Neurobiology and Politics: A Response to Commentators

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Let me begin by thanking editor Jeff Isaac for inspiring and bringing to fruition this exchange. Securing the participation of nine academics and then cajoling us to meet deadlines and follow instructions is a remarkable accomplishment and I can only hope the finished product approaches his hopes for the enterprise. I would also like to thank the eight scholars who provided commentaries on my target essay. I am truly fortunate that such an all-star cast was willing to spend time pondering the role of neurobiology and politics. They assisted me in better understanding my own positions, and who can ask for more than that? I do not have the space here to offer the point-by-point response that their comments deserve, so I will instead concentrate on the two concerns that were raised most frequently: first, whether biological approaches can answer the kinds of questions political scientists should be asking, and second, whether, regardless of their value in answering questions, applying biological techniques to social behaviors leads to normatively unpalatable conclusions. Before addressing these two important matters, however, it is worth a moment to mention several areas of agreement.

Areas of (Mostly) Agreement

I could not agree more with Anne Jacobson's urging that neuroimaging work be done carefully—though shouldn't all research be done with care? She is correct that subjective judgments are involved when using techniques such as fMRI and that the pictures resulting from the procedure can be accorded too much credence by laypeople, particularly juries. I also agree with her that interdisciplinary teams are advisable in undertaking such research and am happy to say that this is exactly the route our lab has chosen.

I agree with George Marcus that humans are likely programmed to deny the role of biology in their behavior, that getting them to accept the role of biology will therefore be challenging, and that many of the misconceptions noted in my target essay spring from the fact that humans' sense of self often relies on the "ennobling vision of the disembodied mind." I am sure he would also agree with me that none of this means scholars should not pursue the truth. As a sidelight, I disagree with his perception of the status of biology in the various social science disciplines. He points out that political scientists became interested in biology quite early and he is doubtful that the other social science disciplines have surged ahead since. He is half right. The biopolitics movement did indeed start long ago (the late 1960s) but it proceeded to fizzle. In recent decades, the Society for Neuroeconomics, the Society for Social Neuroscience, and the Human Behavior and Evolution Society all blossomed, often growing exponentially, in their respective fields of economics, psychology, and anthropology (Troy Duster makes a similar observation in his essay). During that same time, "Politics and the Life Sciences" lost its designation as an official section of the American Political Science Association when membership fell below the 250-member minimum and in 1998, two stalwart proponents of incorporating biology into political science surveyed the landscape and concluded gloomily that, in terms of intellectual impact on the discipline, "biopolitics must be viewed as basically unsuccessful."[2] The situation has improved of late but it is telling that as of 2013 not a single neuroimaging article has ever appeared in a top-three political science journal.

As several of the commentators, particularly William Connolly, sense, I even agree with those who entertain the possibility that there is something more to the human condition than can be grasped by analyzing ever smaller sub-parts. Connolly, invoking the language of complexity theory, calls it self-organization and creativity; Duster calls it emergence, and Jacobson merely notes it might not be possible to "get whole objects out of the products of our glimpses of a scene." Several commentators expressed special concern with the possibility raised in my target essay that "who we are is contained in a couple of pounds of carbon-based neurons, support cells, and organs resting on top of our necks." I stand by that statement but perhaps a coda is in order. What a

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wondrous couple of pounds it is! The interconnectedness and computing power made possible by 100 trillion synapses (the estimated number in the human brain) is staggering. Whatever terminology is employed, I agree with the commentators that scientists would be foolish to deny the possibility that the whole of our brain is more than the sum of its many parts.

Here is where I might part company with some of the commentators, however. Entertaining the possibility that the human condition contains emergent qualities does not make it true and, without a thorough understanding of the parts, it is impossible to know whether these emergent qualities exist and, if so, what they are. If we don't roll up our sleeves and do the scientific work, all we are left with is well-intentioned speculation that often comes off as more wishful thinking than hard-headed search for truth. If that makes me a reductionist, it is a label I wear proudly.

In addition to reductionism, several commentators accuse me of scientism which apparently means believing in the scientific process. By my reading, disgruntlement with applications of the scientific process anywhere, including standard behavioral political science, constitutes the most surprising feature of the commentaries. The specter of applying biological techniques to political behavior places the matter in starker relief, but readers should note that the real issue for several of the commentators is the appropriateness of formulating manageable and falsifiable hypotheses and then testing them in ways that are objective and transparent enough to permit replication and extension, the sort of thing that has quite rightly dominated the social sciences for more than half a century. Several of the commentators, particularly Marcus, gently lecture me that individual researchers have biases. This is certainly true and is exactly why the scientific process is needed. Science is a group enterprise. The ability of independent researchers to verify or reject initial findings neutralizes the biases of any individual researcher or lab in a way that conjuring "-isms" and casually tossing unsubstantiatable assertions back and forth cannot.

Connolly shows the advantages that accrue to searching for common ground instead of resorting to name calling. He notes the possibilities inherent in attempting to identify "differential degrees of real uncertainty and creativity." I agree completely. Biology does not determine human behavior but it does touch and shape it. Changeable but inertial biologically-instantiated predispositions or defaults affect the probability that an individual will behave in a certain fashion when faced with a certain situation.[3] The essence of the human condition resides somewhere between free will and determinism. People's choices are biologically encumbered and mainstream social science has failed to absorb this reality.

What Questions Should Political Scientists Ask and How Can They Be Answered?

Kay Lehman Schlozman questions the political relevance of biological research, using as an example the studies showing that individuals with greater disgust sensitivity are more likely to hold conservative political beliefs.[4] She asserts that while this is the kind of finding that might be of interest to political junkies or perhaps to psychologists who can't be expected to understand politics, it is hardly worthy of the time of serious, card-carrying, professional political scientists. What questions should we be asking then? Here the commentators diverge. Ange-Marie Hancock says the questions need to be about power. Duster wants to know why the Republican Party became ascendant in the American South over the course of the last 50 years and also wants to know the consequences of Franklin Roosevelt winning 61 percent of the vote in 1936. Larry Arnhart wants to know why Abraham Lincoln chose the words he did for the Emancipation Proclamation. For her part, Schlozman wants to know how wars can be prevented, democracies developed, and economic growth achieved.

This amazing diversity of questions and topics leads me to conclude that biology might not be appropriate for every one of them, a position Arnhart calls "timid" and Duster characterizes as laced with "tension." Still, for those political scientists and historians seeking to explain a particular historical event, I simply do not see biology helping much. Though Arnhart does a nice job of placing all events in a comprehensive framework with biology at its core, he never says anything about the precise manner in which neurobiological techniques can be used to generate and test hypotheses concerning specific cultural events and even admits toward the end of his essay that non-biological factors must be incorporated.

Neurobiology is best equipped to tackle questions of individual variation. Why are some white southerners liberal but most are conservative? Why did some warm to the Civil Rights movement almost immediately while others have taken much longer? Why are some people open to new social arrangements but others suspicious of them? Why do some people become involved in the political process but others keep it at arm's length? What are the biological and deep psychological correlates of the remarkable individual-level variations we see in all political arenas? I admit to being somewhat miffed at the notion that the discipline of political science should not be interested in the reasons people hold the political beliefs they do. Most people do not become conservative because they watch *Fox News* or become liberal because they like *The Daily Show*; they gravitate toward media outlets that match their pre-existing core dispositions. As such, it would seem advisable for those scholars wanting to understand media viewing patterns, political communication, elected officials,

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political conflict, ideologies, and the roots of polarization to pay careful attention to the sources and nature of these core dispositions.

I see the intersection of biology and political science occurring at the level of bedrock dilemmas, such as in-group/out-group relations and treatment of norm violators, rather than issues-of-the-day, such as words in a particular speech or roll call votes on a tax code. This focus on bedrock dilemmas of politics bothered several commentators. For example, Hancock suspects that invoking biology to explain bedrock features runs the risk of "diverting attention from historically specific structures of power, thus reproducing these very structures." This is exactly backwards. It is when historically specific structures of power are studied sui generis and with no understanding of their biological context that the chances of reproducing them are enhanced. Coming to meaningful terms with individual issues-of-the-day requires an understanding of the bedrock principles at play; otherwise, the issues are left decontextualized.

Linda Zerilli worries that a focus on biological subthreshold processes reduces politics merely to "one [of many forms] that such processes can take" thereby "destroying the subject matter of political science." I have never found "protect the guild" arguments particularly persuasive. Political behavior is one of a range of social behaviors and the boundaries demarcating the individual social science disciplines that address various parts of this range are arbitrary and counterproductive. There may be good reasons to refrain from integrating biology and politics but the need to save the discipline of political science is not one of them.

Duster points out that people are everywhere and always "social and historical beings" and Hancock states that humans are not simply biological beings but biological beings embedded in "historico-political contexts." I agree but would add that every single thing people do and think is biological. We take in aspects of the historico-political context biologically; we process that contextual input biologically; and we take actions and think thoughts as a result of that context biologically. There is no other way it could be. The environment is crucial but means nothing to social scientists until it gets passed through the biological prism that is a human being.

Biology may not tell us why Barack Obama defeated Mitt Romney in 2012 but it does tell us why some people voted and some people did not and it does help us to understand why some people champion candidates associated with tradition and stability while others prefer candidates of innovation and progress. Biology may not tell us everything we need to know about power but it does, as Doug Madsen demonstrated decades ago, illuminate why some people seek it more ardently than others.[5] Accounting for variations in political beliefs and involvement is one of the most important goals of our discipline and biology is already helping to achieve it. Power, war, and democracy are the products of decisions people make and these decisions are inherently biological. As such, biology is deeply relevant to the great questions of our discipline and in fact trying to answer these questions without biology is a fool's errand. Asking big questions takes no particular talent—in fact, children are remarkably good at it. Recognizing big questions and knowing how to answer them should be the focus of our efforts and graduate training.

Is Incorporating Biology Dangerous?

Most of the commentators seem to accept the overwhelming evidence that biology affects human behavior—as pointed out in my target essay, one only has to look at the effects of drugs to see the behavioral consequences of biology (why else would the phrase be "under the influence"?)—but several of them want this evidence to go away because they are convinced grave dangers await. Zerilli writes that such evidence would "evacuate the very capacity for freedom." Hancock says it would have "serious policy implications for those with less power." Jacobson fears it would result in "reconditioned bigotry." And Schlozman points out that "biological arguments have been adduced to describe group differences and to justify treatment that has ranged from barbarous to discriminatory."

Biology has been used as a justification for evil and intolerance, with Hitler being the classic example, but the environment has, too. In one random sample of US adults, two-thirds of those believing that being gay is the result of environmental causes asserted that homosexuality was *not* an acceptable lifestyle while three-fourths of those believing that being gay has a biological basis believed it was an acceptable lifestyle. The same pattern can be seen with mental illness. Decades ago, when mental disorders were believed to be environmental, patients and parents were stigmatized unnecessarily but tolerance and understanding significantly increased with the recognition that biology plays a central role in behavior. Finally, Mao's stubborn belief that moving people from fetid cities to noble pastures would change their behavior resulted in the deaths of millions and illustrates that flawed understanding of the limits of social engineering can be just as dangerous as flawed understanding of the limits of biology. Being hoodwinked by environmental forces, which can include misleading frames, propaganda, and powerful sub-threshold input, hardly equates to desirable behavior. None of the commentators explained how believing that biology is relevant to sexual orientation and mental health leads to more tolerance but believing it relevant to other forms of behavior leads to less tolerance. Any knowledge, not just biological knowledge, can be used for ill. This fact is no reason to stop the pursuit of knowledge.

In my target article, however, I made the stronger argument that by recognizing individual biological

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variations, the traditional focus on group-based variations (along with the intolerance that accompanies such a focus) would be minimized as would any stigma attached to being abnormal (since in effect there would be no "normal"). Schlozman, for one, was not convinced, and I understand the resistance. Still, I stand by the claim and await evidence that contradicts it. People are quite tolerant of individual-level biological differences. By continuing to pretend that no such differences exist, despite mountains of evidence to the contrary, the scholarly community is doing harm. Critics' Pavlovian invocation of Hitler whenever biology is mentioned could not be more misplaced, since he denied precisely what the new research is showing: behaviorally relevant biological differences occur at the individual, more than the group, level. Incorporating biology, with its focus on individual, sometimes unwilled, and often unwitting influences, into the study of social behavior will reduce intolerance and discrimination.

Several commentators wring their hands at the prospect that, as Zerilli puts it, human actions and judgments are "the mere effects of already primed dispositions." I would only say that pretending people are different than they really are is not the solution to these fears. At times, the commentators seem to entertain the peculiar belief that if nobody studied the influence of biology on behavior then that influence would vanish. Don't blame students of biology and politics for flaws in the human condition. We did not construct human beings; we only study them. Even if human foibles were ignored, they would still exist. In fact, acknowledging these foibles is likely to lead to better public policies and better political systems, as Zerilli recognizes when she states that "we need to think about the stakes for democratic politics in the idea that much of perception and judgment takes place prior to consciousness." She goes on to say "we need to refigure the place of the body in political life." I could not agree more. Pretending humans are something they are not is foolish for anybody but particularly problematic for social scientists. The human condition is what it is. We can either seek to understand it, warts and all, or live in a strange, head-in-the-sand denial.

Conclusion

Since their inception, the social sciences, including political science, have been based on the assumptions that humans are self-aware, biologically identical (when it comes to behavior), and rational. These three assumptions made it possible to elucidate the human condition with survey self-reports, hypotheses driven by expectations that all people will respond similarly to given environmental conditions, and models based on assumptions of maximizing behavior. Even in the few instances in which scholars raised questions about these assumptions—such as Herbert Simon's work on bounded rationality[6] and Daniel Kahneman and Amos Tversky's studies of preference asymmetries[7]—rationality is considered the baseline and departures from it as mere limitations or anomalies.[8] Now, however, it is becoming increasingly apparent that these three species-flattering and research-friendly views of humanity are fundamentally incorrect and that the traditional social sciences must adapt, as select subdisciplines already have. People are not aware of the reasons they do what they do or believe what they believe;[9] they have remarkably diverse behaviorally-relevant biological predispositions; and they do not make rational choices but rather, on the basis of the aforementioned predispositions, make biased choices and then rationalize them to others and to themselves. If incorporating these realities amounts to a paradigm shift, so be it, but failing to incorporate them leaves our discipline dangerously similar to the drunk who looks for his keys only underneath the streetlight.

Notes

1 This project was supported by the National Science Foundation (BCS-0826828).
2 Somit and Peterson 1998, 569.
3 Hibbing, Smith, and Alford 2013.
4 Inbar, Pizarro, and Bloom 2009; Smith et al. 2011; Dodd et al. 2012.
5 Madsen 1985.
6 Simon 1957; see also Jones 1999.
7 Kahneman and Tversky 1979.
8 Thaler 1992.
9 Here again, I am in agreement with Anne Jacobson when she notes that laypeople and scholars alike are largely unaware of humans' "highly partial intake of information."

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