

# Dennett Explained

## An interview with Daniel Dennett

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## Abstract

Throughout his long career, Professor Daniel Dennett has been notable for bringing together the ideas of academic philosophy, workbench scientists, artificial intelligence pioneers, and even “cultish” intellectual figures like Julian Jaynes and J.J. Gibson. In this interview, Dennett discusses his philosophical roots, as well as his thoughts on Freud, predictive processing, psychedelics, consciousness, and ancient Athens. Dennett believes that philosophers have the ability to criticize and contribute to the science of the mind, and speaks to the virtues of cross-disciplinary glances and “hybrid vigor.” He believes that psychoactive drugs have potential scientific and therapeutic value. Experimenting with psychoactive substances, however, should be done within the proper settings, and not left to rogue agents.

**keywords:** *altered states of consciousness, cognitive science, consciousness, philosophy, psychedelics.*

Your published works—and interviews—span volumes and fields, conveying complex ideas through engaging words and thought experiments. The singular *Intuition Pumps and Other Tools for Thinking* (2013b) breaks the fourth wall of being a philosophy professor, allowing the reader access to your mental processes. Works such as *The Mind's I* (Hofstadter & Dennett, 1982) transcend genres as well as single authorship, posing deep questions to the philosophical, while also offering a doorway into philosophy for the inexperienced. *Darwin's Dangerous Idea* (Dennett, 1996) is as a clear a defense of evolution now, as it was before the current genomics era in biology. Even in your articles published in philosophy journals, your work retains an accessible feel to it. Such engaging and radically interactive types of philosophy are rare overall. The effect of your philosophical style has been to buck the typical insularity and over-professionalized nature of academic philosophy, providing an inroad for many people into some of the most valuable aspects of philosophical thinking, and also spurring an incredible amount of students into various areas of the cognitive sciences.

Where do you believe this strategy came from, and how has your perspective on communicating philosophy evolved over your career?

Well, my two chief advisors were W.V.O. Quine and Gilbert Ryle, who were both fine writers (who tried never to write a boring sentence and pretty well succeeded, at least for philosophically adept readers). I've also had, since I was an undergraduate, a suspicion of philosophers who seemed to go out of their way to make their work forbidding and technical and "deep." They didn't seem to want to explain what they were up to!

If you were to "start it all over" as a young person with the same mindset in 2018, do you think you would have stayed in academia and tried to break out again, or might you have explored other avenues for communicating philosophy?

The problem is that the audience for philosophy today includes many who don't have the time or patience or, in the end, interest to really dig into a topic; they want instant gratification. I once wrote a little fable about this, in my review of Bob Nozick's wonderful book (Dennett 1982):

There was once a chap who wanted  
to know the meaning of life, so he  
walked a thousand miles and climbed  
to the high mountaintop where the wise  
guru lived. "Will you tell me the meaning  
of life?" he asked.  
"Certainly," replied the guru, "but if  
you want to understand my answer,  
you must first master recursive function  
theory and mathematical logic."  
"You're kidding"  
"No, really."  
"Well, then...skip it."  
"Suit yourself."

You playfully characterized your earliest venture into academic philosophy as a mission to "Refute Quine," an endeavor which ultimately led you to become something of the "village Quinian" by the time you had arrived at Oxford for graduate school. Following Quine, you view science and philosophy as continuous (Ross, Brook, & Thompson, 2000). This led you to reject the analytic-synthetic distinction, accept the indeterminacy of translation thesis, and find affinity with American pragmatic traditions (Hookway, 2016). You stated that Quine's view of a philosopher's primary role is to "[provide] the conceptual clarifications and underpinnings for theories that are

testable, empirical, scientific,” though noted that “he didn’t get much chance to actually do philosophy in this vein” (Dennett, 2003). This in some ways contextualizes your place in the conceptual landscape of philosophy: At a deep level, the perspective of Quine deeply resonates through your thinking. Yet methodologically, you have diverged from Quine and his ilk in that you rarely resort to the technical, mathematical, or otherwise formal presentations of your ideas that characterizes much of analytic philosophy.

First, do you find these points to be accurate?

Yes!

Second, today, what do you see as the biggest disagreement that you have with Quine methodologically, and also concerning cognition?

Quine, as a logician, wanted to get everything into a strict, well-policed system of expression. I viewed that project as hopeless and ill-motivated, but the effort was nevertheless full of enlightening challenges and pitfalls.

In what ways do you feel you changed Quine’s mind throughout his career?

Quine had a long friendship with B.F. Skinner, and simply bought into many of his friend’s proposed behavioristic simplifications. In those days it really was premature to try to hypothesize much in the way of particular neural mechanisms for cognition, so behaviorism could be viewed as a prudent noncommittal way of getting an account of a system’s input-output competence. But I think I got him to see that his pure Skinnerian behaviorism was too simple, more of a “nice try” than a “good trick.” He softened his line on the abandonment of intentional idioms in science after he saw that there was a rather Quinian way of handling them—my “intentional stance.”

Your early career was characterized by the fact that you took the time to learn neuroscience and psychology and incorporated these studies into philosophy of mind and philosophy of language. For many years you have argued against philosophers and scientists alike on what the implications of scientific findings are for the study of consciousness (e.g., neuroscientific studies purporting to show that we do not have free will). This sort of pioneering interdisciplinary work sowed the seeds for the approach we take here at ALIUS: to generate scientific knowledge about “consciousness” using diverse methodologies and conceptual frameworks. Further, you have also engaged in plausible speculations about as yet unanswered empirical questions, such as how hallucinations work, how neurons learn through evolution, and the nature of consciousness. In doing so, you have often anticipated future trends in cognitive science. For example, in your speculation on hallucinations, you anticipated the essence of the predictive processing paradigm (Dennett, 1993). All of these actions comport well with the view that science and philosophy are continuous. Nevertheless, there is a difference between providing conceptual and clarificatory underpinnings for scientific theories, and providing speculative scientific theories themselves—even if it is a matter of degree.

First, when, in your mind, is it appropriate or useful for a philosopher to engage in the latter end of this spectrum, i.e., speculating on empirical questions? What is the role of this speculation?

I don't think there are any useful principles or policies here; it is a matter of seeing an opportunity and acting on it. I found myself at workshops and other meetings where scientists were describing experiments and asking them "what if you gave subjects this variation...?" or "how do you know that subjects aren't...?"...and so forth, and sometimes the reply would be "that's a great idea, let's try it!" I had enough hits with that policy that I got into the habit of thinking about what experiments I would run and why. My contributions in such cases are no different from any experimenter's suggestions. But perhaps my familiarity with all the "bird's-eye-view" issues that philosophers worry about sometimes gives me a better perspective; experimenters can get stuck in the trenches and forget where they are on the battlefield.

Second, a perennial question in philosophy of science is whether or not philosophers can tell scientists how to do better science. In what ways, if any, do you believe that a philosopher can tell a scientist how to do their job?

Anybody can, in principle, tell scientists how to do better science. Scientists are just as vulnerable to illusion, sloppy thinking, unrecognized presuppositions as anyone else. And sometimes 'hybrid vigor' is particularly valuable. Schrödinger was no biologist, but he certainly gave a major boost to biology in *What is Life?*. Judea Pearl comes to mind as an AI researcher (and a good amateur philosopher!) who has developed statistical and mathematical methods that can teach researchers in lots of other fields how to do their projects better. I would love to see a curious and well-informed poet ask a question that opened the eyes of, say, neuroscientists or (let's be ambitious) geologists. But philosophers should be better positioned than most others to provide such perspectives because they claim to specialize in thinking the unthinkable, expanding the imagination, critiquing the hidden assumptions, etc.

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Recently Carhart-Harris and Friston (Carhart-Harris & Friston, 2010) integrated psychiatry with predictive processing and neuroscience to argue that "Freudian constructs may have neurobiological substrates." For example they claim that the

brain's default mode network (DMN) plays a functional role similar to the Freudian ego concept, and that distributed cortical activity functionally implements Freud's primary and secondary processes (processes that control the id & ego, respectively). If this analysis is correct, then the "virtual governor" you discuss (e.g. in (Dennett, 2018)) may not be so virtual, and may instead have a more delineated structural substrate. This anatomical network is not a Cartesian Theatre in which a "second transduction" occurs (Hobson & Friston, 2016). Nevertheless, functionally it is like the manager of cerebral celebrity (if not the celebrity itself), and in this sense suggests a more centralized picture of consciousness in the brain than you have often advocated for.

What is your attitude toward incorporating Freudian concepts into contemporary theories of consciousness? Are you willing to swap the Cartesian Theatre for the Freudian Ego?

Way back when I was a freshman in college I became fascinated with Freud and read most of his books and articles, and a lot of secondary literature. He was clearly getting at some aspects of mind that have been largely ignored for the last fifty years, and it would be good to see some renaissance of his ideas, though his methods are rightly shunned, in the main. I think I've always been quite open-minded about renegade thinkers, taking seriously and even championing ideas of even rather cultish figures: Erving Goffman, Julian Jaynes, J. J. Gibson, to name three. One idea of Freud's that I want to take very seriously is simply the idea that some thoughts are harder—more painful—to think than others, and it has nothing to do with how much information they contain or how many steps away from the sensory periphery they are. Bringing the affective or emotional dimension into cognitive science is now getting underway, long overdue. In *Inside Jokes: Using Humor to Reverse-Engineer the Mind*, Hurley, Adams and I argued that *all* control in nervous systems is accomplished by "emotional" signals; there is no highest-level executive control system (as there is in GOFAI models of cognitive agents). So in the end Freud will have the last laugh, in a way, since stormy conflicts between emotional subcomponents of the mind will be the underlying dynamics of the *res cogitans*.

Has the intellectual deficit spending of the psychoanalysts been paid off to some degree by the predictive processing paradigm (perhaps in the same way affordances have been), leading to better construct validity of Freudian concepts? It is interesting to note that Kant and Helmholtz influenced (in a fairly complicated and not fully understood way) Freud and Jung (Brook, 2003; Jung, 1963), as well as the predictive processing paradigm (Clark, 2013; Swanson, 2016).

Maybe. I haven't given it enough thought yet.

Consider content in the brain that has not achieved much cerebral celebrity, but which might have important consequences for an individual's personal life if it did achieve a certain level of celebrity (e.g., a belief about needing to quit a job, or that one has left the front door unlocked). In Jungian psychology, dreams are thought to be a stage for the

unconscious to communicate to the conscious mind via non-linguistic symbols. Predictive processing theories of dreams (such as the one you give in *Consciousness Explained*) state that dreams are expectation driven. It seems reasonable to suppose under this expectation-driven dream process, that cerebrally unfamous fears, desires, apprehensions, and so forth help to influence the dream narrative. Might such a situation then allow for a meaningful analysis of dreams as a way of uncovering “unconscious” material? In this sense, does predictive processing also lend construct validity to Jungian ideas?

That’s a good way of putting it. Yes, the construction of content in dreams is clearly not random, so figuring out what processes interact to generate these remarkable sequences or narratives is a project that is likely to bear fruit in the near future. I can imagine somebody figuring out ways of biasing dreams by using optogenetic interventions for instance. The royal road to theory confirmation here, as always, lies in showing how a model predicts the results of well-aimed disruptions of the system.

Neurological recording/stimulation devices and human-computer interfaces are progressing rapidly. These technologies represent “Read/Write” access to the human brain. How do you think these technologies will change the study of human consciousness? Do you think that such technologies will prove to be an acid test for the computational theory of mind?

Yes, as I just said.

If you could design your dream empirical experiment in order to test some aspect of consciousness, what would you do? Feel free to ignore financial, methodological, or ethical constraints. What theory would this experiment aim to prove or disprove? If not answered above—what empirical evidence (if any) do you think it would take to sway your critics on *Consciousness*?

If I could design my dream experiment right now, I’d be off doing it. Give me a year or so and ask me again. Back when I wrote *Consciousness Explained* (Dennett 1995) and *Sweet Dreams* (Dennett, 2006), I was close to the cutting edge of the research going on, but I then took a few years off to work on religion, which struck me as a pressing political and moral obligation. I don’t regret the decision at all, and it permitted me to get my thoughts about cultural evolution and its importance to the mind into much better shape and detail, but when I returned to full-time thinking about consciousness, I found I had some serious catching up to do. I’m happy with how well the theory sketch in *Consciousness Explained* (Dennett 1995) has stood up for twenty-five years, but now it’s time to fill in a lot of details and extend it. In addition to the blossoming of new experimental paradigms—on beyond masked priming and blindsight to inattention blindness and the attentional blink and others—there is mounting evidence, and hints of consensus, on the brain regions

involved. There is still some yawning chasms—nobody yet has a good account of how content is registered and transmitted, so far as I know—but there’s now an embarrassment of riches to sort through, not a blank wall of befuddlement.

The idea of “affordances” (the idea that organism’s perceive possible interactions with objects in the environment) held an important role in your recent work *From Bacteria to Bach and Back* (Dennett, 2017). As far as we can tell, your writing about affordances began during your discussions of the predictive processing paradigm (Dennett, 2013a, 2014). You seem to think (Dennett, 2014) that predictive coding provides a way to pay off the intellectual debt that affordances took on when they were originally introduced by Gibson in the context of ecological psychology (Gibson, 1979). In particular, you suggest that brains produce “affordances galore” (Dennett, 2014) by predicting the ways in which the organism can interact with objects in the environment. Relatedly, there is the idea of *Umwelt*, referring to the aspects of the environment that make a difference to an organism, and with which an organism can interact. This concept has origins in the field of semiotics (Salthe, 2014; Uexküll, 1910). What led you to start thinking that affordances and *Umwelt* have an important role to play in how scientists study consciousness? In what ways does your concept of affordances differ from Gibson’s?

I’ve been saying for many years that the brain’s job is to “produce future” (I’m not alone in making that observation of course). Gibson’s idea of affordances and von Uexküll’s idea of the *Umwelt* together draw attention to the economy or efficiency of evolution: it is always optimizing, selecting the arrangements that most effectively, swiftly—and with energetic efficiency—do what needs to be done. Don’t waste time and energy on information-gathering and processing that won’t often pay for itself. Nature is a ruthlessly efficient finder of shortcuts and acceptable half-measures, which is why we find ourselves living in a macroscopic world of colored solid surfaces, liquids that don’t seem to be swarms of mobile molecules, invisible gases, etc.

If philosophers of mind discuss psychedelics, which they rarely do, they often treat them as little more than inducers of hallucinations and delusions (i.e., non-veridical perceptions and beliefs). Such a perspective does not comport well with people who have actually used these substances, for whom hallucinations and delusions play a relatively small part of the experience. These people instead typically value psychedelics’ ability to: facilitate metacognitive re-evaluations of the way they have been thinking, feeling, or acting (e.g., come to the realization that their alcoholism is killing them); temporarily change their sense of self, including the phenomenon of “ego death” whereby individuals come to the realization that their own consciousness is indeed, as you put it, a user-illusion; and in other ways positively impact long-term personal development. While this psychonautic autoheterophenomenology may provide data that is unconvincing on its own, there have now been a swell of studies concluding that psychedelics have substantial therapeutic value (Bogenschutz et al., 2018; Carhart-Harris & Goodwin, 2017; Garcia-Romeu & Richards, 2018). The clinical

value of psychedelics suggests a picture in which psychedelics impact the mind in a much more targeted, structured, interesting, complicated—take your pick—way than in the traditional psychotomimetic model, wherein psychedelics simply induce temporary psychotic like symptoms. There are many, for this reason, who believe that psychedelics provide an important inroad into studying consciousness and cognition at large. An interesting quote on this matter comes from Terence McKenna (Lorenzo 2017):

*“I don't think you could discover consciousness if you didn't perturb it, because as Marshall McLuhan said, 'whoever discovered water, it certainly wasn't a fish.' Well, we are fish swimming in consciousness; and yet we know it's there. Well, the reason we know it's there is because if you perturb it, then you see it; and you perturb it by perturbing the engine which generates it, which is the mind/brain system resting behind your eyebrows. If you swap out the ordinary chemicals that are running that system in an invisible fashion, then you see: it's like dropping ink into a bowl of clear water—suddenly the convection currents operating in the clear water become visible, because you see the particles of ink tracing out the previously invisible dynamics of the standing water. The mind is precisely like that, and the psychedelic is like a dye-marker being dropped into this aqueous system. And then you say, 'Oh, I see—it works like this...and like this.'”*

Do you believe that psychedelics can play an important role in the study of the mind? What is the role of various “altered states of consciousness” in your work? For example in Dennett (2017) you talk about LSD in the context of hallucinations, but we find few other discussions on the topic.

Yes, you put it well. It's risky to subject your brain and body to unusual substances and stimuli, but any new challenge may prove very enlightening—and possibly therapeutic. There is only a difference in degree between being bumped from depression by a gorgeous summer day and being cured of depression by ingesting a drug of one sort or another. I expect we'll learn a great deal in the near future about the modulating power of psychedelics. I also expect that we'll have some scientific martyrs along the way—people who bravely but rashly do things to themselves that disable their minds in very unfortunate ways. I know of a few such cases, and these have made me quite cautious about self-experimentation, since I'm quite content with the mind I have—though I wish I were a better mathematician. Aside from alcohol, caffeine, nicotine and cannabis (which has little effect on me, so I don't bother with it), I have avoided the mind-changing options. No LSD, no psilocybin or mescaline, though I've often been offered them, and none of the “hard” drugs.

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As a philosopher, I have always accepted the possibility that the Athenians were right: Socrates was quite capable of corrupting the minds of those with whom he had dialogue. I don't think he did any clear lasting harm, but it is certainly possible for a philosopher to seriously confuse an interlocutor or reader—to the point of mental illness or suicide, or other destructive behavior. Ideas can be just as dangerous as drugs.

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Since psychedelics were made illegal in 1966, much of psychedelic research has been carried out by “underground” scientists and psychonauts. While there has been progress in the last 50 years in terms of making psychedelic research more respectable and possible, it is still extremely limited. While now “above ground,” much of the work is outside of academia. For example, much research is carried out or organized by the Multidisciplinary Association for Psychedelic Studies (MAPS). Our group ALIUS is unaffiliated with any academic organization. Altered States of Consciousness research is not alone in this flight from academic halls. Another example, with very different causation, is that private and governmental sector AI research sectors are surpassing academic AI research. Similar escapes from academia may occur for biological areas like genomics, brain-computer interfaces, and neurofeedback as well.

Do you think that universities should make a greater effort to absorb or otherwise integrate these extra-academic research veins? Or do you think it is admissible for schisms in research to persist, with only the migration of researchers to and fro facilitating communication between?

Do you think philosophers have a unique position to publicly advocate for the academic and scientific study of (altered states of) consciousness? Is it important to impress upon people that not only are psychedelic substances useful for psychotherapeutic purposes, but that they are also important ingredients in studying and understanding our ordinary mental functions?

I think that the policies that have been hammered out in academia for doing ethically defensible research, while not perfect, should be followed everywhere, and I don't know how that can be enforced. Perhaps—perhaps—by passing legislation making developers, wherever they are, strictly liable for any harmful applications of their products. Strict liability laws (which disallow ignorance as an excuse), if done right, can set up prudent systems of self-policing: investors won't invest their money if they know that they cannot insure themselves against catastrophic losses in class action suits, etc, and insurance companies will not provide coverage unless they have convinced themselves that the insured have taken all reasonable steps and followed all the rules scrupulously. I think these conditions should be in force for AI as well as for psychedelics and gene-tinkering. There will still be rogues, for whom such risk

is not motivating, apparently, and they should not be romanticized or honored at all; they should be regarded as intellectual vandals. The power to do tremendous harm to society, to life itself, is growing, and it will be very hard to keep irresponsible adventurers from launching projects that have terrible consequences.

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You have said that we should teach children about religion, and in fact all of the world's religions, as a way to vaccinate them against absolutist beliefs held by their elders (Frazier, 2009). Pluralistic education may vaccinate children against traditional religious extremism, but it is not clear that such an approach would prevent the adoption of differently-dangerous views such as extreme moral relativism, nihilism, or worse. Since you are an advocate of maintaining a “Moral Agents Club,” legions of children adopting these latter types of perspectives and engaging in a bit of the old ultraviolence would be a bad thing. How then should we tell children which set of behaviors are actually preferable?

“Show, don't tell”—as the teachers of fiction-writing urge. The project of rearing and socializing our children so that they can enter the adult world with a good chance of success is well-known to be a daunting challenge, requiring patience, persistence, judgment and flexibility, which would be too much to expect of many if not most of us were it not for the biases inherited with our genes: we normally find our offspring cute, cuddly, adorable, and worthy of considerable sacrifice. There is plenty of cultural variation around this central pattern, but no exceptions.

Don't get between a mother bear and her cub, and don't get between a human mother and her baby. (This holds for fathers too, of course, but for well-explored biological reasons, careless fathers are much more common than careless mothers.) The natural, genetically endorsed tendency of all of us to love and protect our children has been wisely—if largely unwittingly—exploited by the processes that have generated our moral policies and their supporting intuitions. In short we try not to “spoil” our children. Some parents succeed better than others. It is a tightrope act, with mistakes and pitfalls on both sides. Too much blaming and scolding can create a guilt-ridden adolescent and adult, to say nothing of the excesses of corporal

punishment and outright abuse. Too little “supervision” can produce young adults who, “through no fault of their own,” are burdened with an unwarranted sense of entitlement, unable to summon the self-control required to negotiate the complex social world of adulthood without constantly falling into conflict with their fellow citizens and with authority.

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Negotiating these opposing pitfalls is a delicate task, especially in light of the fact that every move we make is public, discussable, criticizable, likely to “telegraph our punches” to those we are trying to influence (for their own good, of course, but mainly for the good of society at large). We are not considering the most effective and humane policies of cattle raising or fishing or, for that matter, bricklaying, where the objects of concern are oblivious to our reasoning. We are considering how we, language-using, comprehending adults should go about influencing each other’s behavior. This fact is sometimes forgotten by proponents on one side or another.

What would you like your stance on Plato to be remembered as? Or, what did Plato get right?

I once set out to produce a textbook on Plato’s theory of forms, looking at all the Platonic texts that arguably could be considered to deal with the theory of forms, and inviting students to harmonize them—by reordering them, reinterpreting them, even rejecting some texts that didn’t “fit” an otherwise good version. This was in part inspired by Gilbert Ryle’s book *Plato’s Progress*, which I read in draft when I was Ryle’s student. Ryle called it his “naughty book” since it was so irreverently critical of much of the scholarship on Plato, and advanced an astonishing but speculative theory: Plato’s dialogues were composed as plays to be performed at the Olympic Games, and Plato himself typically played the role of Socrates! This was a project I abandoned in the late 60s, in spite of getting encouragement from publishers, in part because I have never been happy with either Plato’s methods or the fruits of his labors. He and Socrates seduced philosophers into several millennia of essence-hunting and counter-example-mongering that we are only just now recovering from. I view Plato’s views as wonderful examples to study, in the diagnostic spirit of “let’s see if we can pinpoint where these brilliant folks misled

each other.” Their crowning achievement was, you might say, the invention of self-conscious meta-cognition, thinking carefully about thinking. That habit has been immensely fruitful across all human inquiry, but philosophers have often been trapped in diminishing returns by narrowing their focus onto their own thinking about their own thinking about their own thinking, while ignoring the thinking going on among their less self-absorbed contemporaries.

Genomic and paleological analyses suggest that New World monkeys split off from Old World monkeys within the last 60 million years, and arrived in South America far before any human ancestors (Bond et al., 2015; Perelman et al., 2011). How the New World monkeys were able to reach South America is still something of a mystery. It is not clear that they would have been able to amble across frozen Northern straights, or persist long travels on a floating mass of vegetation diffusing across the Atlantic. Would you care to offer a speculation of your own?

I'd guess that some band(s) of monkeys in Africa got swept out to sea on some floating vegetation and made it all the way across the South Atlantic to South America (or the Caribbean). That seems to be the favored hunch among the experts, but who knows what will turn up to settle the matter? You express doubt that this would be possible, but I don't see why. How tight was the genetic bottleneck through which New World monkeys had to pass? I don't know, and the articles I've skimmed don't discuss it, but I would think this bottleneck would leave a trace after 30-40 million years, discoverable via bioinformatics today.

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