate thinking, a new technology would have to *participate* in these emergent patterns. It would have to become a feeling and thinking agent.

To those who define the physical world as a closed system, terms such as ‘blend,’ ‘absorb,’ ‘catalyze,’ and ‘emergence’ will seem evasive. But they dramatize a key difference between neo-Spinozists in philosophy and neuroscience, on the one hand, and classical models of science, on the other. For, as we saw earlier, neo-Spinozists play up the role of volatile forces in *both* nonhuman and human worlds. And they reduce the distance between human culture and nature further by locating a capacity of ‘self-organization’ to varying degrees in several zones of nonhuman nature as well as in human life. Put another way, neo-Spinozists discern an element of real creativity in both nature and culture, inviting exploration of selective affinities between them in a universe in which the future is open to an uncertain degree.

Neo-Spinozists are thus encouraged to examine multiple ways in which culture becomes sedimented into different layers of the body/brain network, to incorporate that knowledge into future thought and action, and to experiment with techniques of body/brain intervention that might find expression in altered patterns of thought, feeling, and judgment. The term ‘expression’ here means a process of infusion irreducible to efficient causality, partly because of the multiple entries and reentries between different sectors of the body/brain network and partly because of novel capacities of self-organization

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periodically activated as these processes are underway. When the neuroscientist V. S. Ramachandran speaks of “reverberations” rolling back and forth between sectors of the body/brain network, he points to the first phenomenon.¹¹ When the chemist Ilya Prigogine identifies a capacity for self-organization in relatively simple physical systems, he suggests that this human endowment is shared, though unevenly, with other systems in the world.¹²

Mind and body are intrinsically connected, though the experimental knowledge and experiential capacities of human beings are not fully commensurable. It is through creative movement back and forth among experience, reflection upon it, experimental observation, reflexive awareness of such experiments, and the cautious application of specific techniques to individuals and groups that the most promising and dangerous possibilities emerge. We here note a couple of examples.

Consider lucid dreaming, the process by which people participate in their own dreams, steering them this way or

11 V. S. Ramachandran, *Phantoms in the Brain: Probing the Mysteries of the Human Mind* (New York: William Morrow, 1968). He says, “Brain connections are extremely labile and dynamic. Perceptions emerge as a result of reverberations of signals between different levels of the sensory hierarchy, indeed even across different senses.” *Ibid.*, 56. A similar approach appears in Gerald Edelman and Giulio Tonino, *A Universe of Consciousness* (New York: Basic Books, 2000). They theorize patterns of entry and re-entry in the body/brain network, finding consciousness to be the cumulative result of them.

12 I discuss this dimension of Prigogine’s thought in chapter 3 of *Neuropolitics: Thinking, Culture, Speed* (Minneapolis: University of Minnesota Press, 2002). Chapter 4 of that book lists numerous ‘techniques of the self’ that can be applied to body/brain processes.

that. How can nonlucid dreamers verify whether such dreams occur in others? What are the effects of lucid dreaming, if and when it occurs? Are there ways to amplify lucidity?

One study, drawing upon high-tech observations and the subtle experience of Buddhist monks, gleaned insight into these questions. It turns out that a skilled dreamer can signal to an observer, by blinking, that he has entered the state of lucidity. EEG measurements, combined with muscle and skin monitors, then make it possible to correlate that signal with the blinker’s specific body/brain states. In this experiment, REM movement indicated that dreaming was taking place when the blinking signal was given; and the muscle and skin tone of the dreamers indicated that the dreaming was of a particularly intense type.

The interaction between monks and neuroscientists in this experiment has already generated a new technology to prompt and record such experiences,

a compact device to help people develop lucid dreaming and remember their dreams better . . . ; a mask worn on the face while sleeping, with a small signaling light so the machine can communicate with the sleeper. The mask is attached to a small computer. Sensors distinguish when the user is in REM sleep, and the computer gives them a gentle signal. The user can then make a conscious effort to be aware of the dream and remember it.¹³

Why study lucid dreaming? And why invent a technology to prompt it? The dreamers, its practitioners claim, tap a latent reserve of compassion in them-

13 Francisco J. Varela, ed., *Sleeping, Dreaming and Dying: An Exploration of Consciousness with the Dalai Lama* (Boston: Wisdom Publications, 1997), 106–107.

selves, a reserve that then finds expression in future conduct.¹⁴ This effect is also pertinent to the quality of ethical life as understood by both Spinozists and neo-Spinozists. For, as the earlier quotation from Hampshire suggested, we deny that goodness takes the form of obedience to a universal law, as claimed in the dualist traditions of Augustine and Kant. We also contend that command-and-obedience models of morality too often contain within them a drive to revenge against the human condition, finding expression in punitive and accusatory orientations toward the diversity of life. Goodness, to Spinozists and neo-Spinozists, grows out of cultivation of positive attachment to this world in conjunction with reflection into the complexity of specific situations. So, in suggesting techniques through which to amplify care for the future of this world, the engagement between monks and neuroscientists in the study of lucid dreaming speaks to Spinozists.

The second example comes from the lab of Antonio Damasio, a neuroscientist whose work has been influenced by Spinoza. A female patient he names S is highly intelligent, and she is excellent at learning new facts. The hippocampus, the brain nodule that launches the subsystem to lay down new memories, is thus in fine shape. But her positive atti-

tude toward life is never ruffled by past experiences of danger, betrayal, or abuse. Tests to gauge her ability to distinguish between dangerous and benign situations verified this disposition: “It was as if negative emotions such as fear and anger had been removed from her affective vocabulary, allowing the positive emotions to dominate her life.” Scanning tests then revealed that “both amygdalae . . . were almost entirely calcified.”¹⁵ The amygdala is a little brain nodule that both generates rapid, affective responses of fear on its own and sends signals to more refined brain zones for slower, more complex processing. Using a multidimensional scaling technique, Damasio’s colleague showed that “S cannot consistently tell the expression of fear in another person’s face . . . , she has no problem with the recognition of other facial expressions.”¹⁶

S’s case suggests how well-developed the neuroscientist’s ability is to establish correlations between observed body/brain states and the quality of lived experience, even though the observer cannot report actual experience without help from the client. It also reveals how much of perception and judgment is prior to consciousness. In another study, for instance, skin-conductance tests of the subjects revealed the ability to distinguish between favorable and unfavorable situations before a conscious judgment registered.¹⁷ Those of us with fluent relays between the amygdala, skin, and other brain regions thus make preliminary affect-imbued discriminations

14 The instruments are limited in what they detect. “If you look at a person’s EEG, you cannot tell if he or she is full of compassion or completely oblivious.” *Ibid.*, 104. This book provides a model of how the interplay between experience and experiment can work. As a researcher says, “In statistical analyses, we found that there is more body movement in lucid dreams, and more sound. Body balance seems to be very important. All this leads us to ask whether there are psychological, cognitive predispositions to lucid dreaming. It turns out that there are, notably in the realm of spatial skills such as body balance.” *Ibid.*, 105.

15 Antonio Damasio, *The Feeling of What Happens: Body and Emotion in the Making of Consciousness* (New York: Harcourt Brace, 1999), 65, 62.

16 *Ibid.*, 65.

17 *Ibid.*, 301–302.

before a *feeling* of fear or annoyance floods over us.

Mothers, Spinozists, Freudians, Buddhist monks, Christian preachers, phenomenologists, novelists, filmmakers, advertisers, and charismatic leaders have intervened in nonconscious processing for centuries. But today more systematic knowledge of body/brain processes attracts corporate advertisers and political consultants as well. Robert Heath, a highly successful advertiser working in England, draws upon recent work in neuroscience to improve the effectiveness of TV ads. The most successful ads, he says, are “low involvement ads,” in which the higher reflective capacities of the viewers are either placed on hold or diverted to a side issue, allowing nonconscious processing to take over. The advantage of nonconscious processing is that “it is on all the time”; it is also automatic and inexhaustible in its capacity and more durable in retentive power.¹⁸ Such ads can trigger intensive charges of thought-imbued affect that flow into a consumer’s perception and judgment even before they become explicit.

Political leaders, talk show hosts, and product advertisers seek to mobilize such nonconscious patterns of resonance across large constituencies and to encourage the results to flow into consciousness. Some of those patterns demean particular groups and instill consumption demands ill suited to the health of consumers or the collective future.¹⁹ A major contemporary challenge is to devise ways to expose and

respond to such technologies of collective mobilization.

What insights can neo-Spinozism offer? It is important, certainly, to publicize how such strategies work, drawing upon studies in neuroscience, advertising, political campaigns, and phenomenology to do so. But it is also critical to *devise countertechniques of cultural-corporeal infusion*, tactics that work upon individuals and constituencies at the visceral level as they also engage the higher intellectual registers. This is dangerous territory. But it is also unavoidable territory in a media-rich world, in which there is never a vacuum in the micropolitics of corporeal-cultural infusion.

How can you participate in such strategies without becoming an envoy of cultural manipulation? I support a three-tiered strategy: you expose the tactics of those who do not themselves call attention to them; you introduce counterstrategies of cultural-corporeal infusion attached to a more generous vision of public life; and you publicize, as you proceed, how these counterstrategies themselves impinge upon the affectively rich, nonconscious layers of life.

The way in which Stephen Colbert and Jon Stewart mimic and exaggerate the orchestration of image, voice, music, sound, and rhythm by media stars such as Bill O’Reilly provides one starting point. They do not simply expose factual misstatements – an inadequate response to influences exerted in part upon affective states situated below the refined intellect. Instead, they fight fire with fire, reenacting media strategies of inculcation by parodying them. Clearly, however, much more thought and experiment is needed in order to both expose and respond to the media tactics that attempt to code the visceral register of affect-imbued judgment.

18 Robert Heath, *The Hidden Power of Advertising* (Henley-on-Thames: Admap Publications, 2001), 67.

19 I examine a contemporary instance in “The Evangelical-Capitalist Resonance Machine,” *Political Theory* 33 (6) (December 2005): 869–886.

Neither the arguments nor examples provided here prove the truth of neo-Spinozism. I join Hampshire in doubting that such a definitive proof is apt to emerge, either for the neo-Spinozist vision, or for its dualist and reductionist competitors. Nonetheless, as new experiments in neuroscience are linked to reflection on cultural experience, the plausibility of neo-Spinozism may be enhanced.

Two avenues seem particularly promising to pursue. The first is to place neuroscience and phenomenology into closer communication. In his late work, *Nature*, Maurice Merleau-Ponty moved close to neo-Spinozism. If and as we absorb his experiential accounts of the interinvolvement of the senses, the essential role of the body's implicit self-image in perception, the intersubjective dimension of experience, and the layering of bodily dispositions, our awareness of the imbrications between body/brain observation and lived experience may become more supple.²⁰

The second avenue of inquiry is related to the first. We should experiment cautiously with bodily techniques that then find expression in thought and feeling. This is particularly pertinent to intellectuals who embrace a neo-Spinozist image of ethics. Such strategies might include visualization, priming dreams by reviewing a perplexing issue before going to sleep, lucid dreaming, meditation, and neurotherapy. As we move back and forth among experiential awareness, media studies, knowledge of body/brain processes, and sub-

tle technologies of body/brain intervention, we may also gain more insight into how to confront and counteract the politics of cultural revenge that exerts so much power in the media and elsewhere today.

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20 See Maurice Merleau-Ponty, *Nature: Course Notes from the College de France*, trans. Robert Vallier (Evanston, Ill.: Northwestern University Press, 2003). His classic *Phenomenology of Perception*, trans. Colin Smith (New York: Routledge, 1989), should be read in conjunction with that text.