NeuroCongress

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It is common to speak of legislative “intent,” but one cannot, except in a figurative sense, form an intent without a mind to generate it. For those of a speculative bent, this observation may spark questions concerning what might be called the mind/legislative-body problem. These questions apply broadly to all legislative bodies—e.g., Congress, the British Parliament, state legislatures, etc.—but, without loss of generality and for ease of reference, they can be focused on Congress. Could Congress have a mind of its own? If it does, then what is the qualitative nature of its mental experience—i.e., “what is it like to be” Congress? And what can reflection on the nature of such experience teach us about congressional “intent?”

Some short answers: Given how little we know concerning why some bits of organized matter generate consciousness, we cannot exclude the logical possibility that Congress does lead some sort of mental life. We will never be able to determine with any clarity what it is like to be Congress—the nature of its intents, sense impressions, or feelings (if any) will always remain obscure. That said, there is no good reason to think that being Congress is like being Albert Einstein, John Malkovich, or any particular congressperson. And there is a tempting argument to be made that Congress’s mental life might be about as rich and complex as that of a roundworm.

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1 Cf. Thomas Nagel, What Is It Like to Be a Bat? 4 Phil. Rev. 435–50 (1974) (concluding that we will never know what it is like to be a bat because bats find their insect prey through echolocation and Professor Nagel does not).

2 On this view, one might do well to regard Congress as a reasonable roundworm pursuing reasonable roundworm purposes reasonably. Cf. Henry M. Hart, Jr. & Albert M. Sacks, The Legal Process 1378 (William N. Eskridge, Jr. & Philip P. Frickey eds., 1994) (1958) (prescribing presumption that legislators are “reasonable persons pursuing reasonable purposes reasonably”).
Such observations are far removed from normal legal discourse concerning legislative intent, which often revolves around whether one can discover anything legitimate and useful concerning statutory meaning by investigating what various members of Congress said about a bill as it made its way through the legislative meat-grinder. Proponents of judicial reliance on legislative history contend that such materials can shed valuable light on legislative “intent,” which courts should implement. Others condemn this practice because judicial use of such materials tempts legislators to lard them with self-serving, misleading characterizations. Critics also argue that mining legislative history for meaning depends on the unrealistic expectation that an enacting majority among 535 logrolling actors is likely to share an identifiable “intent” sufficiently specific to constrain later interpretation. Some go further and claim that the very notion of a collective legislative intent is incoherent. And then of course there are constitutional objections—e.g., that unenacted intents cannot be law because they have not survived bicameral and presentment requirements.

Framing the debate in such a way tacitly assumes that the intent of Congress, if such a thing exists, must be a function of “adding up”

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3 For a summary of debates over the usefulness and legitimacy of legislative history as evidence of legislative intent, see William N. Eskridge, Jr., Philip P. Frickey & Elizabeth Garrett, Legislation And Statutory Interpretation 211–36 (2000).
7 Kenneth A. Shepsle, Congress Is a “They,” Not an “It”: Legislative Intent as Oxymoron, 12 INT’L REV. L. & ECON. 239, 254 (1992) (“Individuals have intentions and purposes and motives; collections of individuals do not. To pretend otherwise is fanciful.”). But see Cheryl Boudreau, Mathew D. McCubbins & Daniel B. Rodriguez, Statutory Interpretation and the Intentionalist Stance, 38 LOY. L.A. L. REV. 2131, 2142–43 (2005) (contending that humans cannot help but impute intents to collectivities and that it makes perfectly good sense to impute metaphorical intents to Congress); Solan, supra note 4, at 428, 440–41 (contending that it is perfectly normal and legitimate to attribute intent to a group, such as a legislature, considered as an entity).
8 See, e.g., Manning, supra note 6, at 697, 718–19, 724–25 (discussing constitutional objections to use of legislative history).
the intents of its individual members. In the Humpty-Dumpty sense that words mean whatever we want them to mean, it is harmless enough to characterize some purpose shared by a sufficiently large number of individual members as amounting to the intent of Congress considered as one entity. Indeed, we could name this sum of the parts whatever we like (e.g., "spaghetti," "Jessica Alba") so long as we keep careful track of what we are talking about. Outside the world of legal fictions, however, determining a mind’s intent does not seem to be a matter of somehow summing the mental states of its parts.

Suppose, for lack of anything serious to do this very moment, we try thinking about congressional intent in a manner that does not so obviously contradict how minds may work in humans (and who knows what else). To start, for the present purpose, a thing has (or is) a “mind” if it has subjective experience—i.e., if you have a mind, there is something it is like to be you; you enjoy a phenomenological life. If the temperature suddenly drops, in addition to whatever physical effects this change may have on your body, you will feel the sensation of cold. Your furnace’s thermostat, like you, physically reacts to changes in temperature, but most observers would quickly concede that your thermostat’s physical changes are not accompanied by any mental experience—at no time does your thermostat think, “Brrrrr! Fire up the furnace—my sensors feel like ice!” Such mental experience is “subjective” in the sense that only the experiencing mind has direct access to its own perceptions, emotions, intents, thoughts, etc. Only you know what it is like for you to see red; others can only experience your reports of what your experience is like. Philosophers who discuss this kind of thing for a living commonly refer to the qualitative “feel” of conscious experiences—broadly including sense perceptions, emotions, beliefs, desires, etc.—

9 LEWIS CARROLL, ALICE’S ADVENTURES IN WONDERLAND AND THROUGH THE LOOKING GLASS, 185 (Modern Library 2002) (1897) (“When I use a word . . . it means just what I choose it to mean—neither more nor less . . . . The question is, . . . which is to be Master—that’s all.”).
10 Many thanks to Professor Peter Oh for suggesting “Ms. Alba.”
11 For recognition of the point that legislative intent is not a matter of summing the intents of legislators, see Solan, supra note 4 at 445.
12 See NAGEL, supra note 1 at 436 (suggesting this approach for defining “mind”).
13 For a bold exploration of the panpsychist possibility that thermostats might connect to some sort of subjective experience, see DAVID J. CHALMERS, THE CONSCIOUS MIND: IN SEARCH OF A FUNDAMENTAL THEORY 293–99 (1996). Professor Chalmers concedes that, if being a thermostat is like being anything at all, it is probably not very interesting. Id. Professor Chalmers has never had to conduct a large-scale document review.
One can contrast the subjective, mental world of qualia with the objective world of the physical—the universe of stuff that most people reflexively assume exists regardless of whether there is a mind present to perceive it.

Your brain is a part of this physical world. It weighs about 3 pounds, and, by some estimates, contains about 100 billion neurons. There are about thirty billion neurons in your cerebral cortex, which is the convoluted stuff forming the top-outside portion of your brain. It evolved recently and takes the blame for many of your higher cognitive functions.

A neuron receives chemical signals through a complex network of dendrites, which branch off from the main cell body to make synaptical connections with other neurons. A “typical” neuron may receive signals from thousands of other neurons in this way. A neuron sends “outbound” signals through a projection from the main cell body called the axon. Neuronal activity, or “firing,” is a function of the flow of chemical ions and attendant electrical charges. A quiescent neuron is negatively charged; as positive ions flow into it, this negative charge lessens, causing an electric signal called an “action potential” to flow down the axon and release neurotransmitters at the neuron’s synaptic connections. These released chemicals flow across the synaptic clefts into the dendrites of neighboring neurons, changing their electro-chemical balance and making them more or less likely to fire. By one estimate, the universe contains about $10^{79}$ atoms, but there may be something like $10^{1,000,000}$ potential neural circuits in your brain—making it and your cell-phone bill far and away the most complex things in existence.

Philosophers refer to the problem of explaining the link between the objective world of the brain and the subjective world of the mind as the “mind-body” problem. Its crux is that it is not obvious

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14 Id. at 4.
15 Information concerning the physical attributes of the brain discussed above was taken from Gerald M. Edelman & Giulio Tononi, A Universe Of Consciousness 38–41 (2000).
16 Do these so-called “higher” functions do us much good in the end? If you had as much brain as a sea otter, the dome of your skull would rise to just above your eyebrows. Yet sea otters seem to have a great time on all the nature shows. Yes, they have an orca problem, but they don’t dwell on it like you or I might.
17 The mind-body problem is hard. Colin McGinn, The Making Of A Philosopher 182 (2002) (explaining that humans have as much chance of solving it as dogs do of understanding Einstein’s physics). Some philosophers have responded to this difficulty by taking the cut-the-Gordian knot approach of denying that mental experiences exist, which seems like cheating. Cf. Jaegwon Kim, Philosophy Of Mind 179 (1996) (describing this view as one of “philosophical qualia nihilism”). Professor John Searle has suggested disproving such arguments by pinching people who make them. John Searle, The Mystery Of Consciousness 122 (1997). Would a punch in
why physical states in some kinds of things should connect in any fashion at all to mental experience. Imagine that you had never heard anything about brains—never even heard the word—before observing brain surgery. After recovering from the initial icky shock of seeing someone else’s brain, would it occur to you in a million years that this bloody, pulsing pile of grayish gunk is where its owner stores her personality, memories of lost loves, Third Amendment absolutism, fear of kiwi fruit, and envy of John Grisham?

Of course, in our particular culture, most people would no doubt agree that it is an obvious fact that the brain exercises control over the physical activity of the rest of the body and is the (physical) home of personality and memory. Neuroscience has made vast strides in recent years learning how the brain achieves such control. For instance, scientists now use PET scans and functional magnetic resonance imaging (fMRI) to learn which areas of the brain are active as experimental subjects perform various tasks.

Such exploration, however, can only explore how the brain, a physical thing, causally links to the rest of the body, also a physical thing. It cannot ultimately provide a satisfactory answer to the mind-body problem by establishing how the physical links to the mental. To illustrate, indulge the oversimplification that there is some easily identifiable set of neurons in Alice’s head which, if properly stimulated, will cause her to report that she sees the color green. Due to

the nose do the trick? Zen masters have used this technique to cause those they punch to achieve satori, a state of sudden enlightenment. I know this doesn’t work when you try it on yourself. Tried on others, it raises liability concerns.

18 Under most circumstances, it would be worse to see your own brain.

19 It would not have occurred to Aristotle, who thought that the brain’s function was to cool the blood. ARISTOTLE, Parts of Animals, in 1 THE COMPLETE WORKS OF ARISTOTLE 994, 1015–18 (W. Ogle trans., Jonathan Barnes ed., 1984). This turns out to be true only of some people.

20 The most dramatic illustration of the link between brain and personality comes from the terrible story of Phineas Gage. While working as a foreman on a railroad gang in 1848, Gage made the mistake of using an iron rod to tamp down a charge of powder resting in a hole bored in some rock before the powder was covered with a protective layer of sand. The resulting spark triggered an explosion that sent the rod rocketing through Gage’s cheekbone, brain, and skull. His body survived, but his personality did not. The man who had been a sober, energetic, admired member of his community died a dissolute, profane drunk with serious impulse control problems a dozen years later. See Wikipedia, Phineas Gage, http://en.wikipedia.org/wiki/Phineas_Gage (describing Gage’s injury; casting doubt on the severity of its psychological effects). It simply isn’t true that after the accident Gage took up teaching Administrative Law.

21 For a brief overview of the technology of brain scanning and a broad discussion of its relevance to law, see Terrence Chorvat, Kevin McCabe & Vernon Smith, Law and Neuroeconomics, 13 Sup. Ct. Econ. Rev. 35, 44–47 (2005).
the inaccessibility of subjective experience to objective outsiders, we cannot exclude the possibility that Alice does not subjectively “see” or experience green at all because she is a *phenomenal zombie* with no mental, phenomenological life whatsoever. Empirical, objective observation of a brain, therefore, cannot prove that it somehow connects to a mind.

How is it, then, that we can be so sure that other people have minds and are not instead zombies? Betty might reason that, because it is plain that she has a mind, other humans of similar construction also likely have minds. This conclusion rests on the plausible premise that whatever it is about Betty’s physical construction that gives rise to her mental life is both present in other humans and sufficient to generate minds in them. As a general matter, however, people do not reason their way to this conclusion. Distinguish for a moment between philosophical doubt (e.g., pretending to “doubt” the world exists but nonetheless avoiding traffic) and “real” doubt (e.g., wondering whether you turned off the coffee-maker). One word for people who really doubt whether other people have minds is “crazy.” Normal humans *intuit* that other humans have minds. This intuition is probably hard-wired into us, and no doubt relates in some manner to our status as nature’s most social non-insect animals.

Most people extend the presumption of mind to many other animals—especially furry, charismatic types like apes, monkeys, dogs, Administrative Law professors, etc. At some point, however, an animal seems sufficiently distinct from humans that most would no longer count it as a member of the tribe of the mental (e.g., Civil Procedure professors). Different people draw this line differently.

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22 In this context, the adjective “phenomenal” is not used in the “Wow! Cool zombie!” sense. Rather, it refers to this type of zombie’s lack of a subjective mental life. See *Chalmers*, supra note 13 at 94–99. If you had a phenomenal zombie twin, to all outward appearances it would look exactly like you and not like one of the cannibal zombies from *The Night of the Living Dead*—unless of course you do, too. See id. at 94–95 (distinguishing phenomenal from “Hollywood” zombies). Hollywood zombies can also be identified by their habit of looking past you for more important zombies at cocktail parties. Cf. The annual conference of the American Association of Law Schools.

23 No amount of observation can disprove what you have always known in your heart—the dean of your law school is a zombie.

24 Strictly speaking, we might not be the most social non-insects. I once saw a nature show about blind, hairless moles that live in groups structured something like ant colonies.

25 What would happen if an Administrative Law teacher switched to Civil Procedure? Would the Administrative Law teacher’s super-evolved consciousness “blink out” of existence? Cf. *Chalmers*, supra note 13, at 255 (discussing the possibility of “suddenly disappearing qualia”). All I can say is that it happened to me.
Very few worry about the hopes and dreams of the mosquitoes they slap; more feel a bit guilty reeling in a fish with hook and line; and there is no excuse for cruelty to dogs. Of course, this slippery-slope dynamic confirms that we do not actually know where to draw the line between conscious and non-conscious entities, and it lends our attempts to do so an arbitrary flavor. Note also that not all people are burdened by animalistic prejudice. Animists of many times and cultures have attributed mental capacity to fire, wind, trees, etc. Some of the most technophiliac members of our own culture believe that computers have minds or may have them in the future. 26 A few even go so far as to suggest that thermostats might lead some sort of bland, phenomenological existence. 27

They might be right! It seems reasonable to presume that some set of laws connects the physical and the mental—i.e., if you construct the right kind of physical thing, its physical properties will bear some kind of lawful connections to a mental life. Our prejudice that other humans have minds compels the conclusion that there is something about the human brain that is sufficient to cause consciousness. We cannot, however, draw from this proposition a knock-down inference concerning what properties are necessary to cause consciousness.

What, then, is it about the brain that connects to mind? Over the last several decades, functionalism has been a prevalent school of thought on this subject among philosophers of mind. 28 To illustrate: suppose that scientists developed a silicon neuron that could replace the kind that nature stuffed in your head. What justifies calling this device a “neuron”? To count as such, it should serve the same causal role in your head as a “real” neuron—i.e., if a real neuron’s functional role in your head is to respond to chemical stimulation from some of its neighbors by in turn stimulating others, then, to count as a replacement, the artificial neuron should perform the same task. If it were instead to sit inertly in your head, then it would not be a neuron—it would just be a piece of silicon somebody stuck in your skull. Suppose that, due to a progressive brain disease, surgeons gradually

26 See Terminator III: The Rise Of The Machines (Warner Brothers 2003) (which is really very good). Professor Krotoszyński, on seeing this footnote in an earlier draft, accused its author of being the worst kind of philistine for citing Governor Schwarzenegger rather than HAL from 2001: A Space Odyssey (Metro-Goldwyn-Mayer 1968). He is absolutely right.

27 Chalmers, supra note 13, at 295 (contending that “[s]omeone who finds it ‘crazy’ to suppose that a thermostat might have experiences at least owes us an account of just why it is crazy”—whatever you say, Professor).

28 Searle, supra note 17, at 139–43 (deriding functionalism).
replace your natural neurons with artificial ones. For the first few surgeries, there is no question but that you remain you. Eventually, however, all of your neurons have been replaced. To all outward appearances, you behave exactly as you always have—e.g., you continue to report that you love both mint-chocolate-chip ice cream and the Third Amendment of the United States Constitution. Does your new brain give rise to the kind of mind with which you started? A functionalist would answer yes on the ground that, by hypothesis, your brain is performing exactly the same tasks as it did before. On this view, your mental states are defined by causal connections—a mental state is a mental state by virtue of what it does. Thus, just as chairs can be constructed according to varying designs out of differing materials and still be chairs, so the same logic should apply to minds.

Functionalism has obvious appeal for artificial intelligence aficionados because its core claim implies that you do not need something like the human brain to generate a mind—silicon chips strung together the right way in a box might do the trick as well. But the implications of the functionalist claim that mind does not depend on the physical nature of the “brain” that generates it extend much further. Carried to its logical extreme, functionalism suggests that, provided its members are “programmed” the right way, an ant colony, a bunch of beer cans strung together, or the population of China (or any other group of people) could function as and thus be a “mind.”

This functionalist approach, however, does not provide a satisfying conceptual link between the physical and the mental. Note that, by hypothesis, a phenomenal-zombie law professor would be function-
ally indistinguishable from a law professor with a mental life—e.g., the zombie would look bored at faculty meetings and complain about parking. It follows that, although a complete functional account of the brain would constitute the greatest scientific achievement ever, such an account could not, by itself, eliminate the core problem of explaining the mind-body connection.\footnote{For a difficult effort to get past this objection and link functional organization to consciousness, see Chalmers, supra note 13, 247–310. For acid commentary, compare Searle, supra note 17, at 143–63.} That said, by suggesting the possibility that mentality may lurk in systems as diverse as computers or strung-together beer cans, the functionalist account does stretch intuitions concerning where one might find minds.

Fear not the label of panpsychist—such names cannot hurt you!\footnote{Actually, they don’t do you a lick of good at a confirmation hearing.} We cannot exclude the possibility that there might be some sort of experience associated with all manner of things\footnote{Cf. Thomas Nagel, Mortal Questions 193–95 (1979) (characterizing panpsychism as implausible but adding that “we know so little about how consciousness arises from matter . . . that it would be dogmatic to assume that it does not exist in other complex systems . . .”).}—including Congress considered as one entity.\footnote{Star Trek conventioneers: Try thinking of Congress as the BORG.} No doubt the possibility of a “group”-mind seems strange, but is it, on reflection, any more amazing than the Big Bang, quantum physics, an infant, a blade of grass, Jessica Simpson, or the best parking space in the world? And note that, in a sense, you are a group-mind—the 100 billion jittering neurons in your head somehow connect to a unitary sense of conscious self.\footnote{Cf. Edelman & Tononi, supra note 15, at 29 (noting that one “fundamental property of conscious experience is that it is inherently private, unified, and coherent—in other words, integrated . . .”).}

Can we say anything of legal significance concerning Congress’s mind—assuming for the moment it has one?\footnote{Equivalently, can I justify spending my time on this essay to the Dean?} One thing is plain: there is no reason to assume that any given “true” intent of Congress bears any relation whatsoever to any given intent of one its individual members. All of the thoughts of an individual human are somehow generated by (or otherwise connect to) neural activity in the brain. The nature of this relation between thought and physical activity is deeply mysterious. Note, however, the following trivially obvious fact: We do not determine what a person is thinking by “adding up” the mental states of that individual’s neurons. Assume for the moment that: (a) individual neurons enjoy some sort of mental life; (b) they can talk to us; and (c) Cara reports that she wants to eat some pizza. One would not attempt to confirm the truth of this report by checking whether a
majority of Cara’s neurons also want pizza.

One can hijack Professor John Searle’s famous Chinese-room thought experiment to confirm this point that the intent of a system as a whole bears no particular relation to any intents generated by its parts. Imagine that an English-speaker who speaks no Chinese has been locked in a room—call this person Darla. Pieces of paper with Chinese characters drawn on them are sometimes slid into the room. Darla has with her a rule book in English that does not tell her what any of the incoming characters “mean,” but that does instruct her precisely what to draw on pieces of paper which she then slides back out of the room. Unbeknownst to her, the incoming drawings are “questions” posed in Chinese to which her responses are nominally “answers.” Thrusting aside all practical objections, so long as Darla is working from a good enough rule book, from the perspective of those asking the questions on the outside, the room will be indistinguishable from a speaker of Chinese—even though Darla does not understand a word of it. For Searle, the moral of this parable is that mere manipulation of symbols pursuant to some set of formal instructions—whether by Darla in the room or by a digital computer implementing a program—is insufficient by itself to generate the sorts of meaning associated with mental experience. Therefore, a computer program, which is all about form, cannot generate a mind.

Some critics have responded that Searle looks for the mental content (or understanding) generated by the symbol manipulation in the wrong place—even though Darla herself does not know Chinese, perhaps the room itself does. In keeping with the animist spirit of the present endeavor, suppose for a moment it did—the room “converses” in Chinese with outsiders about world affairs even while Darla labors inside the room, wondering what to have for lunch and whether law school was such a good idea. As Darla stands to the room, so a congressperson stands to Congress. Just as the mental experience of the room bears no particular relation to the mental experience of its part, Darla, so, following a similar logic, there is no reason to think that any mental experiences of Congress bear any particular relation to the mental experiences of its members. Thus, even if we could identify for certain the unanimous intent of all 535 members of Congress with regard to some bit of statute, this knowledge would tell us nothing concerning the intent of Congress.

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40 Well, in some circles.
41 For one of Searle’s discussions of his Chinese-room thought experiment, see JOHN SEARLE, MINDS, BRAINS, AND SCIENCE 31–34 (1984).
42 Id. at 34.
And what might Congress itself think about anything? It is impossible to say because Congress’s construction is so different from our own. We can impute intentions (and other mental states) to other humans because we are constructed of similar stuff and behave in relatively similar ways. If we watch someone quickly eat a sandwich, we might with justice suspect that this person feels hungry or hurried or both. By contrast, as Professor Nagel explained thirty years ago in his famed essay *What Is It Like to Be a Bat?*, it is impossible to imagine the experiences of creatures that nature has equipped with different sensory organs. Bats navigate and find prey by echolocation, and we will *never* have any idea what this feels like. Although constructed out of humans, Congress is in a sense far more distant from us than bats—which at least are our distant evolutionary cousins and eat, mate, sleep, excrete, etc. Indeed, it is difficult even to guess what might count as Congress’s sensory apparatus—for instance, does it “see” with 1070 eyes? Or not at all? And, just as we can have no idea how Congress senses, so we can have no idea what Congress thinks or feels. It might not even like us.

Stipulate, then, that we will never know what Congress thinks about anything. Still, there is a tempting (albeit kind of cheap) argument to be made that Congress is not very bright. Our mental states seem to arise from the physical activity of neurons firing in the brain. The number and complexity of our potential mental states is therefore limited by the number of potential patterns of activity of our neurons. For humans, this is not such a problem, as our 100 billion neurons with their $10^{1,000,000}$ or so potential circuits leave room for us to sense innumerable shades of red, feel all manner of love and hate, wonder how many CSI programs CBS can possibly put on the air, etc. Just as the functional bits of the brain seem to be the neurons, so the functional bits of Congress are its members—i.e., what a brain does depends on how its neurons fire; what Congress does depends on how its members vote (or “fire”). Pressing this analogy, one might think of Congress as a brain with 535 neurons. That is about 99,999,999,465 neurons less than a typical human, but 233 more than the 302 possessed by the nematode worm, Caenorhabditis elegans. Draw your own conclusion.

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43 Nagel, supra note 1.
44 Unless you are Batman.
45 But no cheaper than the Batman joke. See id.
47 Professor Pasquale pointed out to me that one might regard the individual neurons of each congressperson’s brain as the functional bits of the brain of Congress.
considered as a whole, which would leave Congress with neurons to burn. I was hop-
ing no one would notice. He then said something about the “denominator” problem
in takings law. Being a law professor, I nodded sagely. Anyway, if only as a matter of
aesthetics, the worm analogy has just got to be right.