If Materialism Is True, the United States Is Probably Conscious

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February 8, 2013

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Abstract:

If you're a materialist, you probably think that rabbits are conscious. And you ought to think that. After all, rabbits are a lot like us, biologically and neurophysiologically. If you're a materialist, you probably also think that conscious experience would be present in a wide range of naturally-evolved alien beings behaviorally very similar to us even if they are physiologically very different. And you ought to think that. After all, to deny it seems insupportable Earthly chauvinism. But a materialist who accepts consciousness in weirdly formed aliens ought also to accept consciousness in spatially distributed group entities. If she then also accepts rabbit consciousness, she ought to accept the possibility of consciousness even in rather dumb group entities. Finally, the United States would seem to be a rather dumb group entity of the relevant sort. If we set aside our morphological prejudices against spatially distributed group entities, we can see that the United States has all the types of properties that materialists tend to regard as characteristic of conscious beings.

Keywords: metaphysics, consciousness, phenomenology, group mind, superorganism, collective consciousness, metaphilosophy

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If *materialism* is true, the reason you have a stream of conscious experience – the reason there's something it's like to be you while there's (presumably!) nothing it's like to be a toy robot or a bowl of chicken soup, the reason you possess what Anglophone philosophers call *phenomenology* – is that the material stuff out of which you are made is organized the right way. You might find materialism attractive if you reject the thought that people are animated by immaterial spirits or possess immaterial properties.[1]

Here's another thought you might reject: The United States is literally, like you, phenomenally conscious. That is, the United States, conceived of as a spatially distributed, concrete entity with people as some or all of its parts, literally possesses a stream of conscious experience over and above the experiences of its members considered individually. In this essay, I will argue that accepting the materialist idea that you probably like (if you're a typical early 21st-century philosopher) should draw you to accept some group consciousness ideas you probably don't like (if you're a typical early 21st-century philosopher) – unless you choose, instead, to accept some other ideas you probably ought to like even less.

The argument in brief is this. If you're a materialist, you probably think that rabbits have conscious experience. And you ought to think that. After all, rabbits are a lot like us, biologically and neurophysiologically. If you're a materialist, you probably also think that conscious experience would be present in a wide range of naturally-evolved alien beings behaviorally very similar to us even if they are physiologically very different. And you ought to think that. After all, to deny it seems insupportable Earthly chauvinism. But, I will argue, a

[1] For purposes of this essay, I'm going to assume that we know, at least roughly, what "material stuff" is. I recognize that this assumption might be problematic. Discussions include Montero 1999; Chomsky 2009; Stoljar 2010.

materialist who accepts consciousness in weirdly formed aliens ought also to accept consciousness in spatially distributed group entities. If she then also accepts rabbit consciousness, she ought to accept the possibility of consciousness even in rather dumb group entities. Finally, the United States would seem to be a rather dumb group entity of the relevant sort. (Or maybe, even, it's rather smart, but that's more than I need for my argument.) If we set aside our morphological prejudices against spatially distributed group entities, we can see that the United States has all the types of properties that materialists tend to regard as characteristic of conscious beings.

Of course it's utterly bizarre to suppose that the United States is literally phenomenally conscious.[2] But how good an objection is that? Cosmology is bizarre. Microphysics is bizarre. Higher mathematics is bizarre. The more we discover about the fundamentals of the world, the weirder things seem to become. Should metaphysics be so different? Our sense of strangeness is no rigorous index of reality.[3]

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[2] The empirical literature on folk opinion about group consciousness is more equivocal than I would have thought, however. See Knobe and Prinz 2008; Sytsma and Machery 2009; Arico 2010; Huebner, Bruno, and Sarkissian 2010; Phelan, Arico, and Nichols forthcoming.

Few scholars have clearly endorsed the possibility of literal group consciousness. On group minds without literal consciousness see McDougall 1920; Wilson 2004; and the recent literature on collective intentionality (e.g., Gilbert 1989; Clark 1994; Bratman 1999; Rupert 2005; Tuomela 2007; Searle 2010; List and Pettit 2011; Huebner forthcoming).

For more radical views of group minds see Espinas 1877/1924; Schäffle 1875/1896; maybe Wundt 1897/1897; maybe Strawson 1959 (none of whom were materialists). Perhaps the best developed group consciousness view – with some affinities to the present view, though again not materialist – is that of Tielhard de Chardin 1955/1965. See also Lewis & Viharo's "Google Consciousness", TEDxCardiff (June 9, 2011); Vernor Vinge's science fiction portrayal of group minds in Vinge 1992, 2011; Averroës (Ibn Rushd) on the active intellect, 12th c./2009; Edelman 2008, p. 432; Koch 2012, p. 131-134.

[3] I develop this idea farther in Schwitzgebel in draft. Some others who doubt common sense as a guide to metaphysics are Churchland 1981; Stich 1983; Gopnik and Schwitzgebel 1998; Kornblith 1998; Dennett 2005; Ladyman and Ross 2007; Mandik and Weisberg 2008. Hume 1740/1978 and Kant 1781/1787/1998 are also interesting on this issue, of course.

My claim is conditional and gappy. *If* materialism is true, *probably* the United States is conscious. Alternatively, if materialism is true, *the most natural thing to conclude* is that the United States is conscious.

1. Sirian Supersquids, Antarean Antheads, and Your Own Horrible Contiguism.

We are deeply prejudiced beings. Whites are prejudiced against blacks; Gentiles against Jews; overestimators against underestimators.[4] Even when we intellectually reject such prejudices, they permeate our behavior and our implicit assumptions.[5] If we ever meet interplanetary travelers similar to us in overall intelligence and moral character, we will likely be prejudiced against them too, especially if they look weird.

It's hard to imagine a prejudice more deeply ingrained than our prejudice against entities that are visibly spatially discontinuous – a prejudice built, perhaps, even into the basic functioning of our visual system.[6] Analogizing to racism, sexism, and speciesism, let's call such prejudice *contiguism*.

You might think that so-called contiguism is always justified and thus undeserving of a pejorative label. You might think, for example, that spatial contiguity is a necessary condition of objecthood or entityhood, so that it makes no more sense to speak of a spatially discontinuous entity than it makes sense – unless you adopt some liberal views about ontology[7] – to speak of an

[4] On the last, see Bettencourt, Brewer, Croak, and Miller 1992.

[5] See, for example, the essays collected in Wittenbrink and Schwarz, eds., 2007; Petty, Fazio, and Briñol, eds., 2009. Philosophical discussions include Gendler 2008a-b; Haslanger 2008; Schwitzgebel 2010; Saul forthcoming.

[6] Especially if the entity's parts move on diverse trajectories. See, for example, Campbell 1958; Spelke, Brelinger, Macomber, and Jacobson 1992; Scholl 2007; Carey 2009. See Barnett 2008 and Madden forthcoming for philosophical arguments that we do not intuitively attribute consciousness to scattered objects.

[7] See discussions in Korman 2011; Elder 2011.

entity composed of your left shoe, the Eiffel Tower, and the rings of Saturn. If you'll excuse me for saying so, that attitude is foolish provincialism. Let me introduce you to two of my favorite non-Earthly species.

The Sirian supersquids. In the oceans of a planet around Sirius lives a naturally-evolved animal with a central head and a thousand tentacles. It's a very smart animal – as smart, as linguistic, as artistic and creative as human beings are, though the superficial forms of its language and art differ from ours. Let's call these animals "supersquids".

The supersquid's brain is not centrally located like our own. Rather, the supersquid brain is distributed mostly among nodes in its thousand tentacles, while its head houses digestive and reproductive organs and the like. Despite the spatial distribution of its cognitive processes across its body, however, the supersquid's cognition is fully integrated, and supersquids report having a single, unified stream of experience. Part of what enables their cognitive and phenomenal integration is this: Rather than having relatively slow electrochemical nerves, supersquid nerves are reflective capillaries carrying light signals, something like Earthly fiber optics. The speed of these signals ensures the tight temporal synchrony of the cognitive activity shooting among its tentacular nodes.

The supersquids show all external signs of consciousness. They have covertly visited Earth, and one is a linguist who has mastered English well enough to ace the Turing test (Turing 1950): He can be, when he wants to, indistinguishable in verbal behavior from a normal adult human being. Like us, the supersquids have communities of philosophers and psychologists who write eloquently about the metaphysics of consciousness, about emotional phenomenology, about their imagery and dreams. Any unbiased alien observer looking at Earth and looking at the supersquid home planet would see no good grounds for ascribing consciousness to us but not

them. Some supersquid philosophers doubt that Earthly beings are genuinely phenomenally conscious, given our radically different physiological structure ("What? *Chemical* nerves? How protozoan!"). However, I'm glad to report that only a small minority holds that view.

Here's another interesting feature of supersquids: They can detach their limbs. To be detachable, a supersquid limb must be able to maintain homeostasis briefly on its own and suitable light-signal transceivers must appear on the surface of the limb and on the bodily surface to which the limb is normally attached. Once the squids began down this evolutionary path, selective advantages nudged them farther along, revolutionizing their hunting and foraging. Two major subsequent adaptations were these: First, the nerve signals between the head and limb-surface transceivers shifted to wavelengths less readily degraded by water and obstacles. Second, the limb-surface transceivers developed the ability to communicate directly among themselves without needing to pass signals through the central head. Since the speed of light is negligible, supersquids can now detach arbitrarily limbs and send them roving widely across the sea with hardly any disruption of their cognitive processing. The energetic costs are high, but they supplement their diet and use technological aids.

In this limb-roving condition, the supersquids' limbs are not wandering independently under local limb-only control, then reporting back. Limb-roving squids remain as cognitively integrated as do non-roving squids and as intimately in control of their entire spatially-distributed selves. Despite all the spatial intermixing of their limbs with those of other supersquids, each individual's cognitive processes remain private because each squid's transceivers employ a distinctive signature wavelength. If a limb is lost, a new limb can be artificially grown and fitted, though losing too many limbs at once can substantially impair memory and cognitive function. The supersquids have begun to experiment with limb exchange and cross-compatible

transceiver signals. This has led them toward radically Parfitian views of personal identity, and they are re-envisioning the possibilities of marriage, team sports, and scientific collaboration.[8]

I hope you'll agree with me, and with the universal opinion of supersquids, that supersquids are coherent entities. Despite their spatial discontinuity, they aren't arbitrary collections. They are integrated systems that can be treated as beings of the sort that might house consciousness. And if they might, they do. Or so you should probably say if you're a mainline philosophical materialist. After all, supersquids are naturally evolved beings that act and speak and write and philosophize just like we do.

Does it matter that this is only science fiction? I hope you'll agree that supersquids, or entities relevantly similar, are at least *physically possible*. And if such entities are physically possible, and if the universe is as large as most cosmologists currently think it is – maybe even infinite, maybe even one among an infinite number of infinite universes![9] – then it might not be a bad bet that some such spatially distributed intelligences are actual. Biology can be provincial, maybe, but not metaphysics; you'd better have room in your metaphysics for supersquids.

The Antarean antheads. On the surface of a planet around Antares lives a species of animals who look like woolly mammoths but who act much like human beings. I have gazed into my crystal ball and this is what I see: Tomorrow, they visit Earth. They watch our television shows, learn our language, and politely ask to tour our lands. It turns out that they are sanitary, friendly, excellent conversationalists, and well supplied with rare metals for trade, so they are welcomed across the globe. They are quirky in a few ways, however. For example, their cognitive activity takes them on average ten times longer to execute. This has no overall effect on their intelligence, but it does test the patience of conversation partners unaccustomed to the

[8] These last thoughts are inspired by Parfit 1984; Churchland 1981; Egan 1992.
[9] See, for example, Greene 2011.

Antareans' slow pace. They also find some tasks easy that we find difficult and vice versa. They are baffled and amused by our trouble with simple logic problems like the Wason Selection Task (Wason 1968) and tensor calculus, but they are impressed by our skill in integrating auditory and visual information.

Over time, some Antareans migrate permanently down from their orbiting ship. Patchy accommodations are made for their size and speed, and they start to attend our schools and join our corporations. Some achieve political office and display approximately the normal human range of vices. Although Antareans don't reproduce by coitus, they find some forms of physical contact arousing and have broadly human attitudes toward pair-bonding. Marriage equality is achieved. What a model of interplanetary harmony! Ordinary non-philosophers all agree, of course, that Antareans are conscious.

Here's why I call them "antheads": Their heads and humps contain not neurons but rather ten million squirming insects, each a fraction of a millimeter across. Each insect has a complete set of minute sensory organs and a nervous system of its own, and the antheads' behavior arises from complex patterns of interaction among these individually dumb insects. These mammoth creatures are much-evolved descendants of Antarean ant colonies that evolved in symbiosis with a brainless, living hive. The interior insects' interactions are so informationally efficient that neighboring insects can respond differentially to the behavioral or chemical effects of other insects' individual outgoing efferent nerve impulses. The individual ants vary in size, structure, sensa, and mobility. Specialist ants have various affinities, antagonisms, and predilections, but no ant individually approaches human intelligence. No individual ant, for example, has an inkling of Shakespeare despite the Antareans' great appreciation of Shakespeare's work.

There seems to be no reason in principle that such an entity couldn't execute any computational function that a human brain could execute or satisfy any high-level functional description that the human organism could satisfy. All the creativity of literary interpretation, all the cleverness of humor and weirdness of visual art, should be available to the antheads on standard materialist approaches to cognition.

Maybe there are little spatial gaps between the ants. Does it matter? Maybe, in the privacy of their homes, the ants sometimes disperse from the body, exiting and entering through the mouth. Does it matter? Maybe if the exterior body is too severely injured, the ants recruit a new body from nutrient tanks – and when they march off to do this, they retain some cognitive coordination, able to remember and report thoughts they had mid-transfer. They reconvene and say, "Oh it's such a free and airy feeling to be without a body! And yet it's a fearful thing too. It's good to feel again the power of limbs and mouth. May this new body last long and well. Shall we dance, then, love?"

We humans are not *so* different perhaps. In one perspective (e.g., Maynard Smith and Szathmáry 1995) we ourselves are but symbiotic aggregates of simpler organisms that invested in cooperation.

2. Anti-Nesting Principles.

You might object to the Antarean antheads even if you're okay with the Sirian supersquids. You might think that the individual ants would or could be individually conscious and that it's impossible for one conscious organism to be constituted by other conscious organisms. Some theoreticians of consciousness have said such things – though I've never seen a good justification of this view.

Hilary Putnam (1965), for example, simply stipulates: No organism capable of feeling pain possesses a decomposition into parts which are separately capable of feeling pain. Putnam offers no argument for this stipulation apart from the fact that he wants to rule out the apparently absurd possibility of "swarms of bees as single pain-feelers" (p. 163). Putnam doesn't explain why this possibility is absurd for actual swarms of bees, much less why no possible future evolutionary development of a swarm of conscious bees could ever also be a single pain-feeler. It seems a danglingly unjustified exception to his otherwise clean functionalism.

Giulio Tononi (forthcoming) also advances an anti-nesting principle. On Tononi's theory of consciousness, consciousness arises whenever information is integrated; and whenever one informationally integrated system is nested in another, consciousness occurs only at the level of organization that integrates the *most* information – what he calls the "exclusion principle". Tononi defends the exclusion principle by appeal to Occam's razor, with intuitive support from the apparent absurdity of supposing that group consciousness could emerge from two people talking.[10] But it's unclear why Tononi should put any weight on intuitive resistance to group consciousness, given his near panpsychism: He defends the idea that a photodiode or an OR-gate could have a single bit's worth of consciousness (Tononi 2004, 2008, 2012; Balduzzi and Tononi 2009). Why not some such low-level consciousness from the group, too? And Occam's razor is a tricky implement. Although admitting the existence of unnecessary entities seems like a bad idea, what's an "entity" and what's "unnecessary" is often unclear, especially in part-whole cases. Is a hydrogen atom unnecessary once one admits the proton and electron into one's

[10] See also Barnett 2008, 2010; Madden 2012; and for comparison Godfrey-Smith forthcoming on the "exclusion principle" regarding biological organisms. Barnett, like Putnam, seems to rely simply on an intuitive sense of absurdity (2010, p. 162). In an earlier work, Tononi (2010, note 9) discusses an anti-nesting principle without endorsing it. There he states that such a principle is "in line with the intuitions that each of us has a single, sharply demarcated consciousness". In his more recent article, Tononi does not repeat his appeal to that intuition.

ontology? What makes it necessary, or not, to admit the existence of consciousness in the first place? It's obscure why the necessity of admitting consciousness to Antarean antheads should depend on whether it's also necessary to admit consciousness among the individual ants.

Anti-nesting principles, though seemingly designed to avoid counterintuitive implications of group consciousness, bring different counterintuitive consequences in their train. As Ned Block (1978/1991) argues against Putnam, such principles appear to have the unintuitive consequence that if ultra-tiny conscious organisms were somehow to become incorporated into your brain – perhaps, for reasons unbeknownst to you, each choosing to play the role of one neuron or one part of one neuron – you would be rendered nonconscious, despite the fact that all your behavior, including self-reports of consciousness, might remain the same. Tononi's principle also seems to imply that if there were a large enough election, organized the right way with enough different ballot measures, the resulting polity-level informational integration would eclipse the informational integration of the main conscious stream in the human brain, and thus the individual voters would all lose consciousness. Perhaps we are already on the verge of this in California?[11] Furthermore, since "greater than" is a dichotomous property and not a matter of degree, there ought on Tononi's view to be an exact point at which polity-level integration causes human level consciousness suddenly to vanish (see esp. Tononi 2010, note 9). There ought to be a point at which the addition of a single voter would cause the loss of consciousness in all individual voters – even without any detectable behavioral or self-report effects, or any loss

[11] In conversation, Tononi has resisted this suggestion. However, it remains unclear to me what might justify his resistance on this point, especially given his principle that spatial and temporal grain are not intrinsically meaningful but rather should be chosen to maximize the measure of integrated information. (I choose a temporal grain of one day and a spatial grain of one node per voter.)

of integration, at the level of individual voters. It seems odd to suppose that so much, and simultaneously so little, could turn on the discovery of a single mail-in ballot.

3. Dumbing Down and Smarting Up.

If you're a materialist, you probably think that rabbits are phenomenally conscious – that is, that "there's something it's like to be" a rabbit, that rabbits experience pain, have visual experiences, and maybe have feelings like fear. Some philosophers would deny rabbit consciousness; more on that later. For purposes of this section, I'll assume you're on board. And if you accept rabbit consciousness, you probably ought also to accept the possibility of consciousness in the Sirian and Antarean equivalents of rabbits.

One such species is the Sirian squidbits, a species with cognitive processing distributed among detachable limbs but with approximately the intelligence of Earthly rabbits. When chased by predators, the squidbits will sometimes eject their thousand limbs in different directions and hide their central heads. Most Sirians regard squidbits as conscious entities; whatever reasoning justifies attributing consciousness to Earthly rabbits similarly justifies attributing consciousness to Sirian squidbits. A analogous story also holds on Antares.

Let me tie Sirius, Antares, and Earth a bit more tightly together. Gazing into the distant future on Sirius I see this: The central body of the squidbit becomes smaller and smaller – thus easier to hide – and the limbs develop more independent homeostatic and nutritional capacities, until the primary function of the central body is just reproduction of these increasingly independent limbs. Earthly entomologists come to refer to these heads as "queens". Still later, squidbits enter into symbiotic relationship with brainless but mobile hives, and the thousand bits

learn to hide within for safety. These mobile hives look something like woolly mammoths. Where is the sharp, principled line between group and individual?

We can increase the size Antareans and the intelligence of the ants. Maybe Antareans are the size of houses and filled with naked mole rats. This wouldn't seem to affect the argument. Maybe the ants or rats can even have human levels of intelligence, while the Antareans' behavior still emerges in roughly the same way from the system as a whole. Again, this wouldn't seem to affect the argument.

The present view might seem to conflict with "type-materialist" views that equate human consciousness with specific biological processes.[12] I don't think it does conflict, however. Most type-materialist accounts allow that weird alien species might have conscious experiences. Maybe the phenomenal experience of feeling pain, for example, is identical to different types of physical states in different species. Or maybe the phenomenal type *pain* really requires Earthly neurons but Antareans have conscious experiences of *schmain*, which feels very different but plays a broadly similar functional role. Or maybe radically different low-level physical structures (neurons vs. light signals vs. squirming bugs) can count as physically type-identical at a coarse or abstract level of description, or even *have* to be, if they play similar enough roles in undergirding the behavioral patterns.

4. A Telescopic View of the United States.

A planet-sized alien who squints might see the United States as a single diffuse entity consuming bananas and automobiles, wiring up communications systems, touching the moon,

[12] For a review of "type materialism" see McLaughlin 2007. For more detail how some of the options described in this paragraph might play out, see Lewis 1980; Bechtel and Mundale 1999; Polger 2004; Hill 2009. Block 2002 illustrates the skeptical consequences of embracing type identity without committing to some possibility of broadly this sort.

and regulating its smoggy exhalations – an entity that can be evaluated for the presence or absence of consciousness.

You might say: The United States is not a biological organism. It doesn't have a life cycle. It doesn't reproduce. It's not biologically integrated and homeostatic. Therefore, it's just not the right *type of thing* to be conscious.

To this concern I have two replies.

First, why should consciousness require being an organism in the biological sense? Properly-designed androids, brains in vats, gods – these things might not be organisms in the biological sense and yet are sometimes thought to have consciousness. (I'm assuming materialism, but some materialists believe in actual or possible gods.) Having a distinctive mode of reproduction is often thought to be a central, defining feature of organisms (e.g., Wilson 2005; Godfrey-Smith 2009, forthcoming), but it's unclear why reproduction should matter to consciousness. Human beings might vastly extend their lives and cease reproduction, or they might conceivably transform themselves through technology so that any specific condition on having a biological life cycle is dispensed with, while our brains and behavior remain largely the same. Would we no longer be conscious? Being composed of cells and organs that share genetic material might also be characteristic of an organism, but as with reproduction it's unclear what would justify regarding such composition as essential to mentality, especially once we consider a variety of physically possible non-Earthly creatures.

Second, it's not clear that nations aren't biological organisms. The United States *is* (after all) composed of cells and organs that share genetic material, to the extent it is composed of people who are composed of cells and organs and who share genetic material. The United States also maintains homeostasis. Farmers grow crops to feed non-farmers, and these nutritional

resources are distributed with the help of other people via a network of roads. Groups of people organized as import companies bring in food from the outside environment. Medical specialists help maintain the health of their compatriots. Soldiers defend against potential threats. Teachers educate future generations. Home builders, textile manufacturers, telephone companies, mail carriers, rubbish haulers, bankers, police, all contribute to the stable well-being of the organism. Politicians and bureaucrats work top-down to ensure that certain actions are coordinated, while other types of coordination emerge spontaneously from the bottom up, just as in ordinary animals. Viewed telescopically, the United States is a pretty awesome animal.[13] Now some parts of the United States also are individually sophisticated and awesome, but that subtracts nothing from the awesomeness of the U.S. as a whole – no more than we should be less awed by human biology as we discover increasing evidence of our dependence on microscopic symbionts.

Nations also reproduce – not sexually but by fission. The United States and several other countries are fission products of Great Britain. In the 1860s, the United States almost fissioned again. And fissioning nations retain traits of the parent that influence the fitness of future fission products – intergenerationally stable developmental resources, if you will. As in cellular fission, there's a process by which subparts align into different sides and then separate physically and functionally.

On Earth, at all levels, from the molecular to the neural to the societal, there's a vast array of competitive and cooperative pressures; at all levels, there's a wide range of actual and possible modes of reproduction, direct and indirect; and all levels show manifold forms of symbiosis, parasitism, partial integration, agonism, and antagonism. There isn't as radical a difference in

[13] See Stock 1993 for a similar perspective presented in lively detail.

kind as people are inclined to think between our favorite level of organization and higher and lower levels.

5. What Is So Special About Brains?

According to materialism, what's really special about us is our brains. Brains are what make us conscious. Maybe brains have this power on their own, so that even a lone brain in an otherwise empty universe would have conscious experience if it were structured in the right way; or maybe consciousness arises not strictly from the brain itself but rather from a thoroughly entangled mix of brain, body, and environment.[14] But all materialists agree: Brains are central to the story.

Now what is so special about brains, on the materialist view? Why do they give rise to conscious experience while a similar mix of chemical elements in chicken soup does not? It must be something about how those elements are organized. Two general features of brain organization stand out: their complex high order / low entropy information processing, and their role in coordinating sophisticated responsiveness to environmental stimuli. These two features are of course related. Brains also arise from an evolutionary and developmental history, within an environmental context, which might play a constitutive (and not merely a causal) role in determining function and cognitive content.[15] According to a broad class of plausible materialist views, any system with sophisticated enough information processing and environmental responsiveness, and perhaps the right kind of historical and environmental embedding, should have conscious experience. My central claim is: The United States seems to have what it takes,

[14] E.g., Hurley 1998; Noë 2004; Wilson 2004; Rockwell 2005.

[15] E.g., Putnam 1975; Burge 1979; Millikan 1984; Davidson 1987; Dretske 1988, 1995; Wilson 2004.

if standard materialist criteria are straightforwardly applied without post-hoc noodling. It is mainly unjustified morphological prejudice that blinds us to this.

Consider, first, the sheer quantity of information transfer among members of the United States. The human brain contains about 10^{11} neurons exchanging information through an average of about 10^3 connections per neuron, firing at peak rates of about once every several milliseconds. The United States, in comparison, contains only about 3×10^8 people. But those people exchange a lot of information. How much? We might begin by considering how much information flows from one person to another via stimulation of the retina. The human eye contains about 10^8 photoreceptor cells. Most people in the United States spend most of their time in visual environments that are largely created by the actions of people (including their own past selves). If we count even 1/300 of this visual neuronal stimulation as the relevant sort of person-to-person information exchange, then the quantity of visual connectedness among people is similar to the neuronal connectedness within the human brain (10^{14} connections). Very little of the exchanged information will make it past attentional filters for further processing, but analogous considerations apply to information exchange among neurons. Or here's another way to think about the issue: If at any time 1/300th of the U.S. population is viewing internet video at 1 megabit per second, that's a transfer rate between people of 10^{12} bits per second in this one minor activity alone.[16] Furthermore, it seems unlikely that conscious experience requires achieving the degree of informational connectedness of the entire neuronal structure of the human brain. If mice are conscious, they manage it with under 10^8 neurons.

A more likely source of concern, it seems to me, is that information exchange among members of the U.S. population isn't of the right *type* to engender a genuine stream of conscious

[16] See also Moravec 1997; Kurzweil 2005; Hilbert and López 2011.

experience. A simple computer download, even if it somehow managed to involve 10^{17} bits per second or more, presumably wouldn't by itself alone do the job. For consciousness, there presumably needs to be some organization of the information in the service of coordinated, goal-directed responsiveness; and maybe, too, there needs to be some sort of sophisticated self-monitoring.

But the United States has these properties too. Our information exchange is not in the form of a simply-structured massive internet download. The United States is a goal-directed entity, flexibly self-protecting and self-preserving. The United States responds, intelligently or semi-intelligently, to opportunities and threats – not less intelligently, I think, than a small mammal. The United States expanded west as its population grew, developing mines and farmland in traditionally Native American territory. When Al Qaeda struck New York, the United States responded in a variety of ways, formally and informally, in many branches and levels of government and in the populace as a whole. Saddam Hussein shook his sword and the United States invaded Iraq. The U.S. acts in part through its army, and the army's movements involve perceptual or quasi-perceptual responses to inputs: The army moves around the mountain, doesn't crash into it. Similar, the spy networks of the CIA detected the location of Osama bin Laden, whom the U.S. then killed. The United States monitors space for asteroids that might threaten Earth. Is there less information, less coordination, less intelligence than in a hamster? The Pentagon monitors the actions of the Army, and its own actions. The Census Bureau counts us. The State Department announces the U.S. position on foreign affairs. The Congress passes a resolution declaring that we hate tyranny and love apple pie. This is self-representation. Isn't it? The United States is also a social entity, communicating with other entities of its type. It wars against Germany then reconciles then wars again. It threatens and

monitors Iran. It cooperates with other nations in threatening and monitoring Iran. As in other linguistic entities, some of its internal states are excellently known and straightforwardly reportable to others (who just won the Presidential election, its 2010 GDP) while others are not (how many foreign spies have infiltrated the CIA, the reason Elvis Presley sells more albums than Ella Fitzgerald).

One might think that for an entity to have real, intrinsic representational content, meaningful utterances, and intentionality, it must be richly historically embedded in the right kind of environment. Lightning strikes a swamp and "Swampman" congeals randomly by freak quantum chance. Swampman might utter sounds that we would be disposed to interpret as meaning "Wow, this swamp is humid!", but if he has no learning history or evolutionary history, some have argued, this utterance would have no more meaning than a freak occurrence of the same sounds by a random perturbance of air.[17] But I see no grounds for objection here. The United States is no Swampman. The United States has long been embedded in a natural and social environment, richly causally connected to the world beyond – connected in a way that would seem to give meaning to its representations and functions to its parts.

I am asking you to think of the United States as a planet-sized alien might – or as a planet-sized group intelligence might – that is, to evaluate the behaviors and capacities of the United States as a concrete, spatially distributed entity with people as some or all of its parts, an entity within which individual people play roles somewhat analogous to the role that individual cells play in your body. If you are willing to jettison contiguism and other morphological prejudices, this is not, I think, an intolerably weird perspective. As a house for consciousness, a

[17] See e.g., Davidson 1987; Dretske 1995; Millikan 2010.

rabbit brain is not clearly more sophisticated. I leave it open whether we include as part of the body of the U.S., or instead as part of its environment, objects like roads and computers.

Maybe the actions, attitudes, and representations of the United States are all ultimately reducible to the actions, attitudes, and representations of U.S. citizens and residents, in some complex combination. On that issue I take no stand. (What does "reducible" mean?) All that is required for this part of my argument is that the United States actually engages in actions, actually adopts attitudes, and actually formulates representations, whether reducibly or not, of at least a mammalian level of sophistication. Perhaps, too, if materialists are right, all your actions, attitudes, and representations are in some sense reducible to other things; few philosophers conclude that this would make them unreal. When the United States imports oil from countries A and B, rather than countries C and D, intelligently responding to represented price, it is always individual people, organized in groups, and embedded in a larger environment, who together import the oil. It is also individual cells in your brain, organized in groups, that together respond to the tilting angle of the visual stimulus, that together match the incoming signal with the stored representation of grandma's face. Great things emerge from contextually embedded groups. My argument does not turn on the irreducibility of group behavior or any ineliminable explanatory necessity of appeals to the group level. Rather, my thought is this: There's something awesomely special about brains such that they give rise to consciousness, and considered from a materialist perspective, the United States seems to be awesomely special in just the same sorts of ways.

One might object that "the United States" is an abstraction, like "the average Californian" or "the teenage mind". The average Californian may be conscious, and the teenage mind may seethe with angst, but it would be an absurd category mistake to suppose that therefore there

exists some additional stream of consciousness of the average Californian beyond the streams of consciousness of each Californian considered individually, or some further bit of angst in addition to all the individual angst of particular teenagers. This objection, however, forgets the concreteness on which I have repeatedly insisted. I am willing to be somewhat flexible about the best way to conceptualize the boundaries of the body of the United States, but I insist that we consider the matter concretely, as a planet-sized alien observer might. It's not like seeing all the buildings around campus and then seeking some additional ghostly building which is "the university" (Ryle 1949). Rather, it's like seeing all the buildings around campus and then wondering what features, like open space between the buildings, might be possessed by the campus as a whole but neglected by someone with too narrow a focus on the individual parts.

What is it about brains, as hunks of matter, that makes them special enough to give rise to consciousness? Looking in broad strokes at the types of things materialists tend to say in answer – things like sophisticated information processing and flexible, goal-directed environmental responsiveness, things like representation, self-representation, multiply-ordered layers of self-monitoring and information-seeking self-regulation, rich functional roles, and a content-giving historical embeddedness – it seems like the United States has all those same features. In fact, it seems to have them in a greater degree than do some beings, like rabbits, that we ordinarily regard as conscious.

What could be missing?

6. What Could Be Missing.

In this section, I would have liked to apply particular, detailed materialist metaphysical theories to the question at hand. It seems like the natural next step! Unfortunately, I face four

obstacles, in combination nearly insurmountable. First: Few materialist theoreticians explicitly consider the possibility of literal group consciousness.[18] Thus, it is a matter of speculation how properly to apply their theory to a case that might have been overlooked in the theory's design and presentation. Second: Many theories, especially those constructed by neuroscientists and psychologists, implicitly or explicitly limit themselves to *human* or at most vertebrate consciousness, and thus are silent about how consciousness would work in other sorts of entities (e.g., Baars 1988; Crick 1994). Third: Further limiting the pool of relevant theories is the fact that few thinkers really engage the metaphysics from top to bottom. For example, most theoreticians advocating "higher order" models of consciousness don't provide sufficient detail on the nature of "lower order" mental states for me to evaluate whether the United States would qualify as having such lower-order states (though if it does, it would probably have higher-order states too).[19] Fourth: When I did arrive at what I thought would be a representative sample of four prominent, metaphysically ambitious, top-to-bottom theories of consciousness, it proved rather complex to assess how each view applied to the case of the U.S. – too complex to embed in an already long essay.[20] Thus, I think further progress on this issue will require having some

[18] Two notable exceptions are Robert A. Wilson (2004) and Bryce Huebner (forthcoming). Huebner seems open to the possibility of group consciousness while refraining from endorsing it. Wilson I am inclined to read as rejecting group consciousness on the grounds that it has been advocated only sparsely and confusedly, with no advocate meeting a reasonable burden of proof. Edelman (2008) and Koch (2012) make passing but favorable remarks about group consciousness, at least hypothetically. Tononi and Putnam I discuss in Section 2.

[19] For a review of higher-order theories, see Carruthers 2001/2011.

[20] The theories I chose were Dretske's, Dennett's, Humphrey's, and Tononi's. You can see some of my preliminary efforts in blog posts Schwitzgebel 2012b-f (compare also Koch's sympathetic 2012 treatment of Tononi). On the most natural interpretations of these four test-case views, I thought that readers sympathetic with any of these authors' general approaches ought to accept that the United States is conscious. And I confess I still do think that, despite protests from Dretske, Dennett, Humphrey, and Tononi themselves in personal communication. See the comments section of Schwitzgebel 2012d for Humphrey's reaction, the remainder of the present section for Dretske and Dennett, and Section 2 for Tononi.

specific counterproposals to evaluate. In this section, I will address three objections, one inferred from remarks by Andy Clark on the extended mind hypothesis and two derived from email correspondence with prominent materialist philosophers. In the next section, I will explore three other ways of escaping my conclusion – ways that involve rejecting either rabbit consciousness, alien consciousness, or both.

Objection: high-bandwidth neural synchrony. Andy Clark (2009) has recently argued that consciousness requires high bandwidth neural synchrony – a type of synchrony that is not currently possible between the external environment and structures interior to the human brain. Thus, he says, consciousness stays in the head. Now in the human case, and generally for Earthly animals with central nervous systems, maybe Clark is right – and maybe such Earthly animals are all he really has in view. But we can consider elevating this principle to a necessity. The information integration of the brain is arguably qualitatively different in this way from the informational integration of the United States. If consciousness, in general, as a matter of physics or metaphysics, requires massive, swift parallelism, then maybe we can get mammal consciousness without U.S. consciousness.

But this move has a steep price, if we are concerned, as the ambitious materialist should be, about hypothetical and alien cases. Suppose we were to discover that some people, though outwardly very similar to us, or some alien species, operated via incredibly swift serial processing rather than by parallel processing. Would we really be justified in thinking they had no conscious experience? Or what if we were to discover a species of long-lived, planet-sized aliens whose cognitive subprocesses, though operating in parallel, proceeded much more slowly than ours, with transfer delays on the order of hours rather than milliseconds? If we're going to adopt the same liberal spirit that admits consciousness in Sirian supersquids and Antarean

antheads – the most natural development of the materialist view, I'm inclined to think – it seems that we can't insist on high-bandwidth neural synchrony. If instead we adopt a more conservative view, insisting on some particular architecture, it seems we need some principled motivation for excluding from consciousness any hypothetical being that lacks that architecture, however similar to us that entity is in its outward behavior. No such motivation suggests itself here.

Analogous considerations will likely trouble most other attempts to exclude U.S. consciousness on broad architectural grounds of this sort.

Dretske's objection. Fred Dretske, in correspondence, has suggested that the United States could not be conscious because its representational states depend on the conscious states of others. Such dependence, he says, renders its representations *conventional* rather than *natural* – and a conscious entity must have natural representations.[21]

In earlier work, Dretske (1995) highlights the implausibility of supposing that an object that has no intrinsic representational functions can become conscious simply because outside users impose representational functions upon it. We don't make a mercury column conscious by calling it a thermometer, nor do we make a machine conscious by calling it a robot and interpreting its outputs as speech acts. The machine either is or is not conscious, it seems, independently of our intentions and labels. A wide range of materialists, I suspect, will and should accept that an entity cannot be conscious if all its representations depend in this way on external agents. Focusing on such cases, Dretske's independency criterion seems appealing.

[21] In his 1995 book, Dretske says that a representational is natural if it is not "derived from the intentions and purposes of its designers, builders, and users" (p. 7) rather than the more general criterion, above, of independency from "others". In light of our correspondence on group consciousness, he says that he has modified this aspect of his view.

But the citizens and residents of the United States are parts of the U.S. rather than external agents, and it's not clear that the dependency of consciousness on the intentions and purposes of *internal* agents is problematic in the same way, if the internal agents' behavior is properly integrated with the whole. The internal and external cases, at least, are sufficiently dissimilar that before accepting Dretske's principle in general form we should at least consider some potential internal-agent cases. The Antarean antheads seem to be just such a case, and I've suggested that the most natural materialist position is to allow that they are conscious. Furthermore, although Dretske's criterion is not exactly an anti-nesting principle in the sense of Section 2, it is subject to the same concerns. In its broad form it seems unmotivated, except by a desire to exclude the very cases in dispute, and it brings new counterintuitive consequences in its train, such as loss of consciousness upon inhaling Planck-scale people whose actions are smoothly incorporated into one's brain functions. On Dretske's proposed principle, as on the anti-nesting principles of Section 2, entities that behave identically on a large scale and have superficially similar evolutionary and developmental histories might either have or lack consciousness depending on micro-level differences that are seemingly unreportable (to them), unintrospectible (to them), unrelated to what they say about Proust, and thus, it seems natural to suppose, irrelevant.

Dretske conceives his criterion as dividing "natural" representations from "conventional" or artificial ones. Maybe it is reasonable to insist that a conscious being have natural representations. But from a telescopic perspective national groups and their representational activities *are* eminently natural – as natural as the structures and activities of groups of cells clustered into spatially contiguous individual organisms. What should matter on a broadly Dretskean approach, I'm inclined to think, is that the representational functions emerge naturally

from within rather than being imposed artificially from outside, and that they are properly ascribed to the whole entity rather than only to a subpart. Both Antarean opinions about Shakespeare and the official U.S. position on Iran's nuclear program meet these criteria.

Dennett's objection. Daniel Dennett, in correspondence, offers a pragmatic objection: To the extent the United States is radically unlike individual human beings, it's unhelpful to ascribe consciousness to it. Its behavior is impoverished compared to ours and its functional architecture radically unlike our own. Ascribing consciousness to the United States is not so much straightforwardly false, Dennett suggests, as it is misleading, inviting the reader to too closely assimilate human architecture and group architecture.

To this objection I respond, first, that the United States is not behaviorally impoverished. It does lots of things, as described in Sections 4 and 5 above – probably more than any individual human does. (In this way it differs from the aggregate of the U.S., Germany, and South Africa, and maybe also from the aggregate of all of humanity.) Second, to hang the metaphysics of consciousness on fine details of architecture runs counter to the spirit that admits the Sirians and Antareans to the realm of beings who would (hypothetically) be conscious. Thus it risks collapse into neurochauvinism (Section 7 below). And third, we can presumably dodge such practical worries about leaping to assimilative inferences by being restrained in our inferences. We can refrain from assuming, for example, that when the U.S. is angry its anger is felt, phenomenologically, as anything like the anger of individual human beings; we can even insist that "anger" is not a great word and simply the best we can do with existing language. The U.S. can't feel blood rush to its head; it can't feel tension in its arms; it can't "see red". It can muster its armies, denounce the offender via spokespeople in Security Council meetings, and enforce an

embargo. What it feels like, if anything, to enforce an embargo, defenders of U.S. consciousness can wisely refrain from claiming to know.

Riffling through existing theories of consciousness, we could try to find, or we could invent, some necessary condition for consciousness that human beings meet, that the United States fails to meet, and that sweeps in at least some of the more plausibly conscious non-human entities. I would not object to treating my argument as a challenge to which materialists might rise: Let's find, if we can, a plausible criterion that delivers this appealing conclusion!

Alternatively, some readers – perhaps especially empirically-oriented readers – might suggest that my argument does little other than display the bankruptcy of metaphysical speculation about bizarre cases. How could we hope to build any serious theory on science-fictional intuitions? I sympathize with this reaction too. Perhaps we should abandon any aspiration for a truly universal metaphysics that would cover the whole range of bizarre possibilities. The project seems so ungrounded, so detached from our best sources of evidence about the world! But this reaction wouldn't give us much guidance about the question of U.S. consciousness, if we are suspicious enough of common sense to think that our commonsensical reactions do not decisively settle the question. Despite my sympathies with skepticism about the metaphysics of bizarre cases, I want, and I think it's reasonable to want, at least a conditional assessment or best guess about whether we are parts of a larger conscious entity. Is there a better way to try to reach such a tentative assessment?

7. Three Ways Out.

Let's briefly consider three more conservative views about the distribution of consciousness in the universe, to see if they can provide a suitable exit from the bizarre conclusion that the United States is literally conscious.

Eliminativism. Maybe the United States isn't conscious because *nobody* is conscious – not you, not me, not rabbits, not aliens. Maybe "consciousness" is such a corrupt, broken concept, embedded in such a radically false worldview, that we should discard it entirely, as we discarded the concepts of demonic possession, the luminiferous ether, and the fates.

In this essay, I have tried to use the concept of *consciousness* in a plain way, unadorned with dubious commitments like irreducibility, immateriality, and infallible self-knowledge. Maybe I have failed, but then I hope you will permit me to rephrase: Whatever it is in virtue of which human beings and rabbits have appropriately unadorned quasi-consciousness or consciousness*, the United States has that same thing.

The most visible philosophical eliminativists about terms from folk psychology still seem to have room in their theories for consciousness, suitably stripped of dubious commitments.[22] So if you tread this path, you're going farther than they. In fact, Paul Churchland (1984/1988) says several things that seem, jointly, to commit him to accepting the idea that cities or countries would be conscious (though he doesn't to my knowledge explicitly draw the conclusion).[23] Galen Strawson says that denying the existence of conscious experience is "the strangest thing

[22] P.M. Churchland 1984/1988; P.S. Churchland 2002; Stich 2009. Contrast skepticism about loaded versions of "consciousness" or "qualia" in P.S. Churchland 1983; Dennett 1991; Frankish 2012.

[23] Churchland characterizes as a living being "any semiclosed system that exploits the order it already possesses, and the energy flux through it, in such a way as to maintain and/or increase its internal order" (1984/1988, p. 173). By this definition, Churchland suggests, beehives, cities, and the entire biosphere all qualify as living beings (ibid.). Consciousness and intelligence, Churchland further suggests, are simply sophistications of this basic pattern – cases in which the semiclosed system exploits energy to increase the information it contains, including information about its own internal states and processes (1984/1988, p. 173 and 178).

that has ever happened in the whole history of human thought" (2006, p. 5). Strawson's remark underestimates, I suspect, the strangeness of religion; but still, radical eliminativism seems at least as bizarre as believing that the United States is conscious.

Extreme sparseness. Here's another way out for the materialist: Argue that consciousness is rare, so that really only very specific types of systems possess it, and then argue that the United States doesn't meet the restrictive criteria. If the criteria are specifically *neural*, this position is neurochauvinism, which I will discuss shortly. Setting aside neurochauvinism, the most commonly endorsed extreme sparseness view is one which *language* is required for consciousness. Thus, dogs, wild apes, and human infants aren't conscious. There's nothing it's like to be such beings, any more than there is something it's like (most people think) to be a diode or a fleck of dust. To a dog, all is dark inside, or rather, not even dark. This view is both highly counterintuitive and, I suspect, a gross overestimation of the gulf between us and our nearest relatives.

However, it's not clear that we get to exclude U.S. consciousness by requiring language for consciousness, since the United States does seemingly speak as a collective entity, as I've mentioned. It linguistically threatens and self-represents, and these threats and self-representations influence the linguistic and non-linguistic behavior of other nations. If the materialist is to deny U.S. consciousness on grounds of a general commitment to the sparseness of consciousness in the universe, then even more severe restrictions are required, or at least different ones. Perhaps phenomenal consciousness requires the ability to self-report the existence of phenomenal consciousness? I'll admit the United States doesn't do that! But by this criterion even four-year-olds might not be conscious.

Neurochauvinism. A third way out is to assume that consciousness requires *neurons* – neurons clumped together in the right way, communicating by ion channels and all that, rather than by voice and gesture. All the entities that we have actually met and that we normally regard as conscious do have their neurons bundled in that way, and the 3×10^{19} neurons of the United States are not as a whole bundled that way.

Examples from Ned Block (1978/1991) and John Searle (1980, 1984) lend intuitive support to this view. Suppose we arranged the people of China into a giant communicative network resembling the functional network instantiated by the human brain. It would be absurd, Block says, to regard such an entity as conscious (though see Lycan 1981). Similarly, Searle asserts that no arrangement of beer cans, wire, and windmills, however cleverly arranged, could ever host a genuine stream of conscious experience (though see Cuda 1985). According to Block and Searle, what these entities are lacking isn't a matter of large-scale functional structure revealed in patterns of input-output relations. Consciousness requires not that, or not only that; consciousness requires human biology.

Or rather, consciousness, on this view, requires something *like* human biology. In what way like? Here Block and Searle aren't very helpful. According to Searle, "any system capable of causing consciousness must be capable of duplicating the causal powers of the brain" (1992, p. 92). In principle, Searle suggests, this could be achieved by "altogether different" physical mechanisms. But what mechanisms could do this and what mechanisms could not, Searle makes no attempt to adjudicate, other than by excluding certain systems, like beer-can systems, as plainly the wrong sort of thing. Instead, Searle gestures hopefully at future science.

The reason for not strictly insisting on neurons, I suspect, is this: If we're playing the common sense game – that is, if bizarreness by the standards of current common sense is our

reason for excluding beer-can systems and organized groups of people – then we're going to have to allow the possibility, at least in principle, of conscious beings from other planets who operate other than by neural systems like our own. By whatever commonsense or intuitive standards we judge beer-can systems nonconscious, by those very same standards, it seems, we would judge hypothetical Martians, with different internal biology but intelligent-seeming outward behavior, to be conscious.

From a cosmological perspective it would be strange to suppose that of all the possible beings in the universe that are capable of sophisticated, self-preserving, goal-directed environmental responsiveness, beings that could presumably be (and in a vast enough universe presumably actually are) constructed in myriad strange and diverse ways, somehow only we with our neurons have genuine conscious experience, and all else are mere automata there is nothing it is like anything to be. Contrary to the "Copernican Principle" of cosmological method,[24] this view would suggest that we, as the sole possessors of consciousness, are in a uniquely favored position in the universe. How lucky we are! (The other beings, I suppose, only *say* they're lucky, or only emit noises that we would mistakenly regard as having that semantic content.) For this reason, it seems not only unintuitive but also scientifically unjustified to suppose that conscious experience requires Earthly biology. It would be like supposing that life requires Earthly nucleotides.

If they're to avoid un-Copernican neuro-fetishism, the question must become, for Block and Searle, *what* feature of neurons, possibly also possessed by non-neural systems, gives rise to consciousness? In other words, we are back with the question of Section 5 – what is so special about brains? – and the only well-developed answers on the near horizon seem to involve

[24] Bondi 1952/1968; Beisbart and Jung 2006.

appeals to the sorts of features that the United States has, features like massively complex informational integration, functionally directed self-monitoring, and a long-standing history of sophisticated environmental responsiveness.

8. Conclusion.

In sum, the argument is this. There seems to be no principled reason to deny entityhood, or entityhood-enough, to spatially distributed beings if they are well enough integrated in other ways. By this criterion, the United States is at least a *candidate* for the literal possession of real psychological states, including consciousness. If we're willing to entertain this perspective, the question then becomes whether it meets plausible materialistic criteria for consciousness. My suggestion is that if those criteria are liberal enough to include both small mammals and highly intelligent aliens, then the United States probably does meet those criteria. Although that conclusion seems absurdly bizarre, even a passing glance at contemporary physics and metaphysics suggests that common sense is no sure guide to fundamental reality.

Large things are hard to see properly when you're in their midst. The homunculi in your head, the tourist in Leibniz's mill, they don't see consciousness either.[25] Too vivid an appreciation of the local mechanisms overwhelms their view. The space between us is an airy synapse.

[25] On the homunculi, see e.g., Fodor 1968. Leibniz imagines entering into an enlarged brain as into a mill in his 1714/1989.

If the United States is conscious, is Exxon-Mobil? Is an aircraft carrier?[26] Is the seven dwarfs of *Snow White?* And if such entities are conscious, do they have rights? Is dissolution murder? I don't know. The bizarrenesses multiply, and I worry about the moral implications.

Neither do I know whether I have provided grounds for believing that the United States is conscious, or instead a challenge to existing materialist theories of consciousness, or instead reasons to be wary of ambitions toward a universal metaphysics of mind. Whoops, I hear something knocking on my office door....[27]

[26] Hutchins 1995 vividly portrays distributed cognition in a military vessel. I don't know whether he would extend his conclusions to phenomenal consciousness, however.

[27] For helpful discussion of these issues in the course of writing, thanks to Rachel Achs, Santiago Arango, Scott Bakker, Zachary Barnett, Mark Biswas, Ned Block, David Daedalus, Dan Dennett, Fred Dretske, Louie Favela, Kirk Gable, Peter Godfrey-Smith, Chris Hill, Linus Huang, Nick Humphrey, Enoch Lambert, Bill Lycan, Pete Mandik, Tori McGeer, Luke Roelofs, Giulio Tononi, Vernor Vinge, and Rob Wilson; to audiences at University of Cincinnati, Princeton University, Tufts University, University of Basque Country, and Bob Richardson's seminar on extended cognition; and to the many readers who posted comments on relevant posts on my blog, The Splintered Mind. My wife Pauline sensibly worries that I am too passionate in defending the rights of antheads who, she says, don't even really exist. My thirteen-year-old son Davy, however, thinks that for the first time in my career I'm now actually writing about something interesting. The seven dwarfs example is his.

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