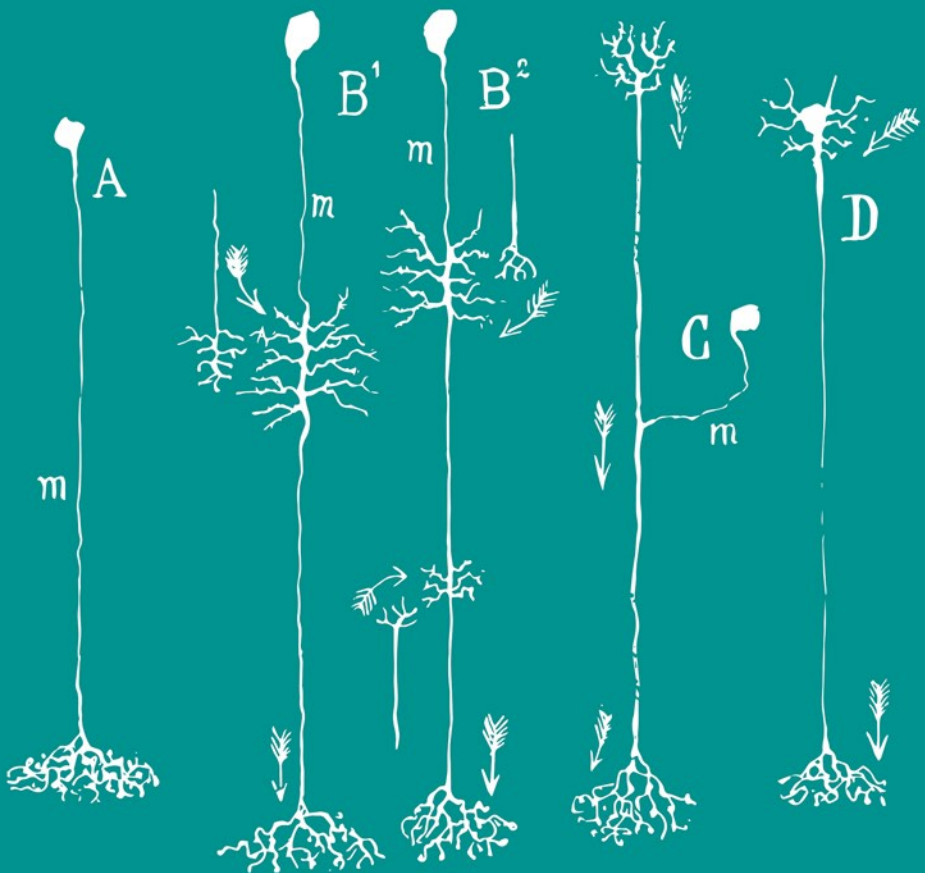


Julian Henneberg

SUBJECTS OF SUBSTANCE

Recent American Literature
and the Materiality of Mind



[transcript] American Culture Studies

From:

Julian Henneberg

Subjects of Substance

Recent American Literature and the Materiality of Mind

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Recent U.S. literature has both been informed by, and critically engaged with, materialist conceptions of selfhood. Over the past decades, disciplines like neuroscience and evolutionary biology have increasingly recast the human self as a malleable construct produced by physiological processes. In a parallel development, literary authors have created their own conceptions of somatic subjectivity in conjunction or contrast with scientific and medical discourses. *Subjects of Substance* examines the forms, functions, and effects of materialist models of mind in selected memoirs and novels. Authors discussed include Michael W. Clune, Don DeLillo, Kay Redfield Jamison, Siri Hustvedt, Richard Powers, Elyn R. Saks, and David Foster Wallace.

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1. Introduction: Materialist Minds

The essence of dignity is the power to order; it is the will. Hence, the attention given to setting out the boundaries between those movements that are simply animal (involuntary) and those expressly human, the fruit of will or reason.

*Georges Canguilhem, La formation du concept du réflexe*¹

The human body is the best picture of the human soul.

Ludwig Wittgenstein, Philosophical Investigations

Minding Matter

In 1641, René Descartes introduced the concept of *res cogitans*—a “thinking thing” or “thinking substance”—into Western philosophy.² In his Second Meditation, he defined mind in opposition to body or corporeal substance (*res extensa*), identifying the self with immaterial, first-person consciousness: “the human mind, when turned in on itself, does not perceive itself to be anything other than a thinking thing” (51).³ Roughly 350 years later, Nobel laureate Francis Crick, famous for his co-discovery of the structure of the DNA molecule, radically revised this conception of consciousness. In his 1994 book *The Astonishing Hypothesis*, he proposed that the self could be described in terms of material entities and processes that could be

1 Canguilhem's work on the formation of the reflex concept has yet to be published in English. The translated quotation appears in Ehrenberg, *Weariness* 7.

2 For the 1647 publication of the *Meditations* in French, Descartes translated the Latin term as “thinking substance” (*substance intelligente*). However, the medieval philosophers from whom Descartes inherited the term “substance” conventionally used it in the sense of “thing” or “object” (Rowlands 10).

3 Richard Rorty argues that with this definition, Descartes effectively “invented” the modern concept of the mind (*Philosophy* 17–69).

observed from an empirical, third-person perspective: “‘You,’ your joys and your sorrows, your memories and your ambitions, your sense of personal identity and free will, are in fact no more than the behavior of a vast assembly of nerve cells and their associated molecules” (3). After three and a half centuries, Descartes’s *res cogitans* was apparently on the way of becoming, quite literally, a *thinking thing*: it was now being equated with the material entity that is the human brain. Prioritizing matter over mind, this reversion of the original Cartesian emphasis abolishes mind-body dualism and treats consciousness as a secondary phenomenon, thus bringing psychic life within the purview of empirical inquiry. In this new materialist paradigm, philosophy finally gives way to science.⁴ Or so it would seem.

Descartes, at any rate, is still frequently cited in current debates—and with good reason: the neuropsychologist Paul Broks writes that the philosopher “released a pack of troublesome dichotomies into the Western way of thinking: mind versus matter; subjective versus objective; observer versus observed,” so that for good or ill, his ideas about mind and body “set the terms of all subsequent debate about the relationship” (137).⁵ However, this is not to say that the terms cannot be reversed. In their 1999 book *Memory: From Mind to Molecules*, cognitive psychologist Larry R. Squire and renowned neuropsychiatrist Eric Kandel⁶ begin their account by inverting the most famous dictum of Cartesian ontology: “It would be more correct to rephrase Descartes’ statement by reversing it to read ‘I am, therefore I think,’” the authors propose, since “all the activities of the mind arise from a specialized part of our body: our brain” (ix). As Liah Greenfield observes, this proposition is expressive of a “fundamentally materialistic view of reality,” which is taken to encompass subjective, mental experience as well as “objective,” physical structures (162). In this view, which regards “all the activities

4 Cromby et al. point out that those considering neuroscience newly relevant to human self-understanding “frequently proclaim a new ‘hard science,’ ‘objective’ or ‘real’ understanding of ourselves” (218). This process of naturalization is often cast as a benchmark in the forward march of scientific progress. “If science can invade everything,” Bruno Latour suggests cheekily, “it surely can put an end to Descartes’ long lasting fallacy and make the mind a wiggling and squiggling part of nature” (“Reality” 9).

5 “If Descartes did not exist we would have had to invent him, for how else could we explain mind’s pernicious representation of itself as an isolated substance,” Claire Colebrook remarks (*Deleuze* 31), and Antonio Damasio suggests that his discussion of the relation between “mind, brain, and body” needs to take place “under the Sign of Descartes, since there was no way of approaching such themes without evoking the emblematic figure who shaped the most commonly held account of their relationship” (*Error* xix; original capitalization). Damasio, in turn, is singled out by Martensen as representative of the current tendency to invoke Descartes as a “bogeyman for something alleged to be lacking in biomedicine’s emotional and/or cultural dimensions” (210).

6 Kandel received the 2000 Nobel Prize in Physiology/Medicine for his research on the physiological basis of memory storage in neurons and is the author of several much noted publications on neuroscience and its relation to neighboring fields like biology, psychiatry, and psychoanalysis.

of the mind” as describable in the materialist terms of modern science (and thus amenable, in principle, to scientific inquiry and intervention), Crick’s *Astonishing Hypothesis* becomes the basis for a new anthropology, personified in the figure of “Neuronal Man” (Changeux).⁷

Of course this figure only appears radically new when placed in opposition to an earlier, ostensibly less materialist situation. What made his hypothesis astonishing, Crick believed, was that despite the advance of the scientific method and its attendant worldview, most people remained Cartesian dualists at heart, identifying themselves with their mental faculties rather than their material constitution.⁸ In common parlance, the self is generally described as coterminous with *interiority*—a realm composed of thoughts, feelings, and memories, to which the body stands in a more or less incidental relation. Hence, Gilbert Ryle’s famous critique of the “official doctrine” of Cartesianism as the “dogma of the Ghost in the Machine” (5; original capitalization). However, if you “are” your mind, which in turn “arises” from your brain, as Squire and Kandel put it, such dualistic differentiation loses its legitimacy. “No matter how immaterial you understand your thoughts to be,” Bill Brown points out, they are the “outcome” of electrochemical impulses or the “effect” of synaptic activity within a neural network, so that one has to conclude that “the process of thinking has a materiality of its own” (49).⁹ Following this line of thought, soma and psyche become integrated, but not equal. The new materialism of the mind also entails a new hierarchization: subjectivity is usurped by materiality; *mind* becomes a function of *matter*.¹⁰

A New Naturalism?

As has often been observed, literature has throughout history fed on, probed into, or implicitly contained philosophies of subjectivity. According to the *OED*, our modern use of the term as “the condition of viewing things through the medium of one’s own mind or individuality,” which is “dominated by personal feelings, thoughts, concerns” derives from Coleridge’s reception of Kant—and thereby

7 See also Alain Ehrenberg’s observation that “the project of the cognitive neurosciences [...] is essentially anthropological, in the sense that it seeks to account for the totality of the human: thinking, feeling, acting” (“Se définir” 70; my translation).

8 Crick proposes that his hypothesis of the neural, molecular self “is so alien to the ideas of most people today that it can truly be called astonishing” (3).

9 While Brown’s use of the terms “outcome” and “effect” implies a rather uncomplicated one-way causality, there is no lack of accounts that view the relation between consciousness and its material substrate (i.e., brain and body) not in unidirectional but in circular terms, such as a feedback loops or Möbius strips. See, for instance, Grosz, *Volatile* xii and Humphrey 184–87.

10 The technical philosophical term for this would be materialistic monism (Greenfeld 163).

attests to the entanglement of philosophical and literary accounts of subjectivity (qtd. in A. Rorty 35). Literary narrative appears intrinsically beholden to the mechanisms and dynamics of identity formation and the forms of social interaction in which they take effect. In a wide range of novels, “existence—and by extension identity—have been predominantly defined in terms of social construction” (Burn, “Mind” 193), while literary authors have continually relied on existing discourses and models of mind for their ideas about psychic life.

As Jonathan Lethem observes, the emergence of “new vocabularies for human perceptual life creates fresh textures in fiction, both particular and universal” (xiv). Therefore, it comes as no surprise that the emergence of a new materialist anthropology should also leave its marks in literature. What is more, there is historical precedent for this dynamic:¹¹ Justine Murison has demonstrated that following the 1840s, the United States saw not only an “unprecedented explosion of interest” in neurology and “the workings and meanings of the nervous system” but also an attendant transformation of conceptions of the self in various popular literatures (30), all of which can be read as aspects of a larger “neurological modernity” (Bentley 247-48). Likewise, at the turn of the nineteenth century, literary naturalism famously codified the findings of its own era’s psychology, evolutionary biology, and social science into narratives of “brute nature,” in which the individual mind struggled against the forces of natural and social history. In this earlier incarnation, naturalism adopts the “somatic style” of nineteenth-century psychology,¹² which sought to link mental processes to the workings of the nervous system. The result is commonly described as inherently deterministic:¹³ “A like determinism,” Émile Zola ventured, “will govern the stones of the roadway and the brain of man” (17).

Today, we are confronted with similar prospects. By “tracing behavior back to the architecture of the human brain or the chemistry of neurotransmitters, instead of to remembered epiphanies or hard lessons learned in love affairs,” our contemporary sciences of the mind could well be seen as eliciting a return to determinism in literary writing, Stephen Burn proposes (“Mind” 194). But is determinism—the

11 See Littlefield and Johnson’s observation that the neuroscientific turn “is historical” and that its adoption by multiple disciplines and discourses, including literature, “is not a novel phenomenon but one with a distinct history” (17).

12 For the concept of “somatic style,” see N. Hale 47.

13 “American literary naturalists, who embraced the Darwinian belief that human beings are products of heredity and environment, were naturally led to descriptions of mind congenial with that deterministic world view” Stephen Brennan remarks in a representative assessment (182). Yet this is not to argue that all naturalist narratives had a narrowly deterministic bent: as Brennan notes, the aim rather was to present an accurate portrayal of the psychic conflict and “struggle for dignity” taking place in human consciousness, a portrayal that was informed by the psychological theories of the day (183).

notion that biology explains human experience, that nature trumps nurture—the only conceivable outcome when the self is understood in terms of physiology and biology? Do we indeed stand on the cusp of a new literary naturalism that deals in neurochemistry rather than heredity and necessarily produces a “medicalization of human experience” (Burn, “Mind” 194)?¹⁴ And are we even justified in assuming that scientific and medical discourses inform literary writing in a unidirectional dynamic that runs “from the lab to literature”?¹⁵

Some signs do indeed point to this possibility. In Jeffrey Eugenides’s 2011 novel *The Marriage Plot*, for instance, free indirect discourse expands from its traditional province, the representation of a character’s consciousness, to include explications of the underlying operations of the nervous system. When the novel’s distraught protagonist, a “lovelorn English major,” notices the restorative powers of nature, this mental movement is conveyed in a biomedical rather than a Romantic register: “In a thin little park she’d never noticed before, Madeleine sat on a bench. Natural opiates were flooding her system and, after a few minutes, she started to feel a bit better” (104). Here, what Patricia Waugh calls the novelist’s “molecular gaze” reveals that neural processes precede and produce the effects of his heroine’s subjective experience. Waugh has suggested that “a new fiction, armed with the insights of the brain sciences, may proceed beyond a talking cure that offers only hermeneutic access to mind,” and if passages like the above are any indication, neurochemical explanations have demonstrably arrived in U.S. literature (“Thinking” 79). What is more, they are being integrated into the form of the novel, which has traditionally been associated less with external and empirical observation of the workings of the body than with the interiority and subjectivity of literary characters—a realm crucially informed by, and often understood in, the terms and concepts of dynamic psychology.¹⁶ But are these two modes of description truly at odds with each other? Does a medicalized view of body and brain invalidate the report of psychologically or spiritually “profound” subjective experience?

14 Here and in subsequent cases, British spellings in quotations are changed to conform to U.S. spelling.

15 Here I am adapting Rose and Abi-Rached’s concept of the “translational imperative”: en route to their social and cultural effects, scientific ideas partake in a “move from the lab to the social world,” a conceptual migration that necessarily entails significant processes of translation and modification (229).

16 To be sure, this description is a better fit for the traditional realist novel than its experimental, avant-garde manifestations, but even the latter have not been immune to the influence of culturally dominant psychological models: “The explosion of psychotherapeutic metaphors into the narrative arts in the twentieth century is so complete and pervasive that it would be hard to overstate” (Lethem xiv). On the influence of therapeutic discourse on twentieth-century and contemporary culture, see Illouz.

This question, too, was already being asked at the beginning of the twentieth century. In “Religion and Neurology,” the first lecture in *The Varieties of Religious Experience*, William James coined the phrase “medical materialism” to describe the dismissal of religious emotions as organically conditioned.¹⁷ James rejected this mode of explanation, since in his view, “we know that, whatever our organism’s peculiarities, our mental states have their substantive value as revelations of the living truth; and we wish that all this medical materialism could be made to hold its tongue” (“Religion” 24). Recently, James’s wish has been reiterated by literary critic Marco Roth, who put forth a strongly worded polemic against a new naturalism in literature with his tellingly titled article “The Rise of the Neuronovel.”¹⁸ Roth’s essay provides a fitting introduction to the concerns of my project, since it opens up a line of argument that I would like to question and complicate.

Marco Roth’s “The Rise of the Neuronovel”

In “The Rise of the Neuronovel,” Roth claims that in recent years, “the novel of consciousness or the psychological or confessional novel—the novel, at any rate, about the workings of a mind—has transformed itself into the neurological novel, wherein the mind becomes the brain” (n. pag.). Listing as evidence a number of Anglophone novels ostensibly “about” neurological disorders, Roth looks for the reasons behind this paradigm shift. These he identifies in the exhaustion of the linguistic turn and the declining prestige of Freudian psychoanalysis as well as in the concomitant strengthening of biologicistic, materialist, and reductionist explanatory models.¹⁹ Since the nineties—the decade by which psychotropic drugs had indisputably “arrived” in psychiatric practice as well as mainstream culture—Americans could consider themselves in the presence of a “new reduc-

17 James’s view that medical materialism leads to *reductio ad absurdum*, that it “finishes up Saint Paul by calling his vision on the road to Damascus a discharging lesion of the occipital cortex” (“Religion” 24), has a precursor in Hegel’s rejection, in the *Phenomenology of Mind*, of the scientific “formalism” of *Naturphilosophie*, which “takes the shape of teaching that understanding is electricity, animals are nitrogen [...] and so on” (31).

18 The title of Roth’s essay alludes to Ian Watt’s classic study *The Rise of the Novel*, which also relates the emergence of a new literary form to a change in the intellectual and social milieu of its time. Thus Roth’s title implies that a similar epistemic shift might be at hand today.

19 Roth is certainly not alone in linking the waning allure of “relativistic” poststructuralist and postmodern modes of criticism to the rise of methods modeled on the “hard sciences.” See for instance Claire Colebrook’s description of “a series of turns to ‘affect,’ ‘life,’ ‘matter’ or ‘the brain’—all of which would be *after* theory or after the linguistic turn” (“Vitalism” 31; original emphasis), or Patricia Waugh’s caustic comment that “the obituaries for postmodernism had hardly been written when the arrival of cognitive neuroscience was loudly proclaimed” (20).

tionism,” identifiable by two main properties: “it explained proximate causes of mental function in terms of neurochemistry, and ultimate causes in terms of evolution and heredity” (n. pag.).²⁰

This “new reductionism” now haunts contemporary literary production as the imperialism of psychoanalytic language once haunted Western culture, Roth suggests,²¹ and though it might appear like a limited phenomenon, its rise bodes ill for literary culture as a whole. In a devil’s bargain, novelists are surrendering what should be their core competence—the intricate rendering of the complexities of human psychology—in exchange for often poorly understood scientific theories, in the hopes of borrowing from science the status and credibility they themselves are shedding rapidly in today’s digital age (“a world of giant publishing conglomerates and falling reading rates,” Roth helpfully explains). In the process, literature is robbed of its defining characteristics. Novelists have “ceded their ground to science,” in this reading, for fear of cultural irrelevance: “the neuronovel tends to become a variety of meta-novel, allegorizing the novelist’s fear of his isolation and meaninglessness, and the alleged capacity of science to explain him better than he can explain himself” (Roth, n. pag.).

Books about brain science thus become the heralds of a culture in which “morality, society, and selfhood”—a triad presented by Roth as the rightful domain of literature—no longer fall within the unifying purview of the novel. Instead, they are fragmenting into “the property of specialists writing in the idioms of their disciplines” (n. pag.). But the neuronovel is not only a symptom of cultural change; it is also a cultural force in its own right, promoting a climate of desemanticization (because in contrast to a psychological symptom, a neurological symptom

20 Despite my disagreement with his argument, my study largely adopts Roth’s periodization. “More may have been learned about the brain and the mind in the 1990s [...] than during the entire previous history of psychology and neuroscience,” Antonio Damasio suggests (“Brain” 4). For support of the notion that the advent of current materialist paradigms of the psyche can be dated to the nineties (or, as some would argue, the late eighties) and coincides with the mass-marketing of psychiatric drugs, see Angell, “Epidemic” and “Illusion.” See also Ehrenberg, who suggests that the “neurochemical practices of self-fabrication” surrounding psychopharmaceuticals, drugs, and doping prepared the ground for the contemporary figure of the “cerebral subject” (“Le sujet” 147; my translation), as well as Rose and Abi-Rached, who date the inception of neuroscience as a research program to the sixties but also note that that the field truly begins to consolidate itself in the nineties, when “the history of neuroscience becomes a kind of subdiscipline in its own right” (29).

21 The essay’s subtitle reads, “A specter is haunting the contemporary novel,” by which Roth references an earlier critique of reductionism: in 1949, Lionel Trilling wrote that “[a] specter haunts our culture—it is that people will eventually be unable to say, ‘They fell in love and married,’ let alone understand the language of *Romeo and Juliet*, but will as a matter of course say ‘Their libidinal impulses being reciprocal, they activated their individual erotic drives and integrated them within the same frame of reference’” (285).

is presumed to be essentially devoid of meaning) and depoliticization (because individual and social dysfunction become objects of medical rather than political intervention). “By turning so aggressively inward, to an almost cellular level, this kind of novel bypasses the self, let alone society, or history, to arrive at neurology,” Roth argues (n. pag.). To sum up: in training their sights on the organic and the (literally) cerebral, contemporary authors administer their own abolition as cultural arbiters, and trivialize literature in the process.

A Critique of Roth’s Critique

Even if one is sympathetically disposed to critiques of vulgar bio-materialism as a heuristic for literary and cultural history (after all, resisting or subverting “biologistic” explanatory approaches has long been one of the central tenets of the humanities), one cannot but note that Roth’s analysis leaves something to be desired.²² In what follows, I will draw attention to some of the problems of Roth’s argument and outline how to avoid or correct them in my own readings.

To begin with, it is far from settled that psychological and neurological descriptions necessarily have to be at odds with each other. Not only is it conceivable that the former could coexist with the latter in a given literary text; it is also likely that instead of the wholesale displacement of dynamic, or “depth” psychology by neo-naturalist paradigms, we might be witnessing the emergence of a complementary rather than a competing method of accounting for the subjective experience and objective behavior of human beings.²³ In other words, it is not at all plausible that there should exist something like a “pure” neurological novel; nor is there reason to conceive of the literary sphere as a zero-sum game in which a new development can occur only at the cost of other, i.e., older forms.

Going further, one might also question the conceptual distinction between psychological and neurological descriptions itself, which effectively perpetuates mind-body dualism by neatly assigning ideational characteristics to the former and materialist characteristics to the latter, as if one excluded the other. But even psychoanalysis—Roth’s prime example for the kind of discourse of deep interiority he deems at risk of being displaced—cannot unproblematically be placed on

22 On the anti-biologistic bias of the humanities, see Elizabeth Wilson, who, with a view toward feminist scholarship, laments “a theoretical scene that is bent instinctively toward correcting, reversing, or resisting the forces of biological reductionism”—a comment that also applies to the wider realm of cultural studies (*Psychosomatic* 3).

23 See Ortega, who notes that the “psy complex,”—the entirety of discourses that operate with the assumption of a “deep” interior psychological space—has not been replaced altogether: “rather, it coexists more or less harmoniously with new ways of acting, thinking and speaking about ourselves as corporeal, somatic selves” (*Corporeality* 81).

the “immaterial” side of the mind-body divide. For Roth’s claim that the novel as an art form “makes most sense not from a neurological standpoint, but under the lens of an old-fashioned Freudian interpretation,” this “old-fashioned” hermeneutical tradition would have to be categorically separated from neurology (n. pag.).

This, however, seems impossible. After all, from Freud’s early neuroanatomical studies and his *Project for a Scientific Psychology* to his admission that some forms of actual neurosis [*Aktualneurose*], like neurasthenia, might be due to “direct somatic consequences of sexual disturbances” rather than symbolically codified mental experiences, Freudian psychoanalysis has never been solely concerned with the exclusively psychological—if such a thing even exists (*Project* 388; original emphasis). In fact, some of the most fundamental assumptions of psychoanalytical theory, like its attention to excitatory and inhibitory impulses or psychosomatic symptoms, suggest that Freud’s theory should be understood not merely in terms of psychogenic phenomena but also as the product of a materialist (and yes: neurological) imaginary.²⁴ This much, at any rate, has been suggested by Robert Solomon, who insists on Freud’s “materialist moorings,” (“Neurological” 25), by Thomas Nagel, who unambiguously asserts that Freud “was a materialist” (“Anthropomorphism” 11), and by Elizabeth Wilson, who contends that glimpses of Freud’s materialist imaginary should not be dismissed as regressive remnants of an abandoned physicalist approach, since “these moments of biological reduction often produce Freud’s most acute formulations about the nature of the body and the character of the psyche” (*Psychosomatic* 3).

This observation can be extended to other areas of investigation: by itself, the mere inclusion of discourses that attend to neurological embodiment and the material substrates of human consciousness does not automatically render a given text epistemologically short-sighted or aesthetically inferior.²⁵ Fear of

24 In an essay on Freud’s materialist allegiances, William Gass notes that for the early Freud, “[p]sychic processes had to be regarded as quantitatively determined states of specifiable material particles,” and suggests that this commitment might have been more durable than commonly supposed: “As his work went on Freud found it increasingly difficult to retain his quantitative materialism in undiluted form, but [...] although he weaseled and he waffled, although dualisms bent him and mentalisms encouraged another language, at least every other heartbeat was for the work he set aside and never published, the ‘Project for a Scientific Psychology,’ and that his later romance with destruction and death is a disguised return to the old and drier flame” (221-22).

25 As Paul Giles observes, “it is by no means the case that an emphasis on the body in itself indicates the rejection of any kind of theoretical compass (“Afterword” 210). Neither should materialist accounts of the mind be regarded as inherently irreconcilable with the tenets of critical theory: Victoria Pitts-Taylor notes that scholars like Catherine Malabou, Elizabeth Wilson, and Andy Clark view the “new biology” of neuroscience as a potential “material grounding for views of the self that are politically progressive—postmodern, plural, queer, unfixed, open to change, always unfolding, and even potentially libratory” (“Social Brains” 173).

reductionism looms large in Roth's rhetoric, but before setting out to combat or dispel reductionist ideas, one may want to make sure that there is good reason to do so. While it may be true that by incorporating biomedical research, contemporary authors run the risk of foregoing the play of signification and interpretation in favor of clear-cut diagnosis, such claims would still have to be evaluated on a case-by-case basis. Allying that any and all literary texts interested in materialist explanations are a priori complicit with a pernicious reductionism that precludes linguistic meaning and experimentation alike would not seem like a promising method of determining how neo-naturalist tropes actually function within these texts.

Furthermore, one can take issue with the rhetorical sleight of hand by which Roth equates the "the novel of consciousness or the psychological or confessional novel" with the novelistic form *per se*. When Roth writes that the neuronovel attests to "the defeat of the metaphoric impulse" and that "mere biological contingency has a way of repelling meaning," the implication is clear: medical materialism is bad for literature, because literature is (or, in a normative prescription, *should be*) the domain in which social, political, and personal phenomena are represented in an allegorical operation that yields "the pleasure of finding the general in the particular" (n. pag.). One hardly needs to point out that this is an extraordinarily narrow understanding of the novel, albeit one that possesses a long and eminent tradition and continues to exert considerable influence, not least via its implementation in modern-day creative-writing programs and workshops.²⁶

To consider, as Roth does, literary texts' investment or interest in the materiality of mental life as inimical to "the informal psychological explorations of novelists" is to posit two untenable assumptions at once: first, that psychology is irreconcilable with materialism; second, that the novel is primarily characterized by psychological realism. Since I would like to discuss different genres and modes of writing and look beyond the already much-discussed rift between the material and the mental to possible syntheses between the two, my analysis will attempt to avoid such conceptual presuppositions. After all, it may well be the case, as one commentator on Roth has proposed, that the turn to neuroscience "indicates with equal measure that the novel remains a record of human experience and society—and [that] neuroscience, in recent decades, has developed a set of compelling accounts of what human experience might consist of" (McAuley, n. pag.).

Finally, by classifying a plurality of texts under the (ultimately derogatory) rubric of the neuronovel, Roth produces homogeneity where one could also find

26 For a classic account placing psychological, realist fiction at the beginning of the novelistic tradition, see Watt; for a survey of the history and influence of modern MFA programs, see McGurl, *Program*.

diversity. To be sure, the texts chosen by Roth share certain formal features.²⁷ For one thing, they all produce what one might call a stable fictional world, in which the diegetic reality of the text remains largely undisturbed by metafictional operations, a world that largely conforms to the demands of conventional novelistic presentation. However, chances are that their grouping owes more to Roth's Platonic ideal of *The Novel* than to genuine family resemblances. A highly experimental text like *Infinite Jest* for instance, which is undeniably shaped by the "modernist impulse" whose absence Roth laments, certainly has to be counted among the contemporary works that engage with materialist paradigms of the mind. What is more, Roth does unto his textual examples what he wishes they had not done unto the psychological novel. "Neuronovels" allegedly flatten out psychological depth into superficial symptomatology and reduce the complexities of the social world to the terminology of biomedical diagnosis, yet their denunciation by Roth follows the same logic: analysis is foreshortened and (aesthetic, intentional, and contextual) complexity sacrificed in favor of unambiguous classification.

If I am reading an apologist for symptomatic reading symptomatically here myself, I am doing so in the hopes of drawing attention to the impossibility of maintaining cut-and-dried categories and neat characterization in the realm of literature. While I am wholly sympathetic to the claim that terms like "neuronovel," "new materialism," "new vitalism," "neo-naturalism," "biomedicalization," or "neurochemical selves"²⁸ fulfill important functions in that they enable us to pinpoint a quality of contemporary discourse that might otherwise elude us, I also believe that in the transposition of cultural analysis to literary study, it is imperative not to lose sight of the singularity of the aesthetic object and its specific modes of functioning. In what follows I will therefore attempt to keep these two aspects—the macro level of scientific, institutional, cultural, and epistemological contexts and the micro level of aesthetic, textual, thematic, and formal characteristics—in view simultaneously. Like Roth, I will trace out the permutations of literary writing under the sign of materialist models of mind, but unlike him, I do not assume that we can already comfortably agree on what these models consist in, what functions they serve, or what consequences they entail. Rather, my analysis will operate under the assumption that new materialist discourses can be put to use in ways that are absolutely contingent on their respective contexts, and that

27 The texts Roth cites are Ian McEwan's *Enduring Love* and *Saturday*, Jonathan Lethem's *Motherless Brooklyn*, Mark Haddon's *Curious Incident of the Dog in the Night-Time*, Richard Powers's *The Echo Maker*, Rivka Galchen's *Atmospheric Disturbances*, and John Wray's *Lowboy*, a list that through Roth's "quite influential" article has acquired the status of a "micro-canon" for scholars of "brain-based literary studies" (Burn, "Neuroscience" 213, 211).

28 See, in that order, Roth, A. Johnston, Colebrook ("Vitalism"), Kelleter, Clarke et al., and Rose ("Becoming"; "Neurochemical"; "Anomalies").

each literary text that invokes them needs to be encountered and examined on its own terms.

Materialist Minds in Literature: Other Accounts

This is not to say that singularity rules supreme and we have to surrender all hope of finding an analytical scope capable of uniting a group of literary texts for the purpose of scholarly research and description. In fact, even though Roth overshoots the mark in constructing the neuronovel as a unified phenomenon with homogeneous functions and effects, his general observation holds true: one can indeed observe a distinct tendency in recent American literature to address what Roth calls the “new medical-materialist world” and come to terms with the research programs of neuroscience, evolutionary psychology, cognitive science, and pharmaceutical psychiatry, which strive toward a redescription of human psychic life in terms of material processes and physically observable entities (n. pag.).

In recent years there have been a number of attempts to grasp this phenomenon analytically, resulting in publications that discuss the “neurological novel,” “neuronarrative,” “cognitive fictions,” the “syndrome novel,” the “naturalistic turn” in literature, or the displacement of agency from human persons to “sentient things.”²⁹ As Stephen Burn has argued, literary authors draw on scientific research “in part to incorporate neuroscience’s ability to address questions at an explanatory level—of the species, or of human history—that postmodern epistemological critiques had denied to other discursive forms” (“Mapping” 47). Consequently, the “neuroscientific turn” (Littlefield and Johnson) would have to be contextualized as part of the still only incompletely theorized “intimations of a new order” that is succeeding postmodernism (Hoberek 241). Yet there exists no unproblematic relation between post-postmodernism and a new materialism of the mind, not least since “those who reject postmodernism often blame cognitive science and neo-Darwinianism for the decline of a humanist conception of interiority” (Waugh, “Turn” 20). Furthermore, this newfound interest in the biological and physical side of subjectivity is not restricted to academic scholars. Literary authors—even those formerly identified as postmodernist—also appear increasingly aware of this shift toward a “somaticization of the subject” (Groves 264). This is evidenced by publications like Paul Auster’s recent *Winter Journal*, a memoir dedicated to an examination of “what it has felt like to live inside this body,” which Auster bills as a “catalogue of sensory data” and a “*phenomenology of breathing*” (1; original emphasis).

29 See, in that order, Thrailkill, G. Johnson, Tabbi (*Cognitive*), Burn (“Mapping”), Waugh (“Turn”), and Chodat.

On the academic side, one can identify the scholars who have provided the most substantial examinations of this phenomenon. T. J. Lustig and James Peacock's 2013 collection *Diseases and Disorders in Contemporary Fiction: The Syndrome Syndrome* gathers contributions from literary critics as well as researchers in psychiatry and neuroscience to discuss literary writing that betrays a "preoccupation with neurological conditions" and attests to a view of the self as "bound up in any number of complex systems, [...] largely determined not by its choices or its past, but by the very cells with which it becomes aware (or ceases to be) or by its own conditioning," as the editors phrase it in their introduction (1, 10). The volume goes a long way toward a systematic examination of what Roth's polemic dismisses rather glibly, providing in-depth analyses of individual texts like Richard Powers's *The Echo Maker*, overviews of postmodern fiction's engagement with neurological themes (Burn, "Mapping") and speculations about the turn to neo-naturalist discourses (Waugh, "Turn") as well as annotated bibliographies of primary and secondary materials.

Stephen Burn, one of the contributors to this anthology, can be singled out as perhaps the most active analyst of recent American fiction's materialist tendencies. Apart from his article in *Diseases and Disorders*, Burn has published extensively on the role that "science of mind" plays in contemporary fiction.³⁰ Like Lustig and Peacock's collection, Burn's work can function as a corrective to Roth's editorializing, as it suggests that materialist scientific discourses do not automatically force authors down a path of determinism and reductionism. Instead, Burn points out, such discourses should be viewed as a rich resource that provides writers with resonant tropes and ideas that fuel rather than impoverish the literary imagination—a critical stance with which it becomes possible, for instance, to delineate how in *Great Jones Street*, DeLillo's interest in neurophysiological structures "subtly underwrites the book's psychological investigations, literary strategies, and overall architecture" (Burn, "DeLillo" 350).

While the publications by Lustig/Peacock and Burn are commendable for their attempts to discuss literature's engagement with scientific and medical accounts of mental life in a more nuanced fashion, they by no means exhaust the subject. Focusing exclusively on the titular "diseases and disorders" of neurology and psychiatry, Lustig and Peacock investigate a crucial aspect of the new materialist paradigm. However, in limiting their approach to pathological phenomena, they exclusively follow what Rose and Abi-Rached call "the path through madness," which is but one way to arrive at the "new style of thought" identified by these

30 Since Burn also discusses Don DeLillo, David Foster Wallace and Richard Powers, his publications are of great interest for my purposes and will be frequently referenced throughout the present study.

authors as the molecular-materialist approach (31, 30).³¹ In other words, neuroscience and psychiatry are not the only fields operating with and feeding back into a contemporary materialist imaginary. To this list can be added other discourses and disciplines like genetics, evolutionary biology and psychology, sociobiology, behaviorism, cognitive science, some strands of the philosophy of mind, as well as a number of monist and vitalist philosophies and their contemporary appropriations. As we will see, one should also mention the increasingly vocal proponents of alternative “materialisms,” based on phenomenological and pragmatic traditions and systems theoretical approaches, which shift the emphasis from the strictly cognitive and cerebral to more holistic notions of embodied and embedded interaction.

If Lustig and Peacock’s collection thus only manages to illuminate a partial aspect of the broader phenomenon I am concerned with here, the books and articles by Stephen Burn remain limited for other reasons. In his attempts to trace out a “cognitive revolution” in American literature (“Mapping” 43), Burn does manage to cover a variety of materialist “sciences of mind,” from the proto-behaviorist philosophy of Gilbert Ryle to neuroscientist David MacLean’s model of the triune brain, but in the end this project remains fragmentary due to its distribution over several discrete investigations.³² Having examined Jonathan Franzen’s critique of “materialist explanation of selfhood” (*Franzen* 26) or the function of optical theory in Don DeLillo (“Mind” 195-200), and announced but not yet published a monograph on the American novel in the age of neuroscience, Burn still has to provide a comprehensive account of the role of new materialist ideas in literary fiction that expands the scope beyond its individual manifestations.

Research Assumptions and Questions

The present study represents an attempt to fill these lacunae and examine not merely the occurrences and sources but, more centrally, the *forms and functions* of materialist tropes and theories of the mind (including, but not limited to the realm of neuroscience) in recent American writing (including, but not limited to the realm of the novel). If, as Julian Murphet suggests, a materialist view of the mind arguably “represents the greatest challenge to representations of the subject, the self, since Freud,” then we may wonder whether its influence on literature

31 Rose and Abi-Rached specify that one can also write the history of neuroscience by taking either “the path through the nerves” or “the path through the brain” (31).

32 For Burn’s analysis of the deployment of MacLean’s model in literary fiction, see “DeLillo,” “Mapping,” and his interview with Richard Powers; for his account of the influence of Gilbert Ryle on *Infinite Jest*, see his *Reader’s Guide*. The term “sciences of mind” is Burn’s.

might prove similarly transformative, and “what artistic representation is going to make of the figures of subjectivity fashioned by neuroscience” (189, 193). Accordingly, the analytical focus of this project will be on the question of how “materialist minds” modify literary conceptions and productions of subjectivity. Throughout my study, I use the term “materialist minds” to refer simultaneously to the reconceptualization of the mind in biological, material terms and to the theorists whose materialist ideas are fueling this effort. Denoting both materialist philosophies and materialist philosophers, its double meaning encompasses fictional characters who personify subjecthood recast in materialist terms as well as historical persons—scientists, doctors, theorists, authors—who subscribe to, or engage with, a materialist reconfiguration of the self.

That *some* kind of reconfiguration of a “traditional” understanding of the human subject might occur in these texts is to be expected. As Patricia Waugh argues, “the liberal self is challenged in all its shibboleths by the molecular revolution” (“Thinking” 80), and there is widespread agreement that recently developed materialist accounts of the mind have a direct bearing on the constitutive components of the category of the human, such as agency and free will.³³ As Lustig and Peacock point out, there is a great deal at stake in this question, “not least whether we still believe in an autonomous subjecthood and a liberal understanding of individual responsibility” (10). In her ethnographic study of the training of American psychiatrists, the psychological anthropologist Tanya Luhrmann writes: “biodynamical and psychodynamic approaches nurture two very different moral instincts.” Ultimately, she argues, it matters a great deal whether a society views mental illness as an organic or a psychogenic phenomenon, because each perspective “affects our moral instincts about what it is to be human” (*Minds* 23, 266). Wary of assigning ontological reality to either the psychodynamic/humanistic or the biomedical view, Luhrmann describes these different approaches to the psyche as “lenses” that not only represent but also construct the objects they disclose: “Lenses are important; they enable us to see. But when we use this metaphor to describe how we come to understand one another, we must remember that lenses, while necessary, are a distortion, for humans always slip away from the clarity we impose on them” (*Minds* 23-24).

We might do well to heed this reminder and think of the materiality of mind not as a newly proven fact but, employing a visual metaphor, as a perspective; or, employing a linguistic one, as a narrative or trope. Accordingly, in their work on the “cerebral subject,” Ortega and Vidal emphasize that they wish the term to be

33 “In the past two decades, the brain has become a space where people look to answer a huge range of questions, and even to shape the kinds of questions we ask, about ourselves,” Victoria Pitts Taylor observes in a typical assessment, adding: “The stakes are high: at issue is our understanding of what it is to be human” (“Social” 172).

understood as referring to an “*anthropological figure* that embodies the idea that the human being is essentially reducible to his or her brain” (“Mapping” 255; my emphasis). In the following, I, too, will treat the claims that are being made by, or on behalf of, “materialist minds” not as facts, but as *ideas* about being human—ideas that acquire meaning through their expression in language.³⁴ As Ian Hacking suggests, “[i]t is inept to talk of ‘mind’ and ‘matter’ in the first place, when we are talking about people, but if we do, mind and matter are *different ways of describing our experience*” (“Cartesian” 158; my emphasis).³⁵

Even if one grants the supposition that the medical-materialist perspective is supplanting the psychodynamic-humanistic view, there is still disagreement over the consequences of this shift. Depending on their source, contemporary accounts of the materiality of the mental can take on different valences, from cautious optimism to dystopian alarmism. For every voice that welcomes the chance to enrich existing discourses and debates, a warning is sounded about the dangers of reductionism or determinism.³⁶ In the former view, the influx of new materialist ideas does not allow for foregone conclusions; in the latter, their increasing influence announces a full-blown crisis of the human subject. Little wonder that hard-line positions like eliminative materialism, which endorses the idea that “our commonsense conception of psychological phenomena constitutes a radically false theory [...] that will eventually be displaced [...] by completed neuroscience” (P. Churchland 67) provoke equally uncompromising rebuttals denying the possibility that materialist inquiries might prove successful or questioning the very legitimacy of their methodological assumptions. Thus a number of researchers in the humanities and the sciences have called for a “reality check” of the claims made by or on behalf of materialist models of mind, thereby ushering in the study of “critical neuroscience” (Choudhury and Slaby 6). In terms of complexity, science journalist John Horgan notes, “particle physics is a child’s game [...] compared to neuroscience,” so that “[w]hen it comes to the human brain, there may *be* no unifying insight that transforms chaos into order” (261; original emphasis). Horgan is

34 On this point, my position is aligned with Davi Johnson Thornton’s conception of the “rhetorical brain,” a term Thornton uses to describe “the unique ways we conceptualize the brain in contemporary culture” and to emphasize that the brain is not a stable concept but rather “contingent on numerous social, political, and scientific factors (3, 27).

35 This view is shared by Roger Scruton, who draws our attention to the seemingly unbridgeable gap between “two distinct ontologies of the human condition, one about brains and bodily behavior, the other about people and their acts” (“Neurononsense” 347).

36 Often, these conflicting voices can even be heard within the same article. See Cromby et al., who, shortly after mentioning “the *potentials*” that the neurosciences harbor for studies of subjectivity, qualify that they “can still unleash the interdependent problems of essentialism, determinism, decontextualism and reductionism” (219-20; original emphasis). Typical criticisms of neuroscientific perspectives as reductionist can be found in Ehrenberg, Martin, and Pitts-Taylor.

joined by a host of fellow “neuroskeptics,”³⁷ the most prominent of which is physician and philosopher Raymond Tallis, whose 2012 book *Aping Mankind* diagnoses large parts of the scientific community with “Darwinitis” and “neuromania” and summarily dismisses attempts at materialist reduction of behavior and experience.

While the high stakes and heated exchanges of this debate make for fascinating reading material (and, ideological blinders aside, one can find intriguing positions and ideas on both sides), it is apparent by the sheer vigor of the participants that the fundamental point of contention is a question that has been at the center of literature and humanistic inquiry—and indeed of American literature and American Studies—for a long time: the question of the abilities and limitations of the subject.³⁸ Manfred Frank suggests that since the subject has been pronounced dead in the wake of Heidegger, Wittgenstein, and structuralism, brain research “has, in its own way, taken up this topic again” (“Mensch” 52; my translation). This is confirmed by even a cursory survey of recent publications, which ponder the question whether brains can double as subjects (Krüger), ask, “How did we become neurochemical selves?” (N. Rose, “Neurochemical” 46), discuss “self-making and the brain” (Martin), or attempt to map the “cerebral subject” (Ehrenberg; Ortega and Vidal).³⁹

Clearly, the proposed materialist transformations of subjectivity spark a search for answers, and as soon as we shift the focus to literature, more questions appear. How, and why, we might ask, do these ideas enter literary production, and how do literature and “materialist minds” mutually transform each other? What happens to terms like personality and character, which arguably are central to humanist inquiry as well as traditional literary study, when the self is understood as a mere epiphenomenon of materiality, and how does the literary representation of consciousness change when it is reconsidered as a biological phenomenon? Do texts that engage with the new materialism of the mind share certain assumptions about the nature of the self, in the same way that earlier traditions did?⁴⁰ After all, literary history has traditionally established strong correlations between philosophy and psychology and literary form. If modernism drew on psychoanal-

37 See, for instance, Nagel; Choudhury and Slaby; Legrenzi and Umiltà; Satel and Lilienfeld.

38 “Social scientists and interpretive theorists of culture have struggled with the ‘mind-body problem’ since the inception of the human sciences,” William Connolly reminds us (67).

39 For German contributions to the debate surrounding neurological subjectivity see Krüger as well as Beckermann.

40 By way of example, I am thinking here of the ways in which (generally speaking), realism dramatized the divide between the private and the public self, modernism emphasized the phenomenological subjectivity of experience, and postmodernism deconstructed and dispersed the unified subject.

ysis,⁴¹ and postmodernism on poststructuralism and deconstruction,⁴² do we now see a new kind of writing that corresponds to a newly dominant medical materialism? If so, what affordances does the new paradigm provide for authors, and what effects does it have on literary forms and aesthetics?

Thesis

In what follows, my study will advance the thesis that recent American writing has increasingly been producing its own configurations of the simultaneously problematic and productive tensions between subjectivity and materiality. If U.S. literature is “reacting to” what some consider a new materialism, it does not do so in a manner that should be understood in terms of a simplistic model of pre-existing cultural reality and subsequent literary response, but rather through mechanisms of incorporation, transformation, and performance. I argue that the texts under consideration do not simply reiterate scientific and medical theories of subjectivity (though they are certainly aware of them); instead they develop their own, often alternative, conceptions of “materialist minds,” and—a crucial qualification—they do so by means of aesthetic processes. By producing literary versions of the biological, neurological, or otherwise materially embodied subject, these texts put epistemological theories in the service of aesthetic efficacy, and vice versa. The issue of the biological basis of self thus figures not only as a theme but is also translated into a poetological problem. In making this claim, I am therefore not carrying over philosophical and ethical questions into the disinterested realm of the aesthetic but rather pursuing a question already inherent in my objects of study: as a general rule, the texts I discuss signal their curiosity about the place of the self in a biomedical-materialist imaginary in thematic as well as in formal terms.

41 See, for instance, Maud Ellmann's disentanglement of the strands of technology, literature and psychoanalysis in modernist “nets of meaning” (9), or Steven Frosh's assessment of psychoanalysis as an “emblematic modernist discipline” (116).

42 The three movements are seen as intimately interrelated to such a degree that there has been some conceptual confusion, as Hans Bertens notes: “For a good many, mainly American critics, French poststructuralism and its American deconstructionist offshoot are practically identical with postmodernism” (16).

Structure and Method

My study will trace the emergence of “materialist minds” in U.S. literary production across generic boundaries and through its temporal development. Since it is predicated on a number of ambiguous terms and concepts, most importantly the relation between mind and matter, the analytical part of the dissertation is prefaced by a discussion of central terminological questions. Here I preview a number of concerns that will be of interest throughout the subsequent readings and explain how I intend to use or not to use certain key terms and concepts.

The textual analyses begin with a discussion of “neuro-memoirs,” i.e., autobiographical texts focusing on the relation between subjectivity and the nervous system in the context of medical, or medicalized, conditions. This chapter introduces the relation between the new medical materialism, conceptions of subjectivity, and narrative forms.⁴³ Since terms like the “cerebral subject” or the “neurochemical self” figure prominently throughout my study, this section also serves to highlight the existential dimensions of these rather abstract concepts, giving voice to those most directly affected by the epistemic and ethical transformations that a new biomedical paradigm produces.

Shifting the focus from non-fiction to fiction, the subsequent three chapters follow the implementations and transformations of the “materialist minds” motif chronologically through novels by Don DeLillo, David Foster Wallace, and Richard Powers. This body of texts has been selected for thematic coherence and continuity: not only have these authors produced the most interesting and intensive treatments of “materialist minds” in recent U.S. fiction; they are also linked in an aesthetic tradition that sees both Wallace and Powers building upon the work of DeLillo. The three chapters, each of which is dedicated to one of the three authors, examine the cultural contexts and scientific sources of their work, analyze how the underlying discourses shape the texts in question, and discuss what functions they serve.

43 Considering what he, following Marco Roth, calls “neuronovels,” i.e., texts that address “the confounding gap between what we’re learning about the physiology of the brain and the various forms of immaterial experience that emerge from it,” Jason Tougaw has suggested that “the ‘brain memoir’—or autobiographical account of neurological difference, disease, injury, or experience—is the genre’s closest living relative” (“Touching” 337, 339).