

Not for Distribution

1 2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

26

27

28

29

30

31

32

33

34

35

36

37

38

39

40

41

42

43

44

45

NEUROSCIENCE AS APPLIED HERMENEUTICS

Towards a critical neuroscience of political theory

Jan Slaby, Philipp Haueis, and Suparna Choudhury

In the current academic climate, there is no shortage of discourses proclaiming a veritable neurorevolution: that new insights into the functioning of the human brain will lead not only to novel possibilities of technoscientific intervention, but also to a radical transformation of our sense of what it is to be human in general.¹ More striking still is the enthusiastic appropriation of this new neuroscientific wisdom by formerly somewhat anti-scientific disciplines, from art history and theology to literary studies (Vidal 2009; Ortega 2009). Political theory would seem no exception; here too one begins to wonder whether in this moment of neuroscientific progress one should not “go neurobiological”: the lure of a shiny new neuro-prefixed discipline to accompany those already out there – neuro-economics, neuro-education, neuro-law, neuro-aesthetics, neuro-literary criticism, and so on. Will political theory become neuropolitics?

Only time will tell, of course. An assessment of the value of jumping on the neuroscientific bandwagon, and a judgment about whether it is indeed time to trade in established principles and disciplinary discourses for this new neuroscientific wisdom require a closer reading of neuroscience itself, its current status as a scientific discipline, its social standing and its situatedness. In the following chapter, we are less concerned with the more naive and undifferentiated appropriations of neuroscience, characteristic of some divisions of the humanities in recent times (for a valuable assessment in the field of political theory, see Gunnell 2007). We will only hint at the tendencies towards depoliticization of discourses revolving around human nature (Cooter 2007; Forman 2010) and towards phantasies of technological quick fixes in matters of social life and suffering (Elliott 2004). Instead, we will explore what political theory does have to gain by positioning itself in relation to the contemporary neurosciences. Importantly, however, this positioning will not amount to an uncritical acceptance of neuroscientific “results.” Cognitive neuroscience, at its current stage as a developing

Not for Distribution

1 discipline focusing on what is likely the most complex object of investigation
2 imaginable, is not at the “result stage” in any meaningful sense of the term. At
3 present, and for the foreseeable future, the field has no theory about how the
4 human brain actually functions, it is not fully clear even to neuroscientists
5 what their tools actually measure, and whether their current theoretical and
6 conceptual constructs will survive the next wave of technological and/or metho-
7 dological innovation. These issues have been acknowledged and discussed by
8 philosophers (Klein 2010a, 2010b; Kahane and Shackel 2010), psychologists (Uttal
9 2001), anthropologists (Dumit 2004), interdisciplinary researchers (Hanson
10 and Bunzl 2010) and, of course, neuroscientists themselves (Junghöfer, Peyk,
11 Fleisch, and Schupp 2006; Logothetis 2008; Vul, Harris, Winkielman, and Pashler
12 2009).

13 In light of this, and in light of the discursive realities surrounding the field, we
14 will argue that human-level neuroscience turns out to be constitutively shot-
15 through with *hermeneutic* elements – arguably, it is even to a certain degree itself
16 an interpretive discipline. Being technologically enhanced and biologically framed,
17 neuroscience is of course unlike traditional interpretive disciplines. But when it is
18 dealing with relevant human traits on the personal or mental level, neuroscience
19 is *constructing interpretations* – rich narrative framings of certain aspects of human
20 mental life, personhood, and human traits, habits, functions and malfunctions;
21 interpersonal interactions, and healthy and diseased states. These narratives often
22 have a strong tendency towards anthropological generalization (the “empathic
23 animal,” “daydreamers,” etc.), are crucially fed by several meta-narratives or
24 background stories such as evolutionary theory (Young 2012), forms of materi-
25 alism or determinism, and are regularly endowed with an apparently robust, often
26 tacitly normative, authority (Hartmann 2012).² In this way, neuroscience is
27 not, after all, so radically different from philosophy and other broadly intelligible
28 discourses about cultural meaning. To its own advantage (but with ambivalent
29 consequences outside its immediate sphere of influence), neuroscience is a power-
30 ful discourse-orienter and -amplifier in today’s cultural climate. Thanks to its
31 prestige as the allegedly hard science of human reality, this is especially the case in
32 modern societies where the sciences have assumed a central role among the life-
33 orienting sources of meaning. Neuroscience’s stories catch on as they seem to
34 epitomize a robust form of objectivity³ – increasingly constituting the backbone
35 to emerging neuropolicies and the evidence base for new forms of self-help.

36 While the acknowledgment of the de facto hermeneutic character of much
37 of current neuroscience might serve as the grounds for a substantial critique of
38 the field, we will try to give it a constructive twist. Approaching man, the “self-
39 interpreting animal” (Taylor 1985/1977), by means of hermeneutics can yield
40 valuable results, and when interpretations are aligned with innovative experi-
41 mental methods, technological measurement devices, and, however vaguely,
42 linked to a more robust and sure-footed biology, this *might* open up a space where
43 human self-understanding at large will benefit, even in the absence, for the time
44 being, of firmly established scientific results and despite sometimes distorted
45

Not for Distribution

52 Jan Slaby, Philipp Haueis, Suparna Choudhury

1 disciplinary self-understandings.⁴ In light of this, political theory's potential alli-
2 ance with parts of the neuro-enterprise might turn out to be fruitful after all. It is
3 this perspective we deem worth exploring, albeit with a critical stance towards the
4 social, cultural, political, and academic embracing of neuroscience and many of its
5 material and discursive corollaries. Such a stance goes by the name of "critical
6 neuroscience" (see Choudhury and Slaby 2012). We will outline this project's
7 motivation and agenda in the first part of our chapter.

8 To provide a preview of what is to come, let us first focus on politics and
9 briefly relate what we think neuroscience could offer this field. The common
10 pattern behind many appropriations of neuroscience by political scientists and
11 theorists is that neuroscience will deliver robust empirical insights into the psy-
12 chological functioning of human beings, and that these insights will underwrite
13 specific theoretical articulations of our political preferences, capabilities, and
14 liabilities, while disconfirming other such articulations. The result, it is assumed,
15 will be an empirically grounded, scientifically established political theory and
16 political psychology. This common way of thinking, however, mischaracterizes
17 the nature and current status of neuroscientific theorizing. Given the statistical
18 reasoning and indirect measures of, for example, neuroimaging, there are no
19 established and generalizable results that could support more than broad tenden-
20 cies. Furthermore, the theories of naturalistic and scientific approaches to human
21 nature are in every respect as contestable as theories in the humanities and
22 social sciences (see Gunnell 2007). Most of the distortions occur when the alleged
23 results travel beyond laboratories and scientific journals towards audiences eager to
24 re-present them (and sometimes because of the representations of neuroscientists
25 themselves, see Gonon, Bezard, and Boraud 2011). It is in the appropriations of
26 commentators and journalists where the preliminary and interpretive character
27 of neuroscientific results gets replaced by rhetoric of indisputability and objectivity
28 beyond doubt (Dumit 2004; Joyce 2008).

29 The hermeneutic character of cognitive (neuro-)science has been discussed by
30 Gallagher (2004). While acknowledging the distinction between the method of
31 explanation (*Erklärung*) and understanding (*Verstehen*), he argues that both cog-
32 nitive science and hermeneutics can be linked through their subject areas (broadly
33 construed). Gallagher first attempts to show that hermeneutical and neuroscientific
34 theories agree on the assumption that human beings recognize objects via cog-
35 nitive schemas or interpretive frameworks. He goes on to claim that hermeneutics
36 can inform scientific models of how humans practically cope with problems
37 in situations where solutions are highly context-dependent. When observing the
38 situation from the opposite direction, however, evidence about the mirror neuron
39 system as an explanation for elementary understanding of others (Rizzolatti,
40 Fadiga, Gallese and Fogassi 1996; Gallese and Goldman 1998; Rizzolatti, Fogassi,
41 and Gallese 2000; Gallese 2001; 2005) can replace the outdated hermeneutical
42 conception of a "divinatory power" that allows humans to detect and complete
43 intentions of others. However, while Gallagher is convincingly exploring the
44 fruitful connection of these two methods, his characterization of the hermeneutic
45

Not for Distribution

1 character of science itself assumes that “scientists make interpretations, and their
2 interpretations are biased in a very productive way by the scientific tradition
3 to which they belong, and the specific kinds of questions they ask” (ibid.:
4 165). There are indeed good examples for the intra-disciplinary hermeneutic
5 elements of neuroscience Gallagher is concerned with. They include “ambiguous
6 signals” of neuronal mass action measured with fMRI technology (Logothetis
7 2008: 874), the selection bias concerning brain areas that have already been ana-
8 lyzed (Kriegeskorte, Simmons, Bellgowan, and Baker 2009) and the application of
9 traditional hermeneutics to research on imitation in infants and animals (Kestra
10 2008). But such a construal fails to acknowledge that neuroscientists studying
11 the human brain are biased also by the cultural, social, and political tradition they
12 are embedded in. Since these biases often go unnoticed by neuroscientists them-
13 selves, who are – as Gallagher rightly points out – concerned with their own
14 scientific tradition, it is necessary that researchers make explicit in which wider
15 institutional and political framework their science is situated.⁵ Only when
16 such an explication has taken place, the relation between neuroscience and the
17 humanities – or political theory in particular – can be turned into a two-way
18 street: instead of explaining political agendas and political behavior with the
19 wiring of an apolitical experimental brain, one can establish a neuroscientifically
20 informed (political) theory of a socially extended and invaded mind (Gallagher
21 and Crisafi 2009; Gallagher 2011; Protevi 2011), which – ideally – reflects and
22 instrumentalizes the implicit politics of naturalizing social processes.

23 Against this background, we shall assess in the second part of this chapter some
24 of the most challenging work in the field of “neuropolitics” – most notably
25 William E. Connolly’s 2002 book that goes by this very title. In Connolly’s book,
26 the appeals to neuroscience are not much more than fancy decoration, doing very
27 little real work in relation to the arguments actually brought forth. We contrast
28 these invocations of the modish prefix “neuro,” that proclaim to (allegedly) break
29 with (allegedly) time-honored, intellectualist positions, with our own account of
30 a critical neuroscience of political theory. While drawing on some of the ideas
31 outlined in John Protevi’s book *Political Affect* (2009), we develop a two-level
32 critique of hermeneutic elements in neuroscience, opening up new avenues
33 for intervention. On the intra-disciplinary level, we will criticize the neglect,
34 within standard interpretations of neuroscientific results, of the social and political
35 influences upon cognitive development. Instead, we will point out that these
36 interpretations are increasingly used as biologized facts about social behavior
37 without critical awareness of the political norms they reproduce in the wider
38 society in which the research is embedded. By using neuroscientific results more
39 strategically, political theory can gain a powerful tool to show how normative
40 systems in different forms of society shape the cognitive and affective make-up
41 of its members. Neuropolitics, as a normative endeavor of assessing varieties of
42 political cohabitation, would then employ brain research instrumentally instead
43 of contributing to an unwarranted inflation of its discursive authority over all
44 things impinging on our view of human nature.
45

Not for Distribution

54 Jan Slaby, Philipp Haueis, Suparna Choudhury

1 **Towards a critical neuroscience**

2 Critical neuroscience attempts to open up a space for unconstrained inquiry into
3 the current state and status of the cognitive, affective, and social neurosciences –
4 and in particular into these disciplines’ real-world effects and into their various
5 cultural, social, and academic appropriations (Choudhury, Nagel, and Slaby 2009;
6 Choudhury and Slaby 2012). This space of inquiry is itself inherently political by
7 virtue of its cultural importance and contested nature of its subject matter. The
8 projected form of inquiry must confront the ways in which personhood is framed
9 within neuroscience, and the way in which neuroscience itself is enmeshed in and
10 shaped by institutional systems, including the ongoing transformations of science
11 and the university in general.

12 The concept of “critique,” as we use it, starts from the assumption that scien-
13 tific inquiry into human reality has a tendency to mobilize, and subsequently
14 anchor, specific values, and often works in the service of interests that can easily
15 shape construals of nature or naturalness. These notions of nature or of what
16 counts as natural, whether referring to constructs of gender, mental disorder, or
17 human development, require unpacking. Without reflection on their histories and
18 formative assumptions underlying them, they appear as self-evident, universal,
19 and above history, and are often seen as a form of normative facticity in their
20 making claims upon us in everyday life: how to live healthily, work well, learn
21 optimally, relax and organize one’s relationships (see Hartmann 2012).⁶

22 Critical neuroscience is not motivated by the aim to undermine the epistemo-
23 logical validity of neuroscience or debunk the researchers’ motives. Situated
24 between neuroscience and the humanities, critical neuroscience uses a historical
25 sensitivity to analyze the claim that we are in the throes of a “neuro-revolution.”
26 Investigating the historical and cultural contingencies of prime neuroscientific
27 categories, the task is to analyze the ways in which, and conditions through
28 which, behaviors and categories of people are biologically naturalized and subse-
29 quently mobilized. It considers how specific alleged “brain facts” are appropriated
30 in various domains in society, starting with medicalized contexts of the West, but
31 also using cross-national comparative methodology to understand the production
32 and circulation of neuroscientific knowledge globally. Maintaining close engage-
33 ment with neuroscience is on the one hand crucial for building accurately
34 informed analyses of its societal implications, whilst on the other hand, providing
35 a reflexive interface through which historical, anthropological, philosophical, and
36 sociological analysis can feed back and provide creative potential for experimental
37 research in the laboratory.

38 Central to the project is the impetus to cultivate an increasing awareness of
39 the factors that come together to stabilize scientific worldviews and create the
40 impression of their inevitability. Furthermore, critical engagement in neuroscience
41 can increase the complexity of behavioral phenomena (for example emotions,
42 interaction, decision-making, mental disorders), and motivate scholars to enrich
43 conceptual vocabularies of behavior and mental illness, keeping debates from
44 45

Not for Distribution

1 being foreclosed by the belief that the ontologically most fundamental level of
2 explanation is by default the most appropriate one (S. Mitchell 2009).

3 Contextualizing neuroscientific objects of inquiry – whether the neural basis of
4 addiction, depression, sociality, lying, or adolescent behaviors – can demonstrate
5 how such alleged findings, whilst capturing an aspect of behavior in the world,
6 are also held in place by a number of factors, co-produced by a collection of
7 circumstances, social interests, and institutions (Young 1995; Hacking 1999).
8 These circumstances and interests are often quite systematically ignored in neuro-
9 discourse (see, for example, Heinemann and Heinemann 2010).

10 However, a critical endeavor cannot stop at disengaged complexification.
11 We share a sense of uneasiness with several scholars in the field of Science and
12 Technology Studies (STS) in particular (Wise 2006; Cooter 2007; Mirowski and
13 Sent 2008; Anderson 2009; Cooter and Stein 2010; Forman 2010) about a quite
14 specific *depoliticization* of scholarship amidst the increasing commercialization of
15 academia. In line with a broader cultural tendency favoring voluntarist concep-
16 tions of the “entrepreneurial self,” centered around ideas of “resources” and per-
17 sonal “capital” (such as social, emotional, or mental capital), there is a striking
18 correspondence between scholarly discourse and economic imperatives and nor-
19 mative schemas (Fricke and Choudhury 2011).⁷ Here, the hermeneutical character
20 of much current human-level neuroscience becomes particularly clear: not only
21 does neuroscience with remarkable ease absorb and integrate prevalent *Zeitgeist*
22 themes (Malabou 2008; Karafyllis and Ulshöfer 2008; Slaby 2010), but some
23 of the key metaphors used by neuroscientists also reflect the political climate they
24 were established in, e.g. the brain as a “thinking machine,” alluding to the new
25 position of the intellectual in late nineteenth-century industrialized society
26 (Schaffer 1999), “hard-wiring” in the Cold War era (Borck 2012), or “plasticity”
27 in times of a more flexible capitalism (Hartmann 2012). In view of these multi-
28 farious cultural infiltrations and exchanges, a more radical and openly political
29 positioning is called for. Such a positioning has to begin with the acknowl-
30 edgment that neuroscience, at least at present, is in large part itself engaged in the
31 construction of interpretations of human affairs – for better and for worse. In light
32 of this, we intend to reinvigorate a sense of the impact that larger social, political,
33 and economic dynamics have on the shape of academic and scientific culture.
34

35 36 **Neuroscience, society, and personhood**

37 Interestingly, in acknowledging the hermeneutic character of important strands of
38 current cognitive and social neuroscience, we can concede a convergence in the
39 analytical perspectives behind both neuroscience itself and certain reflexive, meta-
40 scientific endeavors such as critical neuroscience. This common ground, we claim,
41 is a historical ontology of subjectivity, personhood, and human culture. This view
42 understands the make-up of human beings to be in an important sense historically
43 constituted – through processes of situated self-interpretation of human subjects in
44 material settings and in relation to social structures and practices (Berger and
45

Not for Distribution

56 Jan Slaby, Philipp Haueis, Suparna Choudhury

1 Luckmann 1966; Taylor 1989; Foucault 1973; see also Brinkmann 2005, 2008).
2 Properly spelled out, such a perspective will not break with a naturalistic under-
3 standing of the human world (Rouse 1996, 2002), thus allowing an alignment
4 with robust first-order natural science.⁸

5 In particular, we follow Ian Hacking in the assumption that science, medicine,
6 education, and other institutions and areas of social practice and policy are
7 key contributors in the processes that create kinds of people through complex
8 processes of “classificatory looping” (Hacking 1995, 1999). Classificatory terms
9 come bundled with norms and expectations about the objects collected under
10 their scope, and objectifying an identity, stage of life, culture, or behavior in those
11 terms can interact with the experience of that which is classified. *Interactive kinds*
12 are classifications robustly taken up into the self-understanding of those classified.
13 These processes lead to the emergence of new practices, new alliances, new
14 institutions that interact with the persons in question – in establishing and sus-
15 taining habits, thought patterns, forms of conduct, and schemes of judgment.
16 Classificatory looping is a circular interaction between the categories used to
17 classify groups of people, these people’s behavior, attitudes and understanding of
18 themselves in response to these classifications, and the modification of the original
19 categories as a result of the classified subjects’ altered modes of conduct.

20 The idea that kinds of people are historically “made” through powerful classi-
21 fications gains additional relevance when placed in the context of what Anthony
22 Giddens has called *institutional reflexivity*: The routine incorporation of new
23 knowledge into environments of organized action that are in this way constantly
24 transformed and reorganized (cf. Giddens 1991: 243). Institutional reflexivity is
25 a central working principle of institutions in late modern societies, including, of
26 course, science itself. Expert knowledge, variously mediated, interacts, in multiple
27 settings and through complex feedback loops, with the practices and self-under-
28 standing of subjects, to an extent that these interactions are no longer recognized
29 as what they are and are taken as natural givens. It is well documented that
30 the modern life sciences have been a crucial element in processes of this kind
31 (Danziger 1990; Rose 1996; Richards 1996; Ward 2002).⁹

32 Increasingly, today, the neurosciences are entering into the loop, as the
33 “new image of man” discourse becomes increasingly widespread, and a wealth of
34 brain-based approaches exert ever more influence upon medicine, education,
35 advertising, and recreation and also by influencing other domains of knowledge
36 production as in the burgeoning neuro-disciplines from neuro-economics to
37 neuro-theology or neuro-aesthetics.¹⁰ This goes along with an often enthusiastic
38 reception of neuroscience within large swathes of the humanities and social
39 sciences, documenting the scientific reformatting of discourses of human nature
40 that is presently underway. Certainly, there is some danger in letting academic
41 fields (such as political theory) submit too willingly and uncritically to the
42 “seductive allure” of appeals to neuroscience. It would be false, however, to
43 exclude neuroscience itself from such danger by claiming that the wider public
44 just does not understand what real scientists do. Scientists themselves often
45

Not for Distribution

1 display the tendency to finalize their own research prematurely or to stop
2 critical reflection in order to serve the scarce attention of the medialized public
3 with a never-ending series of new facts about the nature of humans and their
4 brain.¹¹

5 While neuroscience is officially attempting to penetrate to the ultimate level of
6 human functioning – the first nature of the central nervous system’s organization
7 and mode of functioning – it in fact participates, in concert with other actors and
8 actants, in the construction of a powerful second nature: a conceptual, institu-
9 tiona, and informational environment that breeds robust practices and institutions
10 of subjectification – interpretations, practices, and settings that “make up people”
11 (Hacking 2002; Slaby 2010; Hartmann 2012). A central task for critical neu-
12 roscience is to make these construction processes explicit with the goal to subject
13 them to critical scrutiny and assess their formative assumptions and underlying
14 commitments. Although neuroscience is not the sole cause, driver, or solution to a
15 set of relevant social, cultural, and political changes and problems, its growing
16 power as a quasi-hegemonic interpretive scheme in human affairs certainly makes
17 it a target of special attention in the task of subjecting the current societal trans-
18 formations to reflexive critical scrutiny.

19 Importantly, Hacking’s approach also helps to see how processes of classification
20 can interact directly with the biology of personal traits and ways of being, ren-
21 dering stark oppositions between the social/historical and the natural obsolete.
22 Hacking helpfully speaks of “biolooping” (Hacking 1999: 123).¹² Biolooping is
23 an inherently social and culturally mediated process, but one that nevertheless
24 “goes deep.” This process, however, is certainly disparate with problematizations
25 that would myopically center on the (alleged) impacts or implications of neu-
26 roscience, on worrisome advances in what is known about the brain, and what
27 is possible for future applications. Rather, biolooping is a key part of the complex
28 processes of interaction between individual persons, social systems, and institu-
29 tions, mediated self-understandings and what is brought into public circulation as
30 the “results” of the human sciences – in short, exactly those processes that have to
31 be subjected to particular scrutiny as it is in and through them that the contours
32 of our future lifeworlds are crucially shaped.¹³

34 On a slightly broader scale, ethnographic work by Margaret Lock provides
35 further support and evidence for the need to collapse conventional dichotomies
36 between the inside and outside of the human body and between the cultural and
37 the biological more broadly. Her seminal study of the experience and physiologi-
38 cal characteristics of menopause among Japanese and American women led her
39 to the concept of “local biologies,” a useful way to denote her finding that social
40 context and culture can reach as deep as to directly refashion human biology
41 (Lock 1993; Lock and Kaufert 2001; Lock and Nguyen 2010: 4). Lock found that
42 the cultural differences in menopause/konenki runs deep, manifesting on biologi-
43 cal, psychological, and social levels. She argues that the different experiences of
44 hot flushes were not simply due to differences in cultural expectations in relation
45 to the body, but down to the biological effects of culturally determined behaviors

Not for Distribution

58 Jan Slaby, Philipp Haueis, Suparna Choudhury

1 such as diet. This finding challenges the tendency in biological science to draw
2 boundaries at the skin, and demonstrates instead the ongoing dialectic between
3 biology and culture (Wexler 2006). Transcultural psychiatrist Laurence Kirmayer
4 has extended these ideas to the brain and behavior through his concept of
5 “cultural biology,” which understands culture as a biological category in the
6 sense that human beings have evolved a “biological preparedness to acquire
7 culture ... through various forms of learning and ... neural machinery” (Kirmayer
8 2006: 130). Lock’s and Kirmayer’s concepts of “local biologies” and “cultural
9 biologies,” respectively, capture a notion of central importance to critical neu-
10 roscience: biology and culture are mutually constraining and co-constitutive, such
11 that they are each conditions of the other’s determination and development.

12 Situating the brain and behavior in social and cultural contexts underscores the
13 importance of examining recursive loops between neurobiological and social/
14 cultural processes such as the way in which explanatory theories of illness and
15 behavior themselves interact with the physiological processes involved. In a variety
16 of ways, culture and local biologies can transform one another, exerting their
17 influence on the way we understand ourselves, the way we experience mental
18 and bodily phenomena and the way that this in turn shapes the corresponding
19 biological processes. In a nutshell, there is no proper boundary between biological
20 and social/cultural studies when it comes to specifically human traits and capacities
21 (Fox Keller 2010).

22 With this theoretical and operative framework in place, we will now turn
23 towards an assessment of recent work in the nascent field of “neuropolitics.” The
24 aim is to point out the dangerous shortcomings of an uncritical stance towards
25 neuroscience (as it is adopted increasingly by scholars in the humanities),
26 and to subsequently outline a more complex approach that construes the
27 exchange between political thought and empirical science essentially as a two-way
28 street.
29

30 31 **Neuropolitics I: anti-intellectualism run wild**

32
33 As an exemplar of recent work aligning political thinking with current work in
34 neuroscience, we chose the seminal *Neuropolitics: Thinking, Culture, Speed* by
35 acclaimed political theorist William Connolly (2002). The book offers a multi-
36 faceted political philosophy and cultural theory focused on the accelerating speed
37 in late modern societies, undertaking to defend an ethos of pluralism against
38 conservative, neo-romantic, and fundamentalist opponents. An important strand
39 in Connolly’s study is the sketch of a theory of thought, broadly conceived –
40 where “thought” is seen as a bundle of multilayered, affect-imbued, technologi-
41 cally enhanced processes that originate “below the surface” of subjectively
42 articulable consciousness. Notions such as “virtual memory,” “affective register,”
43 or “perceptual skill,” often combined with ideas from film theory and vividly
44 illustrated by a wealth of examples, helpfully support what turns out to be a
45 powerful narrative of embedded subjectivity under conditions of late modernity.

Not for Distribution

1 Nietzsche, Bergson, Deleuze, Arendt, among others, emerge as heroes in the
2 background, supplying unconventional ideas and suggesting various courses of
3 argument.

4 Why has Connolly chosen to title his study “*Neuropolitics*”? Obviously, he
5 includes at various places references to the brain sciences, broadly conceived: to
6 Damasio’s theory of somatic markers – emotional mechanisms that provide instant
7 appraisals of imagined options or thought contents in the form of “gut feelings”
8 (Damasio 1994, 1999); to Ramachandran’s studies of hemilateral neglect
9 and phantom limb pain that are believed to show how little conscious access
10 we have to processes of motor control, sensory feedback, and subliminal percep-
11 tion; and surely to Varela’s neurobiological-cum-philosophical theory of the
12 embodied mind which opposes intellectualist, computational, and representational
13 cognitive science (Varela, Thompson, and Rosch 1991; Damasio 1994, 1999;
14 Ramachandran and Blakeslee 1998). All these references and inclusions are
15 intended to show “how biology is mixed differentially into every layer of human
16 culture, even as it addresses the highest modes of intellectuality, artistry, creativity,
17 freedom, and reflexivity of which the human animal is capable” (p. 62). But
18 it is not very surprising that the work of Damasio, Varela, or LeDoux connects
19 to the “minor tradition of reflection” Connolly wants to continue (Lucretius,
20 Nietzsche, James, Bergson, and Merleau-Ponty would be exemplary here).
21 Connolly has chosen some of the more *philosophically inclined* writers among
22 today’s neuroscientists – whose theories are broad-scale hermeneutical app-
23 roaches towards aspects of human nature, sometimes more in the guise of truly
24 scientific accounts (Damasio, Ramachandran), sometimes less so (Varela; see also
25 Papoulias and Callard 2010: 33, for a similar observation). These theorists indeed
26 connect – at times loosely, at times not so loosely – with parts of the minor
27 intellectual tradition Connolly refers to. The real question is: How much actual
28 work is done by strictly empirical neuroscience in these accounts? or rather: What
29 makes these accounts interesting to scholars like Connolly?

30 Connolly’s most original and most substantive points, as well as the overall spirit
31 of his account, are derived from Nietzsche, supported by ideas from unconven-
32 tional theorists in the philosophy of science (Prigogine, Stengers), not least also
33 from film theory (Shaviro) and from his own interpretation of several mainstream
34 movies. But since his adoptions from neuroscience resemble a rather general
35 philosophy of embodiment, motor skills, and extended cognition, it is striking
36 to what extent the neuro-prefix functions as an organizing umbrella that
37 connects disparate strands of thought that share a certain spirit or rough ten-
38 dency.¹⁴ Connolly wants to capture a *Zeitgeist*, where a “natural” link between
39 neuroscience and technological progress, anti-intellectualism, fashionable mixtures
40 of unconventional human science and avant-garde cultural theories is drawn. But
41 the suggestive associations with neuroscience (perception, sensibility, the mod-
42 ulation of attention through visual media or affective traces in memory) concern
43 mostly areas on which, to date, several humanities disciplines – and historical
44 figures such as Bergson, James, certainly Nietzsche, and even Aristotle – have
45

Not for Distribution

60 Jan Slaby, Philipp Haueis, Suparna Choudhury

1 much more, and often more well worked-out things to say than most empirical
2 approaches in the neurosciences, although some of their proponents engage in this
3 broader intellectual exchange within the humanities as well. Thus Connolly and
4 other neuro-enthusiasts among humanities scholars are honoring the neu-
5 rosciences a good deal too much, they embrace it too readily, prematurely, and
6 uncritically as some sort of new “holy grail” of thought about human nature,
7 generously giving credit before actual research findings have emerged, and surely
8 before alleged findings have settled into well-founded explanatory theories.¹⁵
9 These scholars apparently do this in an over-ambitious attempt to leave behind
10 certain outworn bastions of humanist thought. But why bother so much?

11 First, because these neuroscience-friendly anti-intellectualists commit a char-
12 acteristic but highly consequential mistake: in their eager attempt to oppose
13 intellectualism, they miss out on the crucial distinction between intellectualism
14 and normativism. While the former is a misguided empirical position that indeed
15 deserves scientifically informed opposition, the latter – properly construed – is a
16 crucial precondition of rational thought, political theorizing, and social critique. In
17 fact, this is a pattern that recurs in the accounts of many naturalistically inclined
18 thinkers: authors putting forth normative conceptions of human affairs are treated
19 as if they were advancing empirical descriptions of human nature. Not surprisingly,
20 their accounts will then seem hopelessly intellectualistic – as substituting lofty
21 abstractions and idealist phantasies for the unruly, often rather unideal reality of
22 human affairs. But of course a normative approach to human thought necessarily
23 abstracts from much detail about the realities of real-life thought. After all, this is
24 the point of a normative approach: it operates from a perspective in which rational
25 considerations carry weight against descriptions that conflate the authority of
26 rational argument with the brute forces of empirical regularity, accounts that
27 collapse reasons into causes. Kant and his followers, for instance, are in this way
28 often mistakenly criticized.¹⁶ Political theory, not least, thrives in the very space
29 created by this distinction. In his resolute opposition to models of “deliberative
30 democracy” (2002: 17), Connolly mischaracterizes the opponent – and thereby
31 thoroughly simplifies what is a highly complex discursive situation.¹⁷
32

33 Connolly is certainly not alone here. For instance, fellow political theorist
34 Leslie Paul Thiele, in his encompassing study of practical judgment, reiterates a
35 thought pattern that is rife with the same type of error. The following appears
36 in the context of a critique of his intellectualist opponents:

37
38 For the most part, moral judgment is not a process of deriving imperatives
39 for action from abstract propositions. Rather, it arises through the inter-
40 nalization of social values and the immediate perception of their violations.
41 This process takes place without much in the way of recourse to theory.
42 (Thiele 2006: 71)

43
44 But it is pretty obvious that nobody denies the first and nobody earnestly dis-
45 agrees with the last sentence in this quotation. How real-life judgments are

Not for Distribution

1 reached is secondary compared to the question of their justification. In blatant
2 disregard of this distinction, Thiele substitutes an empirical description and
3 attempted explanation of processes of judgment for a normative theory of justifi-
4 cation. Not surprisingly, a caricaturized Kant appears throughout his book as the
5 prototype opponent – a “reason-obsessed deontologist” as one reviewer helpfully
6 put it.¹⁸ With all this, a false contrast is erected: those sufficiently aware of the
7 unruly realities of “thought-in-the-wild” on the one side, and reason-obsessed
8 intellectualists hopelessly out of step with the real nature of human judgment
9 on the other. What is lost is the crucial discursive space in which the outcomes of
10 those judgments or thought processes – no matter how they came about empiri-
11 cally – are assessed for their normative warrant.

12 Dropping the discursive space about the normative evaluation of judgments
13 connects to the second danger we sense in the enthusiastic embrace of the
14 neurosciences by influential scholars such as Connolly. In times of massive, and
15 politically troublesome increase in institutional power of technoscientific dis-
16 ciplines at the expense of traditional humanities disciplines and minor academic
17 subjects (many of which are acutely threatened with extinction),¹⁹ accounts,
18 research programs, or at the very least, book titles like Connolly’s, can function
19 inadvertently like marketing campaigns, furthering the re-formatting of huma-
20 nities discourses and departments, potentially leading to a situation where political
21 theorists proper are no longer seen as experts in political affairs – or at least one
22 in which neuropolitical theorists are raised to equal or higher footing by virtue of
23 their authoritative (but in our opinion, non-substantive) prefix (likewise other
24 humanities scholars in their respective areas of competence). This transfer of
25 expertise and redistribution of scholarly responsibilities is well underway already.
26 Put in this context, a misnomer such as “Neuropolitics” (for a book that equally
27 well could be named “Nietzschean Political Theory”) could turn out quite con-
28 sequential. In the end, Connolly can easily be tapped as an advocate of something
29 that he surely does not want to stand for. Critical neuroscience, in any case, will
30 stubbornly resist developments that openly or unwittingly participate in these
31 discursive and institutional reformatting. Enough already with premature, over-
32 enthusiastic, undifferentiated humanities appropriations of neurosciences and other
33 techno-scientific or techno-medical disciplines – it is time to concretely engage
34 neuroscience on the operative level.²⁰

35

36 37 **Neuropolitics II: towards a critical neuroscience** 38 **of political theory** 39

40 John Protevi’s recent book *Political Affect. Connecting the Social and Somatic* (2009),
41 while sharing some of the “neuro-embracing spirit” that besets much of Con-
42 nolly’s account,²¹ marks a significant advance in being in many places conscious
43 of the fact that neuroscience cannot just be uncritically adopted as it stands, but
44 needs itself to be subjected to conceptual and political critique. The result is
45 a synthetic approach that is grounded in an unconventional social ontology of the

Not for Distribution

62 Jan Slaby, Philipp Haueis, Suparna Choudhury

1 human world, breaking with problematic metaphysical and methodological
2 assumptions (such as individualism or explanatory reductionism). Without being
3 explicit about this, Protevi applies a kind of “parity principle” in dealing with
4 scientific inclusions into broader themes of the traditional humanities. This
5 procedure opens up new avenues for philosophical and political theories while
6 simultaneously re-framing scientific discourses about human nature in order to
7 steer clear of the predominant scientific meta-narratives (e.g., evolutionism,
8 methodological individualism, anti-intellectualism) that often ideologically bias
9 what will in the end be marketed as “scientific results.” Nevertheless Protevi
10 makes clear that as a political theorist, one does nothing different than a self-
11 critical scientist who carefully isolates parameters without taking his constructs
12 for the ultimate nature of reality (Protevi 2009: 21). Applying this self-critical
13 stance to his own multidimensional perspective, Protevi ensures that the neuro-
14 scientific facts inside his assemblage are not mistaken to be the rock-bottom
15 physical basis of political action. The specific template for this bidirectional
16 discursive engagement is a brand of anti-subjectivist, nonscientistic materialism
17 adopted from Deleuze and Guattari: chiefly the idea that the traditional human
18 subject – the self-conscious, rational, and morally accountable individual – is
19 not the appropriate unit of analysis but instead a resultant of social “fields,” sub-
20 conscious somatic processes, and collective assemblages. In a slogan, Protevi
21 operates “above, below, and alongside the subject” to examine the interlocking
22 effects of social dynamics, somatic processes, and constellations on the group
23 level.²²

24 While Protevi shares some of Connolly’s anti-intellectualism, stemming from
25 the embodied/embedded/extended approach of cognition with a Deleuzian twist,
26 his construal of current academic neuroscience is more concrete, although also in
27 need of extension. The renunciation of the abstract and calculating capacities of
28 the subject first of all coincides with the *affective turn* in social neuroscience
29 (Papoulias and Callard 2010). If one furthermore takes seriously the idea that an
30 organism (including unconscious processes like the body schema) only develops
31 in a (social) environment, analyzing the effects societal practices have upon the
32 ontogeny of individuals surpasses the task of finding the underlying correlates of
33 normative political decisions (Protevi 2009: 104, 105). But unlike Thiele’s hasty
34 abandonment of normativism in general, Protevi’s political theory remains
35 normative on both the explicit and implicit hermeneutic levels of neuroscience
36 we were discussing earlier. Concerning the explicit and intra-disciplinary herme-
37 neutics, localizing the effects of socialization in the brain alone becomes unjusti-
38 fied if the basic level of description is the organism and its environment. Protevi
39 describes this lack of justification when he bemoans how neuro-centrism brackets
40 considerations about the endocrine system to describe the bodily reactions to
41 extreme situations such as torture, war, or mass panics (2009: 148). But even
42 when extending the study of cognition beyond the skull/skin boundary, social
43 neuroscience has to be aware of the fact that cognitive and affective capacities are
44 distributed unequally in a population, depending on the cultural practices different
45

Not for Distribution

1 bodies are subjected to, such as gendering, racializing, or group classifications
2 (religion, social class, nationality). This unequal distribution makes the comparison
3 of individual results with a normalized mean highly problematic (Dumit 2004;
4 Protevi 2011).

5 It is exactly this process of normalization that marks the transition from “is” to
6 “ought,” or as we would frame it, from scientific norms of research to political
7 and cultural norms of society in general (cf. Hacking 1990: 160–62). Instead of
8 taking biolooping to be some unalterable operation, we conceive it as an inher-
9 ently open process that allows – and even calls for – deliberate (political) inter-
10 vention.²³ Protevi provides an example of such an interventionist political theory,
11 when he calls for the increase of self-organized power from below (*puissance*), an
12 ethics oriented towards actively joyous political affect, and a naturalized politics of
13 empathic solidarity (Protevi 2009: 50 and 185). Although we are not able to fully
14 discuss Protevi’s arguments, we nevertheless think that his account provides *one*
15 norm deviating from neo-liberal tendencies of creating atomistic behavior.
16 More importantly, these behaviors can be empirically tested by an affective neu-
17 roscience which is placed in a fully developed political context. Operating at
18 the level of the relation between science and society, critical neuroscience of
19 political theory is constantly challenging the classificatory effects of herme-
20 neutic social neuroscience, by contrasting them with alternative forms of human
21 cohabitation.²⁴ Thus neuropolitics would not risk to be reduced to a non-
22 normative and biologized discourse about the “political first nature” of man, but
23 instead shows how neuroscience itself risks to merely reproduce pre-existing
24 norms of society instead of critically assessing them (see Malabou 2008).

25 Although not always arranged explicitly as a two-level scientific–political
26 hermeneutics, Protevi’s account still moves beyond a mere theoretical analysis of
27 the role affection plays in political events. His success in escaping abstraction
28 becomes especially clear where he develops different case studies as nonarbitrary,
29 large-scale real-life experiments. In these, societies reveal their impact on and
30 construal of politically affected subjects. Although the interactions constituting
31 these events are political from the start, much of the politically relevant dynamics
32 bypass the attention and articulation capacities of the conscious subject (by enga-
33 ging subconscious registers of affect or sidestepping the individual on the meso-
34 level of technological assemblage). All this is in turn used as input to a broadly
35 critical stance that brings awareness to the multiplicity of tacit ways in which
36 collective affect is regulated on several levels of contemporary social life. Quite
37 persuasive in this regard is the “Hurricane Katrina” case study at the end
38 of *Political Affect*: a multidimensional analysis of collective affective dynamics con-
39 cerning the delayed government rescue effort in New Orleans. The chief
40 contention is that historically grown and media-amplified forms of racialized fear
41 led to a massively distorted, collectively sustained representation of the events in
42 the flooded city, culminating in a military operation against alleged (but largely
43 inexistent) “looters” instead of overdue government aid for flood victims.²⁵
44 Protevi’s analysis draws wide circles around the 2004 incidents, taking readers
45

Not for Distribution

64 Jan Slaby, Philipp Haueis, Suparna Choudhury

1 back to the colonial and slave trade history and spanning geology, meteorology,
2 oceanology, sociology, social history, political theory, and media ecology –
3 literally uniting sea, river, earth, sun, wind, city, technology, ideas, and people in
4 this quite particular fateful constellation. This is philosophical concretion in
5 its original sense of “*concrecere* – uniting, growing together”: the messy substance
6 of the human world is constituted by natural, historical, social, political trajectories
7 convening at certain times and places in events or processes that are not
8 captured neatly with the conceptual tools of single disciplines or disciplinary
9 paradigms.²⁶

10 In analytical models such as this, an image of an “undisciplined” critical inquiry
11 comes to the fore, in an organic conjunction of the scientific and the political. It is
12 here where the chances are best that neuroscience and other human sciences can
13 be brought into a productive exchange with the other perspectives relevant to a
14 critical political philosophy.
15

16

17 Conclusion

18 Beholding the increasing discursive and institutional power and media presence
19 of all things neuro, it seems that, to date, there is substantially more politics in
20 the “neuro” than there is “neuro” in politics. Neuroscience succeeds in creating
21 political dynamics in its favor – chiefly by publicly launching themes and initia-
22 tives that capture the cultural imagination and that seem to push for novel ways
23 of understanding key human affairs. Its stories catch on, and institutional reforms
24 in fields such as education, health, security, law enforcement (and so on) are on
25 the verge of being implemented. In light of this, there is first of all a need for
26 a *political theory of the neurosciences*: an approach that analyzes the institutional
27 impacts of brain-based approaches and disciplines within a changing social
28 and academic landscape and places these trends in the broader context of
29 current political, economic, and cultural changes. On the other hand, political
30 theory must not abstain from using neuroscientific results to craft truly inter-
31 disciplinary, i.e., sufficiently complexified, narratives about the embeddedness of
32 political subjects in their environment. A habitualized critical attitude becomes
33 crucial in dealing with the dangers and chances that lie in the development
34 of human-level neuroscience. Where neuroscience attempts to speak of the
35 brain non-metaphorically and demands to understand the mind “for what it is”
36 (Eliasmith 2003; Borck 2012), it might promise to have direct access to all
37 relevant features of human life, behavior, and capacity. With this illusional
38 outlook, it risks to be integrated into a totalitarian politics of de-civilization, pre-
39 ventation, and fear under the guise of a “secure” society (Hagner and Gehring
40 2006). However, if interpreted with an awareness of the complex mediations
41 en route to their subject matters, neuroscientific findings could also be used
42 to show that the entanglement of organism and environment prevents brain
43 research from revealing the universal and timeless first nature of human beings.
44 Choosing the second option, a critical neuroscience of political theory inverts
45

Not for Distribution

1 the claim that “we are our brains” into the quest to intervene into the herme-
2 neutical constructions of neuroscience itself, revealing that, to an equal
3 measure, the brain is what we do with it – individually, at the group level, and
4 in society – rather than that there is an ultimate biological nature of political
5 interaction.²⁷

6 The inverted perspective of critical neuroscience helps reveal the political
7 potential of recent studies from social psychology, which discuss, for example,
8 the correlation between brain size and intelligence (and its unequal distribution
9 among sex, race, and occupational groups), or claim that atheists and liberals
10 (in the US-American sense) are more intelligent since they have adapted to
11 evolutionary novel values (Higgins, Peterson, Pihl, and Lee 2007; Kanazawa
12 2010).²⁸ As these studies dispense with alternative, nonlinear conceptions of
13 evolution (Gould 2002; Bredekamp 2005) and neglect any “variable, other
14 than the brain, that can directly mediate cognitive ability” (Rushton and Ankney
15 1996: 31), they create the impression that society “naturally” evolved to have
16 suitable places for people with different cognitive abilities. What is lost by this
17 account is the discourse about the normative justification and appropriateness
18 of various forms of political cohabitation: if it is true that the structure of the
19 social environment influences the structure of cognition, how do we evaluate
20 the current state of society in face of the cognitive capacities and pathologies it
21 contributes to constituting? In order to resist the naturalization of social differences
22 already existing, the task of the critical (neuro-)scientist has to be strategic:
23 evaluate the consequences of classificatory effects (the mediators between the
24 brain and the social phenomenon in question, such as the unequal access to
25 the resources of cognitive development among different social groups, see Farah
26 et al. 2006) and the interests possible funders would have in these results, and
27 open up a public debate that negotiates whether the effect of the phenomenon in
28 question (such as the natural isomorphism of individual capacities and social
29 structures) is desirable or not.

30
31 However, thus far, some of the most visible work that goes under the label
32 “neuropolitics” is political only through its implicit depoliticization of discourses
33 about human nature and by its bypassing of social and institutional settings,
34 favoring individual traits and capacities. A truly political “neuropolitics” would
35 look different from shallow appropriations of simplified theoretical accounts
36 mixed up with equally dubious and selective borrowings from humanities tradi-
37 tions. Critical neuroscience responds by opening discursive spaces and contesta-
38 tions about the current vogue of the neuro-disciplines, analyzing the material
39 settings, institutional environments, and climates of opinion that facilitate these
40 alliances. Our hope is that such a broadened interpretive endeavor will be able
41 to align the creative potentials of various academic and scientific fields so that an
42 open, balanced, resourceful and, most importantly, socially responsible mode of
43 inquiry results – a mode of inquiry, moreover, that has surpassed for good the
44 thoroughly inadequate and outdated family of distinctions such as nature/nurture,
45 body/mind, and material/social.

Not for Distribution

66 Jan Slaby, Philipp Haueis, Suparna Choudhury

Notes

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45

- 1 The authors thank Max Stadler for his help in developing the initial outline of this chapter and Frank Vander Valk for immensely helpful comments to an earlier draft.
- 2 This tacit normative authority is certainly problematic, as it implicitly declares the mere *facticity* of the biological make-up of human organisms to be a normative standard governing matters of right and wrong in human affairs.
- 3 A rather simple argument lies behind this appeal: the brain is the organ most central to mind and thus personhood, and current neuroscience is in the business of discovering the brain's functioning principles. Thus neuroscience, more than any other discipline, will ultimately tell us what it is to be a person or to have a human mind. The two premises are roughly correct, but they leave much interpretive leeway and brush over mountains of complex conceptual, epistemological, and methodological problems. Engaging these problems from the perspective of the relevant disciplines and debates would inevitably take nearly all of the excitement away from this argument and its conclusion, but the complications are usually left out of the (public) debates. For the organizing power of the idea that "we are our brains," see Vidal 2009.
- 4 We will not reiterate the usual critique of exaggerated objectivist assumptions at the base of the disciplinary self-understandings in many natural scientific disciplines. For more on this, see Choudhury and Slaby (2011).
- 5 An assessment of the socio-cultural and political periphery surrounding the intra-scientific hermeneutical circle is also missing in earlier work on the hermeneutics of experimental physics (Heelan 1988), medicine (Leder 1990), and natural science in general (Heelan 1983, 1998). The lack of such an explication may be of very recent origin, for the brain was taken to be the seat of social and cultural and social factors by eugenics-influenced neuroscience in the late nineteenth century (Hagner 1999). Of course nobody wants to return to such dubious connections of racial policy and science. But we suspect that this threat can emerge even faster from a misunderstood objectivism of "unpolitical" research science.
- 6 In this, the approach of critical neuroscience does share some of the spirit with earlier Frankfurt School "critical theory" (see the first two chapters in Choudhury and Slaby 2011, for more on this linkage).
- 7 How these postmodernist tendencies might have rendered explanations that invoke "social influences" less common and less valued in STS is helpfully discussed by Forman (2010).
- 8 Joseph Rouse's pragmatist naturalism is in many ways inspirational to our approach, as it breaks with dominant assumptions that contrast nature in a dualistic manner either with mind, the social, or the normative. Instead, he articulates a position that steers completely clear of these oppositions. In this way, Rouse manages to incorporate important anti-naturalistic insights by authors such as Charles Taylor, John McDowell, and Robert Brandom into a naturalistic outlook. Obviously, Foucault is an important inspiration to this line of thought, as can be seen in Rouse's early work (1987).
- 9 For a well-worked out reconstruction of the various approaches to the history of psychology in relation to a historical ontology of the psychological subject, see Brinkmann (2008).
- 10 Important analyses of the increasing somatization, biologization, and medicalization of everyday life, including the emergent pattern of "neurochemical selfhood" and a subsequent "politics of life itself" have been provided by Nikolas Rose (e.g., 2007, 2010).
- 11 The expression "seductive allure of neuroscientific explanations" is used by Skolnik-Weisberg et al. (2008) to explain their empirical findings of laypeople's astonishing readiness to take at face value even openly flawed and overly simplistic pseudo-scientific explanations that make appeals to the brain and brain science, in contrast to non-brain-centric pseudo-explanations that were much more readily rejected as flawed.

Not for Distribution

- 1 12 Indeed, even Berger and Luckmann as sociological forerunners of the theory of *classifi-*
2 *catory looping* were well aware of processes we would today call “biolooping,” see
3 Berger and Luckmann (1966: 3).
- 4 13 We take it to be evident, by now, that “socially constructed” in no way means “not
5 real” (Hacking 1999). Thus, invocations of construction processes are not meant to
6 debunk particular ontological assumptions. As Latour helpfully points out, to focus
7 on construction and construction sites can well be understood as a specific manifestation
8 of a realist attitude – however, an attitude that comes with an awareness of the
9 fact that what is constructed might be constructed in a good or in a bad way and that
10 there usually are *alternatives* to its current way of being (see Latour 2005, especially
11 pp. 88–93).
- 12 14 The following is a typical passage that we hope conveys the spirit of the claims
13 Connolly makes with regard to blending different perspectives, including the neu-
14 rosciences: “films, too, communicate affective energies to us, some of which pass below
15 intellectual attention while still influencing emotions, judgments, and actions. These
16 considerations encourage us to augment intellectualist models of thinking and culture
17 with a perspective that appreciates the dense interweaving of genetic endowment,
18 image, movement, sound, rhythm, smell, touch, technique, trauma, exercise, thinking,
19 and sensibility. Thinking is implicated in body/brain/culture networks that extend well
20 beyond the skin of the thinker” (Connolly 2002: 13).
- 21 15 Moreover, as Papoulias and Callard (2010) point out, cultural theorists, social scientists,
22 and scholars writing about politics and society often tend to *misconstrue* the content
23 of the scientific theories they want to use for justifying their arguments. The authors
24 criticize Connolly in particular for dispensing with the traditional conceptual and
25 methodological framework of cultural and political theory to engage with the neu-
26 rosciences in a one-way street manner. This situation is not exactly improved by the
27 fact that “there appear to be relatively few neuroscientists in the room interested
28 in participating in those [interdisciplinary] ‘conversations’” (ibid.: 38).
- 29 16 Of course, this is not an all-or-nothing affair. Many normativists, Kant surely included,
30 are also to some extent intellectualists and can be rightly criticized for this. Martha
31 Nussbaum’s overly cognitivist theory of emotion might be a case in point (Nussbaum
32 2001), also the less than well worked out empirical foundation of the early Habermas’s
33 theory of communicative rationality (Habermas 1985a, 1985b) which has been amend-
34 ed somewhat in later writings (see Habermas 2003, 2008). Kant, on the other hand, as
35 a prime target of anti-intellectualist critique, is in many places quite explicit about
36 the fact that man is very much “made out of crooked timber” (most notably, of course,
37 in various places of his *Anthropology*, see Kant 1798/2006). In Connolly’s perspective,
38 however, the distinction between normativism and (descriptive) intellectualism has
39 collapsed completely.
- 40 17 A powerful philosophical account that embraces much of the complexity in the
41 dialectics between naturalism and normativism is Rouse 2002.
- 42 18 Cf. Stohr 2007. Her useful review brought the one-sidedness in Thiele’s account to
43 our attention.
- 44 19 See, e.g., Martin 2000.
- 45 20 As a political theorist, Connolly should be aware of the fact that invoking the brain in
discourses about “human nature” is inevitably always a political gesture: “It is because
in each individual the brain constitutes the controlling authority par excellence that
all the descriptions we can give of it always participate, in one way or another, in
political analysis” (Malabou 2008: 32).
- 21 For instance, when he calls his approach “political physiology” (p. xi), Protevi seems to
share some of the uncritical science-friendly spirit that drove Connolly to choose the
title “Neuropolitics.”
- 22 Needless to say, this particular theoretical positioning is contestable, but we can neglect
this for present purposes. For instance, one question that should receive particular
attention is whether the affect theory Protevi employs shares with other such

Not for Distribution

68 Jan Slaby, Philipp Haueis, Suparna Choudhury

- 1 approaches the problematic “privileging of ‘cellular time’ ... [which] carries within
2 it the implication that an afoundational biology also produces an afoundational
3 subjectivity and a politics of the afoundational, an implication that cannot be
4 sustained through the neuroscience that is brought into play” (Papoulias and Callard
5 2010: 41).
- 6 23 Unfortunately, one effect of social constructivism was that philosophers and historians
7 of science became content with describing the interaction of politics and science
8 without defending the older normative view that both science and society should be
9 open for strong alternatives: contrast Shapin and Schaffer (1985) with Polanyi (1946,
10 1951) or Feyerabend (1970, 1978). For a discussion of the epistemological and political
11 shortcomings of social constructivism in cultural theory, compare Papoulias and Callard
12 (2010): 34 and esp. footnote 8.
- 13 24 Achieving this task does not require a complete normative system as the alternative to
14 the current dominating forms of society. At least in the beginning it suffices to describe
15 how “cultural practices harm individuals” (Protevi 2011), preventing them to live a
16 good life, whereas the good is only something emerging from ethical negativism
17 (Adorno 1951; Jaeggi 2005).
- 18 25 Here, Judith Butler’s notion of “frames” is relevant – templates of experience and affect
19 that selectively mobilize and distribute affective energies in a body politic, often
20 orchestrated by the mass media, for instance in the context of representations of war
21 (see Butler 2009). In the Hurricane Katrina case, those frames were apparently operative
22 when incidental reports about alleged lootings – instead of encountering professional
23 skepticism and caution on part of observers and journalists – were blown out of
24 proportion to create the robust, widely publicized image of massive anarchy and black
25 gang violence in the flooded city. Protevi dates some of the origins of these
26 consequential frames back to violent slave revolts in eighteenth-century Louisiana. See
27 Protevi 2009: 169–83.
- 28 26 Another good example of a multilevel analysis of this kind and simultaneous metho-
29 dological reflection about it is T. Mitchell (2002).
- 30 27 We are here echoing Catherine Malabou’s (2008) slogan. Obviously, it expresses a
31 dynamic and temporal idea: Your brain *will become* what you do with it (i.e., with your
32 life – a process that is of course inextricable from its various social, political, biological,
33 geological, etc. enabling conditions).
- 34 28 Social psychology has just recently (re-)discovered its “biological basis,” claiming that
35 the constitution of a single brain is highly dependent on its interaction with other
36 brains. Exemplary for this new interdisciplinary research is the book *Neurosociology: The
37 Nexus between Neuroscience and Social Psychology* by David D. Franks (2010). While being
38 far more explicit and informed about the methodological limitations of neuroscientific
39 research, Franks shares many of the characteristics we criticized about Connolly’s
40 attempted neuralization of political theory: the preference of more philosophical neu-
41 rosociologists (Damasio, Ramachandran), an anti-intellectualist notion of individuality
42 (129f.), and a brain-centric definition of the nervous system (2). For further research
43 on neurosociology see TenHouten (2005); Kalkhoff and Gregory (2008); Smith-Lovin
44 and Winkielman (2010).

Bibliography

- 40 Adorno, T. W. (1951) *Minima Moralia. Reflexionen aus dem beschädigten Leben*, Frankfurt am
41 Main: Suhrkamp.
- 42 Anderson, W. (2009) “From Subjugated Knowledge to Conjugated Subjects: Science and
43 Globalisation, or Postcolonial Studies of Science?” *Postcolonial Studies*, 12(4): 389–400.
- 44 Berger, P. and Luckmann, T. (1966) *The Social Construction of Reality*, Garden City/
45 New York: Doubleday.

Not for Distribution

- 1 Borck, C. (2012) "Toys are Us. Models and Metaphors in Brain Research," in
2 S. Choudhury and J. Slaby (eds.) *Critical Neuroscience. A Handbook of the Social and Cultural*
3 *Contexts of Neuroscience*, Chichester: Wiley-Blackwell.
- 4 Bredekamp, H. (2005) *Darwins Korallen und die Tradition der Naturgeschichte*, Berlin: Klaus
5 Wagenbach.
- 6 Brinkmann, S. (2008) "Changing Psychologies in the Transition from Industrial Society
7 to Consumer Society," *History of the Human Sciences*, 21(2): 85–110.
- 8 — (2005) "Human Kinds and Looping Effects in Psychology: Foucauldian and
9 Hermeneutic Perspectives," *Theory & Psychology*, 15(6): 769–91.
- 10 Butler, J. (2009) *Frames of War. When is Life Grievable?* London: Verso.
- 11 Choudhury, S. and Slaby, J. (eds.) (2012) *Critical Neuroscience. A Handbook of the Social and*
12 *Cultural Contexts of Neuroscience*, Chichester: Wiley-Blackwell.
- 13 Choudhury, S., Nagel, S. K., and Slaby, J. (2009) "Critical Neuroscience: Linking
14 Neuroscience and Society through Critical Practice," *BioSocieties*, 4(1): 61–77.
- 15 Connolly, W. E. (2002) *Neuropolitics: Thinking, Culture, Speed*, Minneapolis: University
16 of Minnesota Press.
- 17 Cooter, R. (2007) "After Death/After-'Life': The Social History of Medicine in Post-
18 Postmodernity," *Social History of Medicine*, 20(3): 441–64.
- 19 Cooter, R. and Stein, C. (2010) "Cracking Biopower," *History of the Human Sciences*, 23(2):
20 109–28.
- 21 Damasio, A. (1999) *The Feeling of What Happens: Body and Emotion in the Making of*
22 *Consciousness*, San Diego, CA: Harcourt.
- 23 — (1994) *Descartes' Error: Emotion, Reason, and the Human Brain*, New York: Putnam.
- 24 Danziger, K. (1990) *Constructing the Subject: Historical Origins of Psychological Research*,
25 Cambridge: Cambridge University Press.
- 26 Dumit, J. (2004) *Picturing Personhood. Brain Scans and Biomedical Identity*, Princeton,
27 NJ: Princeton University Press.
- 28 Eliasmith, S. (2003) "Moving Beyond Metaphors: Understanding the Mind for What It Is,"
29 *Journal of Philosophy*, 100(10): 493–520.
- 30 Elliott, C. (2004) *Better than Well. American Medicine Meets the American Dream*, New York/
31 London: Norton.
- 32 Farah, M. J., Shera, D. M., Savage, J., Betancourt, L., Giannetta, J., Brodsky, N., et al.
33 (2006) "Childhood Poverty: Specific Associations with Neurocognitive Development,"
34 *Brain Research*, 1110: 166–74.
- 35 Feyerabend, P. (1978) *Science in a Free Society*, London: New Left Books.
- 36 — (1970) "Against Method. Outline of an Anarchistic Theory of Knowledge," 1st edn,
37 in M. Radner and S. Winokur (eds.) *Analyses of Theories and Methods of Physics and*
38 *Psychology*, Minneapolis: University of Minnesota Press.
- 39 Forman, P. (2010) "(Re-)cognizing Postmodernity: Helps for Historians – of Science
40 Especially," *Berichte zur Wissenschaftsgeschichte*, 33(2): 1–19.
- 41 Foucault, M. (1973) *Madness and Civilization: A History of Insanity in the Age of Reason*,
42 New York: Vintage.
- 43 Fox Keller, E. (2010) *The Mirage of a Space between Nature and Nurture*, Durham, NC: Duke
44 University Press.
- 45 Franks, D. (2010) *Neurosociology: The Nexus between Neuroscience and Social Psychology*,
New York/Dordrecht: Springer.
- 46 Fricke, L. and Choudhury, S. (2011) "Neuropolitik und Plastische Gehirne. Eine Fallstudie
47 des adoleszenten Gehirns," *Deutsche Zeitschrift für Philosophie*, 59(3): 391–402.
- 48 Gallagher, S. (2011) "The Socially Extended Mind," Conference Paper given at the
49 workshop The Socially Extended Mind, Free University Berlin, March 21–22.

Not for Distribution

70 Jan Slaby, Philipp Haueis, Suparna Choudhury

- 1 — (2004) “Hermeneutics and Cognitive Science,” *Journal of Consciousness Studies*,
2 11(10–11): 162–76.
- 3 Gallagher, S. and Crisafi, A. (2009) “Mental Institutions,” *Topoi*, 28(1): 45–51.
- 4 Gallese, V. (2005) “‘Being Like Me’: Self-Other Identity, Mirror Neurons and Empathy,”
5 in S. Hurley and N. Chater (eds.) *Perspectives on Imitation: From Cognitive Neuroscience to*
6 *Social Science, Vol I* (539–52). Cambridge, MA: MIT Press.
- 7 — (2001) “The ‘Shared Manifold’ Hypothesis: From Mirror Neurons to Empathy,”
8 *Journal of Consciousness Studies*, 8: 33–50.
- 9 Gallese, V. and Goldman, A. I. (1998) “Mirror Neurons and the Simulation Theory of
10 Mind-Reading,” *Trends in Cognitive Sciences*, 12: 493–501.
- 11 Giddens, A. (1991) *Modernity and Self-Identity. Self and Society in the Late Modern Age*,
12 Stanford, CA: Stanford University Press.
- 13 Gonon, F., Bezaud, E., and Boraud, T. (2011) “Misrepresentation of Neuroscience
14 Data Might Give Rise to Misleading Conclusions in the Media: The Case of Attention
15 Deficit Hyperactivity Disorder,” *PLoS One*, 6(1): e14618. doi: 10.1371/journal.pone.
16 0014618.
- 17 Gould, S. (2002) *The Structure of Evolutionary Theory*, Cambridge, MA: Belknap Press.
- 18 Gunnell, J. G. (2007) “Are We Losing Our Minds? Cognitive Science and the Study of
19 Politics,” *Political Theory*, 35(6): 704–31.
- 20 Habermas, J. (2008) *Between Naturalism and Religion: Philosophical Essays*, trans. Ciaran
21 Cronin, Cambridge: Polity Press.
- 22 — (2003) *The Future of Human Nature*, trans. J. J. Shapiro, Cambridge: Polity Press.
- 23 — (1985a) *The Theory of Communicative Action Vol. 1: Reason and Rationalization of Society*,
24 trans. Th. McCarthy, Boston, MA: Beacon Press.
- 25 — (1985b) *The Theory of Communicative Action Vol. 2: Lifeworld and System: A Critique of*
26 *Functionalist Reason*, trans. Th. McCarthy, Boston, MA: Beacon Press.
- 27 Hacking, I. (2002) *Historical Ontology*, Cambridge, MA: Harvard University Press.
- 28 — (1999) *The Social Construction of What? Cambridge, MA: Harvard University Press*.
- 29 — (1995) *Rewriting the Soul. Multiple Personality and the Sciences of Memory*, Princeton,
30 NJ: Princeton University Press.
- 31 — (1990) *The Taming of Chance*, Cambridge: Cambridge University Press.
- 32 Hagner, M. (1999) “Gehirnführung. Zur Anatomie der geistigen Funktionen 1870–1930,”
33 in idem (ed.) *Ecce Cortex. Beiträge zur Geschichte des modernen Gehirns (177–205)*, Darm-
34 stadt: Wissenschaftliche Buchgesellschaft.
- 35 Hagner, M. and Gehring, P. (2006) “Politik der Hirnforschung,” Interview in *Sic et*
36 *Non. Zeitschrift für Philosophie und Kultur im Netz*: [http://www.sicetnon.org/content/pol/](http://www.sicetnon.org/content/pol/PolitikHirnforschung.pdf)
37 [PolitikHirnforschung.pdf](http://www.sicetnon.org/content/pol/PolitikHirnforschung.pdf)
- 38 Hanson, S. J. and Buznl, M. (2010) *Foundational Issues in Human Brain Mapping*, Cambridge,
39 MA: MIT Press.
- 40 Hartmann, M. (2012) “Against First Nature: Critical Theory and Neuroscience,” in
41 S. Choudhury and J. Slaby (eds.) *Critical Neuroscience. A Handbook of the Social and Cultural*
42 *Contexts of Neuroscience*, Chichester: Wiley-Blackwell.
- 43 Heelan, P. (1998) “Scope of Hermeneutics in the Philosophy of Natural Science,” *Studies*
44 *in the History and Philosophy of Science*, 29: 273–98.
- 45 — (1988) “Experiment and Theory: Constitution and Reality” *Journal of Philosophy*,
85: 515–24.
- (1983) “Natural Science as a Hermeneutic of Instrumentation,” *Philosophy of Science*,
50: 181–204.
- Heinemann, L. V. and Heinemann, T. (2010) “Optimize your Brain! Popular Science and
its Social Implications,” *BioSocieties*, 5: 291–94.

Not for Distribution

- 1 Higgins, D., Peterson, J., Pihl, O., and Lee, A. (2007) "Prefrontal Cognitive Ability,
2 Intelligence, Big Five Personality, and the Prediction of Advanced Academic and
3 Workplace Performance," *Journal of Personality and Social Psychology*, 93(2): 298–319.
- 4 Jaeggi, R. (2005) "'Kein Einzelner vermag etwas dagegen.' Adornos Minima Moralia als
5 Kritik von Lebensformen," in A. Honneth (ed.) *Dialektik der Freiheit. Frankfurter Adorno-
6 Konferenz 2003* (115–41), Frankfurt a.M.: Suhrkamp.
- 7 Joyce, K. A. (2008) *Magnetic Appeal. MRI and the Myth of Transparency*, Ithaca, NY: Cornell
8 University Press.
- 9 Junghöfer, M., Peyk, P., Flaisch, T., and Schupp, H. T. (2006) "Neuroimaging Methods
10 in Affective Neuroscience: Selected Methodological Issues," *Progress in Brain Research*,
11 156: 123–43.
- 12 Kahane, G. and Shackel, N. (2010) "Methodological Problems in the Neuroscience
13 of Moral Judgment," *Mind and Language*, 25(5): 561–82.
- 14 Kalkhoff, W. and Gregory, F. (2008) "Beyond the Issues. Nonverbal Vocal Communica-
15 tion, Power Rituals, and 'Rope-a-Dopes' in the 2008 Presidential Debates," *Current
16 Research in Social Psychology*, 14(3): 39–51.
- 17 Kanazawa, S. (2010) "Why Liberals and Atheists Are More Intelligent," *Social Psychology
18 Quarterly*, 73(1): 33–57.
- 19 Kant, I. (1798/2006) *Anthropology from a Pragmatic Point of View*, trans. Robert B. Loudon,
20 Cambridge: Cambridge University Press.
- 21 Karafyllis, N. C. and Ulshöfer, G. (eds.) (2008) *Sexualized Brains: Scientific Modeling of
22 Emotional Intelligence from a Cultural Perspective*, Cambridge, MA: MIT Press.
- 23 Kestra, M. (2008) "The Diverging Force of Imitation. Integrating Cognitive Science and
24 Hermeneutics," *Review of General Psychology*, 12(2): 127–36.
- 25 Kirmayer, L. J. (2006) "Beyond the 'New Cross-Cultural Psychiatry': Cultural Biology, Dis-
26 cursive Psychology and the Ironies of Globalization," *Transcultural Psychiatry*, 43: 126–44.
- 27 Klein (2010a) "Philosophical Issues in Neuroimaging," *Philosophy Compass*, 5(2): 186–98.
28 ——— (2010b) "Images are not the Evidence of Neuroimaging," *British Journal for the Philo-
29 sophy of Science*, 61(2): 265–78.
- 30 Kriegeskorte, N., Simmons, W. K., Bellgowan, P.S.F., and Baker, C. I. (2009) "Circular
31 Analysis in Systems Neuroscience – The Dangers of Double Dipping," *Nature Neu-
32 roscience*, 12(5): 535–40.
- 33 Latour, B. (2005) *Reassembling the Social. An Introduction to Actor-Network-Theory*, Oxford:
34 Oxford University Press.
- 35 Leder, D. (1990) "Clinical Interpretation: The Hermeneutics of Medicine," *Theoretical
36 Medicine and Bioethics*, 11(1): 9–24.
- 37 Lock, M. (1993) *Encounters with Aging: Mythologies of Menopause in Japan and North America*,
38 Berkeley: University of California Press.
- 39 Lock, M. and Kaufert, P. (2001) "Menopause, Local Biologies, and Cultures of Aging,"
40 *American Journal of Human Biology*, 13: 494–504.
- 41 Lock, M. and Nguyen, V.-K. (2010) *An Anthropology of Biomedicine*, Chichester: Wiley-
42 Blackwell.
- 43 Logothetis, N. K. (2008) "What We Can Do and Cannot Do with fMRI," *Nature*,
44 453(7197): 869–78.
- 45 Malabou, C. (2008) *What Should We Do with Our Brain?* New York: Fordham University
Press.
- Martin, E. (2000) "Mind–Body Problems," *American Ethnologist*, 27: 569–90.
- Mirowski, P. and Sent, E. (2008) "The Commercialization of Science and the Response of
STS," in E. Hackett et al. (eds.) *Handbook of Science and Technology Studies* (635–90),
Cambridge, MA: MIT Press.

Not for Distribution

72 Jan Slaby, Philipp Haueis, Suparna Choudhury

- 1 Mitchell, S. D. (2009) *Unsimple Truths. Science, Complexity, and Policy*, Chicago, IL:
2 University of Chicago Press.
- 3 Mitchell, T. (2002) *Rule of Experts. Egypt, Techno-Politics, Modernity*, Berkeley and
4 Los Angeles: University of California Press.
- 5 Nussbaum, M. (2001) *Upheavals of Thought: The Intelligence of Emotions*, Cambridge:
6 Cambridge University Press.
- 7 Ortega, F. (2009) "The Cerebral Subject and the Challenge of Neurodiversity," *Biosocieties*,
8 4: 425–45.
- 9 Papoulias, C. and Callard, F. (2010) "Biology's Gift: Interrogating the Turn to Affect,"
10 *Body & Society*, 16(1): 29–56.
- 11 Polanyi, M. (1951) *The Logic of Liberty*, Chicago, IL: University of Chicago Press.
12 — (1946) *Science, Faith and Society*, Oxford: Oxford University Press.
- 13 Protevi, J. (2011) "Population Thinking," Conference Paper given at the workshop The
14 Socially Extended Mind, Free University Berlin, March 21–22.
- 15 — (2009) *Political Affect. Connecting the Social and the Somatic*, Minneapolis: University of
16 Minnesota Press.
- 17 Ramachandran, V. S. and Blakeslee, S. (1998) *Phantoms in the Brain: Probing the Mysteries of
18 the Human Mind*, New York: William Morrow.
- 19 Richards, G. (1996) *Putting Psychology in its Place: An Introduction from a Critical Historical
20 Perspective*, London: Routledge.
- 21 Rizzolatti, G., Fogassi, L., and Gallese, V. (2000) "Cortical Mechanisms, Subservient Object
22 Grasping and Action Recognition: A New View on the Cortical Motor Functions,"
23 in M. S. Gazzaniga (ed.) *The New Cognitive Neurosciences* (539–52), Cambridge, MA:
24 MIT Press.
- 25 Rizzolatti, G., Fadiga, L., Gallese, V., and Fogassi, L. (1996) "Premotor Cortex and the
26 Recognition of Motor Actions," *Cognitive Brain Research*, 3: 131–41.
- 27 Rose, N. (2010) "'Screen and Intervene': Governing Risky Brains," *History of the Human
28 Sciences*, 23(1): 79–105.
- 29 — (2007) *The Politics of Life Itself: Biomedicine, Power, and Subjectivity in the Twenty-First
30 Century*, Princeton, NJ: Princeton University Press.
- 31 — (1996) *Inventing Our Selves: Psychology, Power, and Personhood*, Cambridge: Cambridge
32 University Press.
- 33 Rouse, J. (2002) *How Scientific Practices Matter*, Chicago, IL: Chicago University Press.
34 — (1996) *Engaging Science. How to Understand its Practices Philosophically*, Ithaca, NY:
35 Cornell University Press.
- 36 — (1987) *Knowledge and Power. Toward a Political Philosophy of Science*, Ithaca, NY:
37 Cornell University Press.
- 38 Rushton, J. P. and Ankney, C. D. (1996) "Brain Size and Cognitive Ability: Correlations
39 with Age, Sex, Social Class, and Race," *Psychonomic Bulletin and Review*, 3(1): 21–36.
- 40 Schaffer, S. (1999) "OK Computer," in M. Hagner (ed.) *Ecce Cortex. Beiträge zu Geschichte
41 des modernen Gehirns* (254–85), Darmstadt: Wissenschaftliche Buchgesellschaft.
- 42 Shapin, S. and Schaffer, S. (1985) *Leviathan and the Air Pump. Hobbes, Boyle and Experimental
43 Life*, Princeton, NJ: Princeton University Press.
- 44 Skolnik-Weisberg, D., Keil, F. C., Goodstein, J, Rawson, E., and Gray, J. R. (2008)
45 "The Seductive Allure of Neuroscience Explanations," *Journal of Cognitive Neuroscience*,
20(3): 470–77.
- 46 Slaby, J. (2010) "Steps Towards a Critical Neuroscience," *Phenomenology and the Cognitive
47 Sciences*, 9: 397–416.
- 48 Smith-Lovin, L. and Winkielman, P. (2010) "The Social Psychologies of Emotion:
49 A Bridge that Is Not Too Far," *Social Psychology Quarterly*, 73(4): 327–32.

Not for Distribution

- 1 Stohr, K. (2007) "Review of Leslie Paul Thiele, *The Heart of Judgment*," *Notre Dame Philo-*
2 *sophical Reviews*: <http://ndpr.nd.edu/review.cfm?id=9225>.
3 Taylor, C. (1989) *Sources of the Self. The Making of the Modern Identity*, Cambridge, MA:
4 Harvard University Press.
5 — (1985/1977) "Self-Interpreting Animals," in *Philosophical Papers, Vol. 1: Human*
6 *Agency and Language*, Cambridge: Cambridge University Press: 45–76.
7 TenHouten, W. D. (2005) *Time and Society*, New York: State University of New York
8 Press.
9 Thiele, L. P. (2006) *The Heart of Judgment. Practical Wisdom, Neuroscience, and Narrative*,
10 Cambridge: Cambridge University Press.
11 Uttal, W. (2001) *The New Phrenology: The Limits of Localizing Cognitive Processes in the Brain*,
12 Cambridge, MA: MIT Press.
13 Varela, F., Thompson, E., and Rosch, E. (1991) *The Embodied Mind: Cognitive Science and*
14 *Human Experience*, Cambridge, MA: MIT Press.
15 Vidal, F. (2009) "Brainhood. Anthropological Figure of Modernity," *History of the Human*
16 *Sciences*, 22(1): 6–35.
17 Vul, E., Harris, C., Winkielman, P., and Pashler, H. (2009) "Puzzlingly High Correlations
18 in fMRI Studies of Emotion, Personality, and Social Cognition," *Perspectives on Psycho-*
19 *logical Science*, 4: 274–90.
20 Ward, S. C. (2002) *Modernizing the Mind. Psychological Knowledge and the Remaking of Society*,
21 Westport, CT: Praeger.
22 Wexler, B. (2006) *Brain and Culture: Neurobiology, Ideology, and Social Change*, Cambridge,
23 MA: MIT Press.
24 Wise, N. M. (2006) "Thoughts on the Politicization through Commercialization of
25 Science," *Social Research*, 73: 1253–72.
26 Young, A. (2012) "Empathic Cruelty and the Origins of the Social Brain," in
27 S. Choudhury and J. Slaby (eds.) *Critical Neuroscience. A Handbook of the Social and Cultural*
28 *Contexts of Neuroscience*, Chichester: Wiley-Blackwell.
29 — (1995) *The Harmony of Illusions. Inventing Post-Traumatic-Stress-Disorder*, Princeton,
30 NJ: Princeton University Press.
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45