

Biology, Politics, Creativity

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I share the view that biocultural connections should become more central to political inquiry. And I appreciate some of the themes Hibbing develops. The approach considered in this response is one in which variable degrees of agency are pushed deeply into simple organisms, into processes of embryological unfolding, and into subliminal elements of cultural relations. Such an approach appreciates the creative element in evolution as well as in subliminal processes in play within and between us. Several practitioners of complexity theory in biology have been exploring such routes. They may contribute to a more layered set of interfaces between biology and cultural interpretation that are even less reductionist in character. And they may carry import for explorations of how the media work on the visceral register of intersubjectivity, still to be developed.

Some students of politics bracket biology from politics via a Kantian route; others by assuming some version of parallelism according to which the movement of bodies and ideas coincides but neither is reducible to the other; yet others adopt a teleological image in which human purposes are said to be irreducible to the causal antecedents appropriate to other forces or beings. John Hibbing challenges these pursuits. He contends that cultural and political explanations demand engagement with biology. I profit from his account of how biology today transcends one version of reductionism, from his replacement of genetic determinism with the complexity of multi-gene expression in ways that interact with the environment, from his adjustments in dichotomous thinking, from his conversion of laws into tendencies, from his call to curtail the hubris of the human estate, and from his specific discussion of the interplay between feelings of disgust and expressions of political judgment. I also envy his participation in a biocultural lab. In what follows, I seek to respect the above points while trying to carry the critique of reductionism forward another step, drawing upon minority reports within biology to do so.

If you pass beyond the genocentric model of biology you may open the door to a more radical break with reductionism than that entertained by Hibbing, identifying differential degrees of real uncertainty and creativity within

biological evolution, within body/brain/culture processes, and within bio-cultural processes of change.

When engaged in practical politics many, perhaps most, students of politics act as if politics periodically generates creative innovations. Some of these same scholars, however, then elide this acknowledgement when they turn to professional, explanatory work, on the grounds that the goal of political science is to explain and that the quest for explanation is defeated from the start if you acknowledge an element of creativity in political events. There may be apparent creativity, they say, but that is due to an epistemic screen that obstructs us from perceiving some relevant explanatory factors. Other scholars, however, pursue the initial intuition, *doing so to retain the integrity of politics*. We think that something new periodically comes into being in a way that requires that we augment the conceptual armory of political science. Not only political theorists pursue this idea, but a growing cohort of political and social scientists do so, too.¹

Thus, perhaps vague frustrations and volatile energies were in the air the day before Mohamed Bouazzizi immolated himself in Tunisia. Too intense to be unimportant, too vague, cloudy and replete with pluripotentiality to be defined sharply. Did that sad event help to trigger a creative mode of cultural self-organization that exceeded the power of its initial trigger? The faith that our inability to predict such an event is due to an epistemic screen has never been demonstrated. Perhaps the rebellion in fact arose through a surprising *condensation* of vague, intense, collective energies. Perhaps it emerged from creative reverberations back and forth *between* a series of singular acts and collective predispositions that were initially cloudy in potential. Perhaps it became consolidated out of such cloudiness through reciprocal *teleo-searching* processes that both exceeded the triggering moment and *contracted* initial, vague intensities into something that did not pre-exist the event.² Perhaps. If you

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contend, with several American pragmatists, that the world is periodically punctuated by bouts of real creativity, you become alert to just how much faith has been poured, first, into the idea of *the implicit* in some circles of interpretive theory and, second, in *full determination* in principle among many political scientists. These two views, interpretivist and empiricist, may contend with each other. But from the vantage point explored here they also complement each other, working together to dampen or eliminate appreciation of the creative element in politics.

Okay. But what has that got to do with the role of neuroscience and biology in culture and politics? Well, perhaps a lot. A growing group of complexity scientists in the domains of neuroscience and evolutionary biology contend that there are variable degrees of real creativity in organic processes inside and outside the human estate. Indeed, they think that our experiences of creativity in the arts, music, sports, ethics, and politics would be difficult to sustain if traces and whispers of those processes did not also find expression deep within nonhuman organisms. Stuart Kauffman, Terence Deacon, Brian Goodwin, Dorion Sagan, and Lynn Margulis all head in this direction; several have been helped to this view through exemplary interchanges with the thought of “classic” nature/culture philosophers such as William James and Alfred North Whitehead.³ Several acknowledge an element of speculation in their current thinking, but they then contend that the dominant perspectives also contain elements still pitched at a speculative level.

These scholars willingly face the charge of “anthropomorphism” eagerly pressed against them by the advocates of both biological and cultural modes of reductionism—in which the first group reduces culture to biology and the second bypasses the biological element altogether. They do so to engage more deeply the evolutionary process, nonhuman organisms, and human/nonhuman imbrications. While concurring, say, that only humans think deeply about mortality, they also insist that differential degrees of agency, purpose, and meaning find some expression deep in the biosphere. They seek to forestall the deeper danger of *anthropocentrism* which, as I argue in a forthcoming book, increases the fragility of the human estate today.⁴

In *Reinventing the Sacred: A New View of Science, Reason, and Religion*, Kauffman argues against the reduction of organisms to more simple elements; he opposes the sufficiency of *both* mechanistic and finalist modes of explanation; and he projects the play of purpose and exploratory action deep into the biosphere. A bacterium, on his reading, exhibits simple characteristics of agency and purpose, characteristics that those sunk in the conceits of anthropocentrism ignore at their peril. Here is one quotation: “Teleological language becomes appropriate at some point in the tree of life. Let us stretch and say that it is appropriate to apply it to the bacterium. We may do so without attributing consciousness to the bacterium. My

purpose in attributing actions (or perhaps better proto-actions) to a bacterium is to try to trace the origin of action, value, and meaning as close as I can to the origin of life.”⁵

Kauffman is not pretending that bacteria are profoundly reflexive or think deeply about mortality. Nor does he replace either efficient or probabilistic cause with teleological *finalism*—the most familiar alternative projected when the limits of reductionism and mechanism are probed. He discerns, rather, variable *degrees* of agency and exploratory power in numerous nonhuman organisms in a way that opens the possibility of different degrees of creativity at key junctures in species evolution and in the multiple intersections between human culture and nonhuman processes. There are “preadaptations” in every species which both engender limits to the next stage of evolution and provide platforms from which unpredictable changes may occur. So, creative evolution is conditioned by prior entities and intersections. But it is not entirely determined by non-agentic causes.

Kauffman pays attention to processes of *self-organization* within and between organisms during key junctures of “criticality.” These processes sometimes allow creativity to emerge, not as the result of prior intentions but as the outcome of exploratory processes within or between organisms set into motion by a new perturbation. His approach can contribute to the study of bird/human flu jumps, to exploration of how contending teleo-drives within a person are sometimes resolved below conscious attention when facing a new situation, to the creative element in human perception, and to collective processes of self-organization. To study biology and culture together, for Kauffman, is to probe how we live into the mystery of a future that is neither preordained nor entirely reducible to antecedent causes. To him, the element of creativity in that event in Tunisia would be supported by biology, not denied by it, even though its complexity involves degrees of thought, reflexivity, and contagion that greatly exceed the powers of nonhuman organisms and cultures. His exploration of the human body/brain system as (possibly) a quantum process fluctuating between moments of coherence and those of decoherence is designed to help us come to terms with bio-cultural supports for the element of creativity in thinking and action. Sure, he could pay more attention (as Hibbing does) to how cultural activity infiltrates body/brain processes, and his overly enthusiastic rendering of economic expansionism misses the mark. But *we* should also pay more attention to how body/brain preconditions enable cultural enfoldings and creative explorations to occur.

The neuroscientist and biologist Terence Deacon, in *Incomplete Nature*, adds a wrinkle to such a bio-cultural perspective. In his engagement with species evolution, he explores differential degrees of self-organizational capacity as a species goes through a phase transition. He distinguishes the relatively simple modes of self-organization in

thermodynamic systems studied by Ilya Prigogine from both morphodynamic modes and teleodynamic processes. A teleodynamic searching process, as I understand it, arises when an embryo or mature organism has delicate balances within it disrupted. As he says, “organisms are spontaneously emergent systems that can be said to act on their own behalf (although acting and selfhood must be understood in a minimal and generic sense. . .).” What’s more, “organisms are both components and products of the evolutionary dynamic.”⁶

When a genetic mutation occurs—generated by sexual exchange or other means—much of it is received as noise and disturbance by the embryo. But, he contends, a simple self-searching process may then arise as the embryo unfolds, sometimes enabling it to respond to aspects of the mutation as a new “signal.” What was noise is now transduced, to some degree, into a signal, suggesting how flat the simple idea of “information” transfer is to capture emergent formations in complex networks. This means that organic evolution would involve the following: mutation, teleosearches that translate the noise of mutation into signs, further self-organization of these signs into features of the organism, and natural selection, broadly defined, of some of the new formations. Deacon distinguishes between teleosearches that contribute to evolution and his corollary assumption of the absence of an overall *telos* within the long evolutionary process itself. That is why, I think, he talks about “incomplete nature.” Some of these themes can be detected in the following:

So, although the evolutionary process can further the pragmatic convergence between interpreted content and extrinsic reference, information is not in any sense available to evolution, only to the organisms that are its products. Evolution generates the capacity to interpret something as information. This capacity is intrinsic to a self-perpetuating, far from equilibrium system, which depends on its environment and does work to modify that environment in a way that reinforces its persistence.⁷

The experimental research and speculative projections briefly reviewed here may run into trouble as work proceeds. On the other hand, they may become increasingly plausible, partly because this research neither brackets culture from biology, nor reduces culture to biology, nor demands *consummate* explanation of political processes, nor demeans the contributions cultural philosophy and theory can make to concepts and themes needed in biology and neuroscience. The concept of “teleodynamism,” for instance, seems to arrive out of just such a conjunction. Indeed, this line of research encourages formation of multiple interfaces between biology and cultural theory without effacing the element of creativity in culture. It encourages us to foment interfaces between neuroscience and phenomenological explorations of experience; it encourages, too, rethinking the relations between the layering of memory and the formation of perceptions in politics as we come to terms with bifurcation points in the

past that could have taken other directions. And it incites us to explore more closely just how cultural norms become encoded into our bodies below reflective attention. Doing the latter, it meshes with some tendencies in both the work of Hibbing and Michel Foucault. Finally, it incites us, as students of society, to develop techniques to provoke our own creative thinking at key junctures: by priming our dream life around a vexing problem before we go to sleep to see what new idea, strategy, or concept may bubble up in the morning; or through periodic meditation; or by engaging periodically in neurotherapy; or by listening to voices outside our normal comfort zones to see how tacit modes of judgment are jostled. Such modes of interchange already find preliminary expression in selective relations between some practitioners of neuroscience and phenomenology particularly as practitioners from each field combine to deepen our grasp of lucid dreaming.⁸ To put the point briefly, this kind of research both challenges tendencies to cultural internalism that plague the humanities and human sciences and transfigures those ideals of reductive explanation that continue to haunt biology and social science.

I am not sure how much Hibbing and I diverge, though we may be committed to somewhat different models of inquiry. We both, nonetheless, seek to expand interfaces between neurobiology and the study of cultural life. I am also not certain how far the wagers embraced here will carry us. They do provide one direction to explore as long as their promise continues to shine brightly.

Notes

- 1 See, for instance, Joas 1996; Sheingate 2003; Berk, Galvan, and Hattam forthcoming.
- 2 To pursue this question more closely would be to explore both the ways in which open ended rules, as they encounter new circumstances, gradually accumulate changes which are not entirely reducible to their antecedents and how explosive events sometimes trigger more radical modes of self-organization that exceed the trigger. Both kinds of situation need attention.
- 3 Kauffman 2008; Deacon 2012; Goodwin 1994; Margulis and Sagan 1993; James 1909; and Whitehead 1978. The exploration of mirror neurons is pertinent to this discussion, particularly to the exploration of how some cultural tendencies are installed below linguistic internalization and how the multimodal media in contemporary politics work on the visceral register of intersubjectivity. But there is not enough space to discuss those issues here. For a preliminary discussion see Connolly 2006.
- 4 Connolly 2013.
- 5 Kaufman 2008, 78.
- 6 Deacon 2012, 273.

7 Deacon 2012, 416.
8 Varela 1997.

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