Dear Friends of Michigan Philosophy,

Greetings from Ann Arbor! I am pleased, once again, to be able to bring you up to date on the Philosophy Department’s recent accomplishments and activities. While there have been changes in personnel, and while the Department faces major challenges, our basic mission remains the same — providing our students with the best possible overall education in philosophy — and we are carrying out this charge with great effectiveness and enthusiasm. Generations of faculty, students, and staff have laid a strong foundation upon which we continue to build. Michigan remains one of the premier centers of philosophical thought in the world, with at most four or five peers, and our students continue to excel in a wide variety of intellectual and non-academic pursuits. We are also fortunate to have large base of alumni and alumnae who support the Department in many ways. This fall, for example, a generous donation from Marshall M. Weinberg funded a major conference “The Future of Cognitive Science” that brought six major figures in philosophy, psychology, biology, cognitive science and physics to campus for two days of talks. The conference was terrifically informative, and I am sure it will provide a fertile ground for interdisciplinary discussions for a long time to come. (Beginning in January, you will be able to view filmed versions of the conference presentations on the Departmental website: http://www.lsa.umich.edu/philosophy/.)

Faculty News. Michigan’s philosophy faculty engaged in a wide variety of scholarly activities this year. As always, our members received many awards and honors. Elizabeth Anderson has been elected Fellow of the American Academy of Arts and Sciences. Election to the Academy, one of the Nation’s oldest and most prestigious honorary societies, is an extraordinarily high honor. Liz joins Allan Gibbard, Larry Sklar, Ed Curley, Ken Walton and Peter Railton as Academy Fellows. Ed Curley received a major fellowship from the Institute for Advanced Study at Princeton for a project on religious toleration. Ed was also honored as LSA’s Distinguished Senior Faculty Lecturer for 2008. Boris Kment was awarded a fellowship from the National Endowment for the Humanities (2008-09), and received the Emerging Scholars Prize from the Institute for the Humanities, University of Michigan. Larry Sklar completed his term as President of the Philosophy of Science Association, and delivered the Presidential Address, “I’d Love to Be a Naturalist - If Only I Knew What Naturalism Was” this November. Thony Gillies received a prestigious NSF grant “Context and Accommodation in the Semantics of Modal Constructions.” Thony used some of
the money to run a highly successful interdisciplinary speaker series last winter.

The Department welcomes three new faculty members this year, all with interests in the philosophy of science. Professor Gordon Belot, who has held positions at NYU, Princeton, and Pittsburgh, works on a wide variety of topics in philosophy, with special focus on the metaphysical issues that arise in space-time theory. Professor Laura Ruetsche, who has held positions at Middlebury and Pittsburgh, focuses on issues having to do with the interpretation of quantum mechanics. Laura is also a leading figure in the study of gender and science. Assistant Professor David Baker, a Michigan B.A. who received his Ph.D. from Princeton this year, works on metaphysical and epistemological issues that arise in quantum theory. David also has substantial research interests in the philosophy of religion and moral philosophy. When added our substantial existing strength in the area, these three make Michigan perhaps the best place in the world to study the philosophy of science.

Though these additions soften the blow, we must bid bittersweet farewells to three valued member of the faculty. After more than twenty years of service, Steve Darwall has retired from the University, and has accepted a position at Yale. Steve was one of our most dedicated undergraduate teachers and most active graduate advisors. He also served with uncommon distinction in a variety of important administrative roles, including Department Chair, Director of the LSA Honors Program, and Chair of the LSA Library Committee. We wish Steve all the best in his new position. Ian Proops, an Associate Professor who specializes in the history of analytic philosophy, will be taking up a position at the University of Texas (Austin) beginning in January. I am certain our students will miss Ian’s well-received introductions to philosophy, and his popular courses on Kant and on Frege, Russell and Wittgenstein. Finally, Assistant Professor Andy Egan will be leaving to take up a tenured position at Rutgers beginning in September. Andy, who works in many central areas of philosophy, was an especially active graduate advisor. We are unfortunate to lose him.

Finally, on a sad note, I must announce that Arthur Burks, one of the giants of Michigan philosophy (and computer science) passed away on May 14, 2008 in Ann Arbor. For a tribute to Art and an account of his many contributions to the University, the Department and the discipline of philosophy see p. 16.

Undergraduate News. Our reputation for outstanding teaching attracts students to our major, and so our undergraduate program continues to grow. The 2007-08 academic year showed an increased enrollment of one hundred forty-one concentrators and eighty-three minors. We awarded sixty-six B.A. degrees in April 2008 and expect to award about the same number in April 2009.

This year’s William K. Frankena Prize for excellence in the undergraduate concentration (funded by a generous contribution from Marshall M. Weinberg) was awarded to Amanda J. Hicks. Amanda will be attending law school in the fall of 2009. The Haller prize, which is awarded for exceptional papers written in an upper-level philosophy course, was given to Chris Detjen for his essay “Rawls in the Age of Floods: Ensuring Climate Justice Through Time and Space.”


The Department now sponsors three undergraduate philosophy discussion clubs: the Philosophy Club; the Socratic Club, and the Student Secular Alliance. It is great to
see so much philosophical discussion taking place outside classroom settings. The undergraduate student journal, the Meteorite, continues to thrive and is being published both in print and online. Check the department’s web site for more information on the clubs and Meteorite:

http://www.lsa.umich.edu/philosophy.

Graduate News. Our graduate students continue to win prestigious awards and develop their professional reputations. Vanessa Carbonell, Dustin Locke, Howard Nye and Tim Sundell all won Rackham Predoctoral Fellowships for 2008-09. This is a highly competitive prize and the Department has never had so many recipients in one year! Vanessa also received a Rackham Graduate School Outstanding GSI Award, a great and rare honor that goes only to the most effective graduate student instructors. Dustin also won a Rackham Research Grant to fund time at the Australian National University and the University of Sydney. David Dick was awarded the coveted Charlotte W. Newcombe Doctoral Dissertation Fellowship for the academic year 2008-09. David also received the Hough Fellowship in Ethics for Winter 2008. Steve Campbell, Jonathan Shaheen, and Dave Wiens all received Weinberg Summer Fellowships. Jonathan also won a coveted Fulbright Fellowship to study logic in Amsterdam for the next two years. First year student, Nat Coleman won a Rackham Graduate Student Research Grant. Alexa Forrester was awarded the Patricia Susan Feldman Award for Excellence in Philosophy. Eduardo Garcia-Ramirez was awarded a prestigious fellowship by the Mexican Government. The first Marshall M. Weinberg Summer Dissertation Fellowship went to Erica Lucast Stonestreet. Erica also won the University’s Susan Lipschutz Award.


This year’s Charles Stevenson Prize for Outstanding Candidacy Dossier went to Amanda Roth for her excellent papers titled “But You Don’t Respect Me...” and “Dewey, Feminist Epistemology, and Objectivity: An Internal Realist Interpretation.” The John Dewey Prize for outstanding performance as a Graduate Student Instructor went to Tim Sundell. Both prizes are funded by a generous gift from Marshall M. Weinberg (B.A. ‘50). The Cornell Fellowship for Outstanding Intellectual Curiosity and Scholarly Promise was awarded to Ian Flora.

The Department saw four of its students complete dissertations during 2007-08: Josh Brown, Jim Staihar, Erica Lucast Stonestreet and Gabriel Zamosc-Regueros. For further information on these students see “Spotlight on Recent Graduates” (p. 17).

Events. As usual, we had a busy schedule of events this past year. Peter Railton delivered his inaugural lecture as the John Stephenson Perrin Professor of Philosophy. His “As the Eye to a Star...: toward a Theory of Desire and of all-things-considered-rationality in Desire” was received by a large and appreciative audience. Carl Hoefer, from Universitat Autònoma de Barcelona was the Department’s Weinberg Distinguished Visiting Professor for 2007-08. Carl taught a seminar on the philosophy of probability and philosophy of science. He also delivered the Marshall M. Weinberg Lecture. His provocative talk, “Chance, Time and Newcomb Problems” generated a great deal of productive philosophical discussion.

Professor Stephen Yablo of MIT was our Nelson Philosopher-in-Residence for the fall of 2007. He delivered three fascinating lectures on aspects of metaphysics,
philosophy of mind, and language entitled: “Truth and Aboutness,” “A Problem about Permission and Possibility,” and “Extrapolation.” In October, the Department sponsored a two-day conference that focused on metaphysics and philosophy of mind in early modern philosophy. Tad Schmaltz of Duke, Alison Simmons of Harvard, and Dan Kaufman of Colorado presented papers to large, receptive audiences. The twenty-ninth Spring Colloquium, which is run by our graduate students, was entitled “Philosophical Methods.” Alexandra Plakias organized the event, which featured the speakers Frank Jackson (Princeton and La Trobe), Jesse Prinz (North Carolina), and John Doris (Washington University). Graduate students commentators were Tim Sundell, Alex Plakias, David Plunkett and Neil Mehta.

This year’s Tanner Lecture on Human Values was delivered by Brian Skyrms, Distinguished Professor of Logic and Philosophy of Science and Economics, at University of California Irvine. His lecture “Evolution and the Human Contract” sought to explain how moral norms of behavior might have arisen in an evolutionary environment in which all individuals are seeking to maximize their own well-being. The ensuing Tanner Symposium featured comments from the philosopher Michael Smith (Princeton), the political scientist Elinor Ostrom (Indiana) and economist Peyton Young (Oxford and The Brookings Institution).

The Department also hosted talks by Pierre Destrée (Louvain), David Estlund (Brown), Richard Kraut (Northwestern), Marc Lange (North Carolina), Margaret Little, (Georgetown), Genoveva Martí (ICREA & Universitat de Barcelona), Trenton Merricks (Virginia) and Katja Vogt (Columbia).

I hope you have a chance to read Eric Lormand’s lucid and captivating article “Function: Under Construction” which follows this letter. The essay investigates some of the more difficult and perplexing issues in the philosophy of mind. It previews work that will appear in a new book Eric is completing, entitled Staring Down the Mind’s Eye.

I wish you the best for the coming year!

Sincerely,

James M. Joyce,
Chair
FUNCTION UNDER CONSTRUCTION
Eric Lormand

Consciousness seems to depend on mental representation or meaning, on what it is for a mental state to be “about” some topic. What something is “about” seems to depend on its teleological “functions”—what it is “supposed to” do or what it is somehow “defective” if it does not do. Understanding such teleological functions is Job One of this essay. My goal is to describe a general “constructive” theory of functions which I think improves and unifies the dominant heretofore competing theories. Before getting to Job One, however, I will first raise the stakes by discussing consciousness and its connections to morals and meaning.

JOB TWO

How it is that anything so remarkable as a state of consciousness comes about as a result of irritating nervous tissue, is just as unaccountable as the appearance of Djin when Aladdin rubbed his lamp. That was the pessimistic assessment at the dawn of scientific psychology, from the otherwise famously optimistic biologist Thomas Huxley, known as “Darwin’s Bulldog”. Despite the many subsequent scientific advances in understanding the mechanisms of perception, thought, and communication, and despite the many subsequent philosophical advances in understanding the nature of mental representation and meaning, conscious experience is still The Rub.

Contemporary Doubting Thomases converge on a general characterization of the mystery. Thomas Nagel writes that “consciousness is what makes the mind/body problem really intractable”, identifying its most troublesome feature thus:

An organism has conscious mental states if and only if there is something it is like to be that organism—something it is like for the organism. We may call this the subjective character of experience.

Joe Levine similarly insists that “what is at issue is the ability to explain qualitative character itself; why it is like what it is like to see red or feel pain”. It would be good to give clear examples of conscious states beyond seeing red and feeling pain, to contrast these with clear cases of nonconscious states. Unfortunately, there are precisely zero noncontroversial candidates for nonconscious states, and a surprisingly long list of controversial candidates for conscious states.

Here is the quickest and most sweeping way to see that there are no untendentious examples of nonconscious states. Since it is so difficult to explain experience as a combination of nonexperiential things, some influential philosophers have been driven, by respectable argument, to the view that experience is a fundamental feature of the world, like gravitation or electromagnetism or whatever underlies them. But just as virtually everything exerts fundamental forces like gravitation and electromagnetism, so if experience is fundamental we might expect virtually everything to have experiences—even cells and rocks and raindrops and atoms. This is called “panpsychism” or, more precisely, “panexperientialism”. To be fair we cannot conveniently dismiss panpsychism using bedrock assumptions about which entities lack experiences.

To zoom in on states that are uncontroversially conscious experiences, we have to zoom in on creatures that are uncontroversially conscious experiencers. This calls for postponing discussion of the following cases:

1a: Nonbiological beings such as laptops, robots, deities, and ghosts—(potential) robots seem nonconscious because they aren’t alive, but (potential) spirits seem conscious despite not being alive.

1b: Nonhuman biological beings such as plants, animals, and extraterrestrial life—some animals seem to have experiences (bugs? shrimp? lizards? pigeons? bats?), but perhaps a degree of self-consciousness is required for full-fledged experience, and perhaps only language users qualify. At the other extreme, vegetarians tend to fall silent when roast-beast eaters ask how they know plants do not feel pain.

1c: Humans far from adulthood, such as fetuses, infants, and small children—some of the dispute about abortion turns on whether fetuses suffer, an intuitively open question. It would be a symptom of pathology intuitively to deny experience in the face of a normal newborn or a toddler, but to deny this based on the theoretical need to explain self-consciousness or “childhood amnesia” is merely a symptom of philosophy.

1d: Adult human beings under extreme medical duress, such as comas, brain trauma, or anesthetic drugs—we entertain tales of near-death experiences from the nearly brain-dead, and we worry (with indirect evidence that this has often happened) that anesthetics merely paralyze us and make us forget the excruciating experiences.

1e: Medically healthy human beings whose minds have undergone extremely limited developmental paths, such as people extremely mentally impaired or people raised by wolves—there are live theories according to which consciousness is a sophisticated cultural achievement rather than a primitive biological achievement.

1f: Apparently nonactual beings culled from philosophical thought experiments, such as alleged zombies, group minds, and homunculi or sentient subsystems within minds. As usual, theorists disagree squarely about the proper assessment of such thought experiments, about what it is intuitive to say about imagined cases, and about whether the cases play tricks on intuitions.
That leaves, as noncontroversial experiencers, only Human, Old-enough, Minimally-healthy, Incarnate Experiencers, or “Homies”, for short. I am a Homie and I write as if you are too. If you doubt there are Homies besides yourself, treat the plural forms of “Homie” and “experiencer” as typos, and read “we” and “us” as applying specifically to Your Highness.

What sorts of Homie states are uncontroversial examples of experiences? Here I count six categories of nonstarters. These states too theoretically charged for us to begin with.

2a: Intuitively nonmental states, including both “outer” states such as one’s location and hair color, and “internal” states that contribute to behavior, such as the conditions of one’s digestive system, one’s atomic particles, and one’s brain chemicals.

2b: Aspects of our minds that are merely dispositional, such as forgetfulness, cleverness, and skills—since dispositions need not even be exercised to be real, it is odd to imagine them constantly participating in our swarms of conscious experiences, but perhaps they participate in a way that is hard to separate out (forming part of a constant background of experience, say), or perhaps the subsystems underlying these dispositions within our minds have these states as their own experiences, separate from “ours” (see category 1f above).

2c: Sensory-deprivation states such as those during sleep (including dreams, sleepwalking and sleeptalking), hypnosis, or deep meditation—perhaps dreams do not happen consciously during sleep, but instead dream scripts are nonexperientially smuggled into memory, so that upon waking we misremember ourselves as having had conscious dream experiences during sleep.

2d: Individual states that persist through sleep, even if they also manifest themselves during wakefulness, such as beliefs, desires, and other “propositional attitudes.” If an attitude is nonexperiential during sleep, plausibly it is also nonexperiential during waking, perhaps merely being accompanied during waking by separable experiences (e.g., visual imagery) that do not persist during sleep. So, wakeful attitudes inherit controversial status from their sleeptime forms.*

2e: States that are deeply hidden from introspection, such as Freud’s repressed unconscious, “blindsight” states that enable blind people to guess correctly about visual stimuli, retinal states and other “drafts” in the early stages of vision, Heidegger’s alleged primordial ways of being in the world, and Chomsky’s alleged grammatical know-how. Someone who maintains that these are experiential can easily explain away contrary intuitions by the fact that the states are not introspectible.

2f: Introspectible states that are not clearly introspected, such as the fuzzy boundaries at the edges of our visual fields, the faint pressures around our bodies a moment before we attend to them, and fleeting, subliminal perceptions—maybe they contribute to experience; maybe they don’t; maybe they (or states in any of the other categories) are vague borderline cases that are not quite experiences and not quite nonexperiences.

Fortunately, there are uncontroversial positive examples of conscious experiences. I think it is best to search first for principles and theories that work for these clear cases. In dealing with the unclear cases (someday), I think it best to rely on the resulting theories rather than our shaky intuitions.

I group the short remaining list of clear conscious experiences into four overlapping categories, with the proviso that these states are only clearly conscious when they are clearly introspected by Homies:

3a: Perceptions (and misperceptions) caused by sense organs, such as normal tastings or seeings of environmental objects, and degraded appearances of afterimages or ringing-in-the-ears. (Mis)perceptions differ from beliefs in being tightly bound to stimuli and behavior (such as guiding visuomotor skills), and being limited in reasoning and in subject matter.

3b: Bodily sensations, such as diffuse sensations of warmth or muscular fatigue, and more pointlike pains, tickles, or itches.

3c: Perception-like imaginings, such as voluntary envisioning or “replaying” of one’s own actions or perceptions, and involuntary nonlucid hallucinations—but excluding dreams, due to their occurrence during sleep.

3d: Elements of “streams” or “trains” of thought, such as verbal talking to oneself, or reading with the mind’s eye, and nonverbal thinking in pictures or making predictions by running through a (scale) model in one’s head. Such thoughts differ from beliefs—for example, although a single belief may persist while one is sound asleep, no single thought does.

What does consciousness require? The first sign that there may be some dependence of consciousness on meaning is that all these clearest cases of conscious experience are clearly
representations. (It is less plausible that meaning depends on consciousness, because not all clear mental representations are clearly conscious.) Perceptions and misperceptions typically indicate allegedly objective features of external objects. For example, a visual sensation might represent a certain spectral-reflectance feature or a shape feature at a certain place, or might categorize an object on the basis of many such features. Experiences of pressure, warmth, or limb position involve bodily (mis)perceptions of pressure, warmth, or limb position, while in pain experiences we (mis)represent parts of our bodies as throbbing, burning, stabbed, pounded, pinched, pulled, etc., and in each tickle or itch experience one represents parts of one’s body as being rubbed or pricked with very specific intensities, directions, speeds, and contact-point sizes. Imaginings plausibly involve the same representational mechanisms involved in the later stages of perception and bodily sensation. Streams of thought seem to be constituted by imaginings of words or of speech acts, typically auditory or visual ones, as well as imaginings representing nonverbal items. It seems difficult to imagine a conscious state that represents nothing at all. And it seems difficult to vary what an experience is like without varying the experience’s subject matter, or how it represents its subject matter. So it is tempting to view representational features of experience as prerequisites for conscious features of experience.

A second sign that there is some dependence of consciousness on meaning is that in all the clearest cases, conscious experiences are themselves represented by their bearers. A conscious experience not only makes its subject matter seem to exist (with certain features), but also itself seems to exist (with certain features)—seeing blurrily or clearly, hurting severely or mildly, forming images in one’s head or body, etc. As Nagel emphasizes, there is not only something it is like to see red or feel pain—a feature of the seeing or the pain—but something it is like for the organism. Since the state itself is obviously in the creature’s possession, “for” would be redundant unless it means “in the creature’s view”, so the requirement is plausibly that there is something the state is like as represented by the creature. Theorists differ about whether a creature introspects the state by thinking about it, or more primitively by inwardly perceiving it, or by having the state somehow be in part about itself. Theorists also differ on whether consciousness requires ongoing introspection or mere ease of introspectibility. But in any case for a creature to have clearly conscious experiences it must be capable of mental representation.

Meaning and function

Now, what does mental representation require? The first sign that there is some dependence of meaning on teleological function is the nature of misrepresentation, of a misfit between what is meant and what is there. True beliefs, accurate perceptions, and fulfilled desires seem to meet some norms of success that false beliefs, misperceptions, and unfulfilled desires fail to meet. A belief that it is raining ought to go way when the rain does. These are not statistical norms (as if trillions of falsehoods were better than one), and aren’t moral norms (as if commandment XI were “thou shalt not miss thy guesses”). It would be difficult to explain them as practical norms about means to one’s ends, since any desire for an end is itself a success or failure in the sense to be explained. So it is tempting to try explaining the relevant norms in some fourth sense, as functions. Functions also are not statistical patterns, and aren’t moral principles. And it would be difficult to explain functions as practical means to desired ends, since any desire for an end seems itself to have teleological functions in the sense to be explained.

On the other hand, some mental representations misrepresent without any failure or malfunction. Consider—and remember for later—the philosopher’s Swampman, a particle-for-particle match for a Homie, suddenly and accidentally formed when lightning struck the muck. It would be a malfunction to believe in Swampman, since there’s no such being, but it isn’t a failure to have an idea of Swampman, or a defect to imagine that swamp lightning formed your physical twin. Nevertheless such representations have their own semantically-relevant teleological functions: under various circumstances ideas are supposed to help form beliefs and desires with related meanings, and under various circumstances imaginings are supposed to help test or practice the formation of beliefs and desires with related meanings. So it remains plausible that for a creature to have mental representations it must be capable of having teleological functions.

A second sign that meaning depends on functions is that both share many eerie features regarding how they enter into apparent explanations. (It’s less plausible that function depends on meaning, because not all things with functions have meaning.) Since this moves us squarely into discussing functions, I describe it in the next section.

JOB ONE

To emphasize what seems eerie about teleological explanations (and meaning-explanations), I will contrast them with a pair of general but familiar explanatory relations:

4a: Explanation by Constitution—For example, Angell Hall has spatial “parts” like giant stone Legolike blocks, has temporal “slices” various Angell-Halls-on-a-Graduation-Day, and has as “aspects,” e.g., being grey and quarantining philosophers. All these are kinds of constituents.

4b: Explanation by Causation—For example, laying the Legos increased the pressure on the pillars, and blocked the upward mobility of the quarantined.
I will use the term “construction” to cover both constitution and causation. Throughout, I mean these broadly to include constituents and causes that work jointly with others, some perhaps contributing extremely little to the whole or to the effect. So “construct” stands for “help somewhat to constitute or cause”.

Now for the eerie contrasts (shared by teleological and meaning explanations):

5a: **Backward explanation**—Barring eeriness within the constructive realm, later things can’t construct (constitute or cause) earlier things. But we routinely try to explain the existence of a belief or desire by properties of a future thing believed or desired, and the existence of an organ or tool by the future fulfillment of a function.

5b: **Circular explanation**—Barring eeriness within the constructive realm, things can’t be constructed by things they help construct. But we routinely try to explain the existence of a belief, desire, organ, or tool by properties of a thing believed, desired, or had as a function, even while we try to explain the existence of that thing as an effect of the belief, desire, organ, or tool.

5c: **Absent explanation**—Things can’t construct what doesn’t exist (at some time), and things can’t be constructed by what doesn’t exist (at some time). But we routinely try to explain the existence of a belief, desire, organ, or tool by alleged properties of the thing believed, desired, or had as a function, even when that thing never comes to exist.

5d: **Explanation at a distance**—Except in the most fundamental cases involving the tiniest things and spaces, we expect there to be deeper and deeper mechanisms explaining how things construct other things. But we routinely cite evidence and principles of reasoning as explaining “why” we perceive and believe what we do, and cite desires and intentions as explaining “why” we do what we do, without our knowing or much caring whether these lead to or fit with deeper explanations of “how”. And we routinely cite functions as explaining why objects do what they do, with little knowledge or care about whether these explanations lead to or fit with explanations of how they do what they do.

**Function and history**

So what does teleological function require? It is obscure how we can talk about functions in a scientifically respectable way. If one thinks of the universe as so many randomly or lawfully crashing particles, it is hard to resist the idea that the universe just is the way it is, and there are no “shoulds” or “functions” there for the scientist to describe. Nevertheless there seems to be a sharp break among scientists who act like they don’t need teleological notions, and scientists who act like they do need them. Using broad categories, that break falls between microphysicists, chemists and macrophysicists on the “don’t” side, and biologists, social scientists, and engineers on the “do” side. (We can speak of atoms or molecules or volcanoes “functioning” in various ways, but this is a pun that means little more than that they have effects. It isn’t associated with the key teleological talk of them as succeeding or as failing, malfunctioning or being defective.) Functions seem to enter the universe when reproduction and selection does—with living beings and their artifacts—and this is the first sign that there is some dependence of function on evolutionary design.

“Backward-looking” or “etiological” theories of function accordingly try to show how histories of reproduction and selection generate teleological functions. Very roughly, the core etiological proposal is that some entity—call it e—has a certain function—call it f—if e exists because it is “copied” from similar ancestors that actually did f and thereby increased their probabilities of reproduction in competition with other things. Etiological theories treat functions as objective, at root determined independently of the theorist’s interests or of any other mental representations, and so make functions available for a reductive explanation of mental representation. And in Ruth Millikan’s hands, most impressively, etiology is carefully construed to unify biological and nonbiological functions, handling the functions of genes, body parts, instinctive behaviors, tools and other artifacts, customs, linguistic devices, mental states, and so on.

Etiological theories dispel the eeriness of teleological explanation by recasting it as constructive explanation. It is not that some future or inexistent activity of an object explains, in a backward or absent way, the existence of an object. It is that past occurrences of similar activities explain—causally explain—the existence of the object. This introduces no circularity when the object causally explains the future fulfillment of its function. Instead of looking for gappy “why”-explanations distinct from “how”-explanations, we can look for 2nd-order how-explanations: not “how now does this mechanism work,”
but “how (in the past) did such a mechanism come to exist (or proliferate)”? That causal question can sometimes be answered with little knowledge or care about how the mechanism works.

Since Swampman would have no ancestors, no history of selection, on the etiological theory it harbors no teleological functions. This functionlessness is no surprise. Swampman’s pulsating heartlike tissue would not be defective if it stopped pulsating, since nothing relevant to it would have set a standard for it to fail. Its lunglike tissue doesn’t inflate by (artificial or natural) design, but as a pure accident of the lightning striking the swamp. Grinding food is not a raison-d’être of its teeth-alikes. These structures are like interesting but functionless volcanic formations.

**JOB TWO INTERRUPTS**

Hearing a scary growl from the brush, Swampman zips toward the distant city lights, reaches your house, finds the door locked, then quickly enters your shed by punching in your secret combination code. Apparently Swampman hears and fears the growler, wants to protect himself, believes safety lies toward the light, and knows the shed combination. But since Swampman has no evolutionary history, on the etiological theory he has no states with teleological functions, so he has no meaningful mental states. If he has no state that malfunctions, then if there was no growl, he does not have a perception (or misperception) of a growl. If he has no state that fails if he does not hide, then he has no desire to hide. He opens your lock by the sheer accident of being your molecular duplicate, not by knowing or even guessing what the combination is. This meaninglessness is all quite a surprise, but we can start to understand it. Just as there can be things that are similar to English sentences but that aren’t really meaningful sentences (e.g., gibberish, or shapes and sounds formed by the wind, or ink merely spilled on a page—mere meaningless-sentence-alikes), so there can be things similar to thoughts but that aren’t really meaningful thoughts (e.g., perhaps data and programs in a laptop computer, or shapes and sounds and electrical discharge merely leaking in a soul or brain or mind—mere meaningless-thought-alikes).

If it turned out we are all Swampfolk rather than evolved beings, there would be no thoughts at all, only thought-alikes. A strange possibility, but one we can begin to get comfortable with, using the analogy of meaningless sentence-alikes. It would not surprise us to discover this; it would merely surprise-like us to discover-like this. Of course no one would bother even trying to talk or think if nothing means anything, but only because no one would bother trying anything (versus bother-like-ing try-like-ing). The meaningless talk-alikes and thought-alikes would just continue to happen.

Now if consciousness in turn depends on meaning, consciousness also depends on a history of reproduction and selection. Swampman would have no conscious experiences; there would be nothing any of his states is like for him. This nonconsciousness is a huge surprise. Meaningless sentence-alikes look or sound intrinsically like sentences with functions; all that’s missing is the meaning. So it is tempting to treat Swampman’s meaningless thought-alikes as sharing Nagel’s “subjective character” or Levine’s “qualitative character” with conscious thoughts; all that’s missing is the nonintrinsic meaning about the external world. But without meaning and function there is also no internal world “for” a “subject”. No perceiving eyes, and no introspecting mind’s eye. We could describe some of Swampman’s states as experience-alikes, but since there would be nothing it is like for him to be in these states, they would be no more similar to conscious experiences than our own nonconscious states are. And to the extent that certain moral rules stem from what we should or should not do to those who feel pain, since there is nothing it is like for Swampman to feel pains, these rules would not apply to our treatment of him. Apparently it’s not who your parents are, it’s whether you have parents.

When we try to get our heads around the possibility that we are Swampfolk, it seems even more mysterious how our states could be wholly nonconscious than it is how our states could be wholly meaningless. Our continued assurance that we have meaningful states, in the face of the possibility of being Swampfolks, might be based on a subtle working assumption—we might as well act as if we have beliefs, since if we do not, at least we are not mistaken. Or it might be based on more elaborate reasoning, such as our considerable evidence that we are in fact evolved creatures. But our assurance that we have conscious states seems more directly supported than that. It is tempting to say we know we are conscious just because we are conscious. This knowledge seems independent of the environment outside us because the conscious experiences seem independent of the environment outside us. Our pains, and our resulting moral status, seem to be constituted only by how our mind-brains are here and now. Or perhaps they are partly constituted by a little bit of the environment—aspects of our bodies, or of the past few seconds of stimuli and behavior. But—slap to the head!—how could whether this hurts depend constitutively on distant facts about my evolutionary history?

**JOB ONE CONTINUES**

To secure functions for Swampman, and sometimes for other motivations, philosophers have tried three chief alternatives to the etiological theory. These are attempts to understand functions without dependence on evolutionary histories of reproduction and selection.

*Function without history*

First, John Bigelow and Robert Pargetter argue that functions stem from “forward-looking” survival-enhancing *dispositions*, rather than “backward-looking” survival-enhancing prior activities:
The etiological theory describes a character [≡ feature] now as serving a function, when it did confer propensities that improved the chances of survival. We suggest that it is appropriate, in such a case, to say that the character has been serving that function all along. Even before it had contributed ... to survival, it had conferred a survival-enhancing propensity on the creature. And to confer such a propensity, we suggest, is what constitutes a function. Something has a (biological) function just when it confers a survival-enhancing propensity on a creature that possesses it.

On this propensity theory Swampman's structures, states, and processes have functions from the first moment if they are disposed to increase Swampman's chances of survival.

Second, Robert Cummins dispenses with the teleological thesis that functions explain existence or survival, and substitutes the idea that functions stem from contributions relatively simple things make to the relatively complex capacities of containing systems:

\[ x \text{ functions as a } \varphi \text{ in } s \text{ (or: the function of } x \text{ in } s \text{ is to } \varphi) \] just in case s's capacity to \( \psi \) [is appropriately and adequately accounted for] by, in part, ... the capacity of \( x \) to \( \varphi \) in \( s \).

An account of capacities "becomes less and less appropriate, and talk of functions makes less and less sense" as "the relative complexity of the organization of component parts/ processes that is attributed to the system ... becomes less and less significant". On this organizational theory, from the first moment, Swampman's complex capacities (to run, to open combination locks, etc.) can be accounted for by much simpler contributions of many of Swampman's parts, so these accounts describe the functions of these parts in Swampman's overall organization.

Third, John Searle reverses the dependence relations described in Job Two, maintaining that functions depend on conscious meaning. He writes that:

functions are never intrinsic to the physics of any phenomenon but are assigned from the outside by conscious observers and users... Thus given that we already accept that for organisms there is a value in survival and reproduction, and that for a species there is a value in continued existence, we can discover that the function of the heart is to pump blood .... If we thought the most important value in the world was to glorify God by making thumping noises, then the function of the heart would be to make a thumping noise ....

On this attributional theory, from the first moment, Swampman harbors whatever functions our desires require him (or his parts) to achieve the goals someone sets. Our existence is not required—Swampman's own desires, or those of a by-standing deity, could provide the requirements. Moreover, Searle thinks Swampman could have desires independently of functional attributions, because meaning and consciousness do not depend on functions.

Each of these three alternatives has some merit alongside that of etiology, and perhaps the dominant tendency is to a pluralism that accepts versions of multiple theories as separately sufficient for functions. Perhaps "function" is ambiguous, and each theory is correct about a distinct concept of function. Perhaps different theories are best restricted to different sorts of function-bearers (say, etiological or propensity theories for biological organs, and organizational or attributional theories for artifacts). Lopping together an etiological theory with an independent nonetiological theory would enable Swampman to have functions (and meaningful representations, and consciousness), but doing so too quickly would be cheating ourselves. It would give us no account of why we treat these different kinds of functions alike. It would give us no guidance about what other sources of functions there may be—if there are these four kinds of functions, why not also functions as activities we dislike, functions as propensities whose shortest representation in German rhymes with the shortest English representation of contributions to containing capacities, etc.? Pluralism without unity is for quitters.

**Function and construction**

I would now like to show how an account of functions can generate improved versions of the main alternatives to the etiological account. Then I will use this account to derive the etiological theory, unifying them all in the process. What I think functions have in common is their role in teleological explanation—the apparently eerie, apparently nonconstructive backward/circular/absent/distant explanation described at the beginning of Job One.

Suppose \( e \) is an entity (object, event, fact, property) with function \( f \). The teleologist asks: why does \( e \) exist (at all, or with certain features)? The teleologist answers: because \( e \) does \( f \). The "does \( f \)" is clearly constructive—meaning "helps constitute or cause \( f \)". But since things malfunction, and teleology allows for absent explanation, "does \( f \)" has to be construed softly, perhaps as "possibly or conditionally or with increased probability helps construct \( f \)". Since that's a mouthful, I'll risk misunderstanding and rely on the phrase "helps construct" to convey the softness. (Compare: we have no ready understanding of "I built the bridge, but in the end it didn't get built" but we can easily understand "I helped build the bridge, but in the end it didn't get built"). So the teleologist's explanation is that \( e \) exists because \( e \) helps construct \( f \).

My first suggestion is that this "because" also stands for constructive explanation, rather than for an eerie sui generis explanation. The teleologist cites a fact involving \( e \) (a possibility, or conditional fact, or probability) as constructing \( e \) (perhaps together with other causes or constituents of \( e \)). So this fact involving \( e \) would have to exist, and have powers of
causation or constitution, even before e comes to exist. We can understand this preexisting fact as being a fact about what would (possibly or conditionally or probably) happen if e were to exist. It will be useful to have a mnemonic and a special notation for this allegedly preexisting fact involving e. I’ll call it the “funky fact” and write it with italics in funky braces. The teleologist accepts the formula:

\[ \text{if e were to exist, e would help construct f} \]

To avoid the counterfactual mouthful, let me simplify the expression to:  
\[ \text{if e exists, e helps construct f} \]

My second suggestion is that at the most general level functions are whatever fs satisfy this formula. Hence the

**BOLD CONSTRUCTIVE THEORY OF FUNCTIONS:** e has f as a function if and only if  
\[ \text{if e exists, e helps construct f} \]

constructs e.

The interesting thing is to understand the ways in which a preexisting funky fact involving e can construct e. I count five ways for the construction to go. Each relates closely to a preexisting theory of functions, and cites a factor that would, if in place, plausibly be sufficient for functions. If there are further ways, I conjecture they will also cite familiar sources of functions. Or if not, they will exclude themselves by naturally suggesting further conditions in the same spirit, for a more cautious constructive theory of functions.

**The Way of Abstract Causation (Classical Teleology)**

Nowadays it is normal to deny that abstract entities (e.g., properties themselves, as opposed to concrete instantiations of properties) have causal powers over what happens in the concrete world. Socrates sounds crazy when he insists that “as a consequence of the good”—construed somewhat misleadingly as the property of being good—“existence and being are in things”. Today John Leslie sounds crazy—as crazy as anyone else who grapples with the problem of explaining why there is something rather than nothing—when he appeals similarly to causation by abstract goodness:

An absence of all [concrete] existents truly would be in a way tragic because there might have been a good situation instead. And a situation sufficiently good—one which wouldn’t be rather a pity because something far better could be there in its place—could perhaps have an existence required not just ethically, but with creative effect. Without contradic-

I agree there is room to argue (as Leslie does) for abstract causation; there is nothing absurd about it, and I can think of no systematic attempts to defend the bias against it. So imagine there are circumstances in which something’s being good can cause it to exist—purely, without help from minds. Then if it would be good for e to help construct f, this might team up with the funky fact  
\[ \text{if e exists, e helps construct f} \]

to cause e. However spooky, that would be a teleological explanation of e if anything would be. And if we reached that spooky discovery the first thing we would do is stop trying to de-
mystologize or ignore Aristotle on final causes, and the second thing we would do is consider f a function of e, as required by the general theory.

**The Way of Representation (Desired Means)**

We sometimes speak as if cognitive states (e.g., perceptions, beliefs, hypotheses) are under certain conditions caused by the facts they represent. We also speak as if some facts involving the future (especially possibilities, probabilities, and conditional facts) can exist before the future unfolds. If we are right, then a fact that p at time t can exist before time t, and perhaps before time t it can cause a future-oriented belief (or other cognition) that p at time t. Now substitute the funky fact above for p at time t. Suppose the following:

\[ \text{if e exists, e helps construct f} \]

What would such a belief do in reasoning? The belief has the general form of a means-end belief; it is equivalent to the belief that e would be a means to f. So if one had a desire for f, and had the belief, one might reasonably form a desire for e as a result, through means-end reasoning. If one is effective enough in action this desire for e might lead one to construct e itself. When a desire for f constructs a desire for e through means-end reasoning, and this constructs e through effective action, and when the funky fact constructs the relevant means-belief, the funky fact indirectly constructs e, as follows:

\[ \text{funky fact} \rightarrow \text{belief in funky fact} \]
\[ \quad \rightarrow \text{desire for e} \rightarrow e \]

This satisfies the formula in the general constructive theory, so f would be a function of e when e is constructed as a desired means to a desired end f. When e does not in fact construct f (even though it “helps” construct f), e malfunctions.

This captures what is plausible about Searle’s attributional theory of functions. First, Searle places no restriction on whose values generate functions for an entity. He says “our” valuing survival generates a function for my heart of pumping blood, but so long as there is one being in the universe who values my death—a general misanthrope, a bitter ex, or the neighbor’s dog—for all Searle says this equally generates a function for my heart of ceasing to pump blood. And doubtless in this wide world there is already someone who values glorifying God by making thumping noises, so my heart as
well as his heart already has that function. But there is no
useful sense in which my heart is defective whether it pumps
blood or not, and no useful sense in which the thumping is its
own function. By restricting the role of beliefs and values to
those that help construct an object—the designer’s values and
beliefs—this modification of Searle’s theory enforces reason-
able limitations on whose attributions matter.

Second Searle seems to think that valuing f makes f a func-
tion of anything that is a means to f, even if the valuer never
intended or thought of the means. He says that even if no one
ever heard of hearts, a desire for survival makes a heart have
the function of pumping blood because hearts contribute to
survival by pumping blood. Now braided hair also contributes
to survival under various circumstances, such as when some
nearby bad guys happen to be out to kill anyone with un-
braided hair. But even if a person’s survival is valued by the
very person who constructs her hair braids (for show), this
does not give the hair braids a function of thwarting the bad
guys. By restricting the function-endowing role to the specific
means-end attitudes of the designer or maintainer, the modi-
fied attribution theory gets this right.

Third, not even designers and maintainers with relevant
means-end thoughts may go hog-wild in establishing func-
tions. Even if I design and construct a tool, say a small fork
suitable for extracting pomegranate seeds, I cannot endow it
with just any old function, such as establishing world peace,
and thereby render it defective. Even if I sincerely believe
that it would help construct world peace, and make it for that
reason, if this belief is not caused by a (funky) fact that it
would help construct world peace, my attributions and values
generate no matching function.

The Three Ways of Constitution

The third through fifth ways for a funky fact involving an
entity to construct that entity exploit a sense in which whole
entities trivially inherit constructive relations from their con-
stituents. If a part of Angell Hall helps cast a shadow to the
west, then Angell Hall helps cast the shadow. If a part of An-
gell Hall helps constitute an entrance to Mason Hall, Angell
Hall helps constitute the entrance. (We have to be careful not
to imagine that every part of Angell Hall is active in casting
the shadow, or that every part of Angell Hall is within the
entrance, but still, in a sense, and perhaps by courtesy. Angell
Hall helps cast the shadow and helps constitute the entrance. I
will omit these qualifiers for ease.) The importance of this
inheritance is that it is trivial, that it is without further neces-
sary conditions. If we treat e as a whole composed of con-
stituents, and inheriting constructive powers from these con-
stituents, we can understand a funky fact \( \text{if } e \text{ were to exist, } e \text{ would help construct } f \) as reducing to facts about what con-
stituents of e do, perhaps independently of e’s existence.

The idea works as follows. Let c be a constituent of e.
Then if c helps construct f, trivially e helps construct f. Now
instead suppose e does not exist (yet), but c (already) does,
and helps construct f. Then the following two conditions can
easily hold prior to e’s existence:

- If e were to exist, c would be a constituent of e.
- If e were to exist, c would help construct f.

If both conditions hold, then trivially the funky fact holds:

\[ \text{if } e \text{ were to exist, } e \text{ would help construct } f. \]

Since the funky fact is nothing more than the conjunction of
the two conditions, for the funky fact to construct e all we
need is for the two conditions to construct e. This occurs
when c’s activity (f) helps construct e. Then we have e exist-
ing because \( \text{if } e \text{ exists, } e \text{ helps construct } f \), which satisfies
the theory of functions.

Well, it does so with one further complication. As soon as
e comes to exist through constituent c’s activity f, e trivially
inherits c’s activity, so it may be in a sense that e automati-
cally constructs the f that helps constructs it. If f is a function
of e, then in that sense e automatically fulfills its function. To
allow for teleological malfunction, e’s function must be a fur-
ther performance of f, beyond that which constructs e.

There are three resulting Ways to satisfy the general the-
ory of functions, because there are three kinds of constituents:
spatial parts (the Lego blocks helping to make up Angell
Hall), temporal slices (the Angell-Halls-on-a-Graduation-Day
helping to make up Angell Hall), and aspects (the greyness
helping to make up Angell Hall).

The Way of Spatial Parts (Containing Systems)

Let p be a spatial part of e, and substitute it in the reason-
ning about constituent c above. Here e is something larger than
p, something that contains p as well as other spatial parts. For
the existence of \( \text{if } e \text{ were to exist, } e \text{ would help construct } f \)
we need these two conditions to hold prior to e’s existence:

- If e were to exist, p would be a part of e.
- If e were to exist, p would help construct f.

The funky fact constructs e when these two conditions con-
struct e. This happens when e’s organization (out of various
smaller spatial parts) is created or sustained by the activity (f)
of part p, when what p does helps bind e together. In this
case, e has (further) performance of f as a function.

This captures what is plausible, for the generation of func-
tions, about Cummins’s emphasis on the organization of con-
taining systems. First, Cummins’ is rightly concerned about
the following trivialization of his theory:
No matter which effects of something you happen to name, there will be some activity of the containing system to which just those effects contribute, or some condition of the containing system which is maintained with the help of just those effects. Heart activity, for example, keeps the circulatory system from being entirely quiet, and the appendix keeps people vulnerable to appendicitis.

To exclude these nonfunctions, he tries restricting functions to relatively complex systems organized out of relatively simple parts. But this does not do the trick. By his standards a heart’s pumping blood has to count as a simple part of the whole relatively complex circulatory system. But then a heart’s noisily pumping blood must count as an equally simple part of the whole relatively complex noisy-circulatory system. Furthermore, even simple systems can succeed or fail, in as full-blooded a sense as complex ones can. On the modified organizational view here, what excludes the heart noise is that the noise doesn’t help to organize the circulatory system, the noise does not help bind the spatial parts together.

Second, under the stated conditions the organization of a system does not necessarily endow the parts of the system with functions, but it does necessarily endow the whole with functions. If e’s part p ceases to perform f, something is wrong teleologically with e. It is not necessarily the case that p malfunctions, since the problem may lie elsewhere in e. But e as a whole malfunctions. If a heart doesn’t pump blood, this may be because all the blood has drained out through a hole in the foot. That’s not a defective heart, it’s a defective foot—just one of the worm’s many parts. For a creature with a history, having parts that organize into hearts, or in any of the other ways described above and below.

**The Way of Temporal Slices (Self-driven Survival)**

Let s be a temporal slice of e, e is a temporally extended “worm”. For e (the whole worm) to exist is for e to survive (or persist) from one time to another. For the existence of the funky fact [if e were to exist, e would help construct f] we need these two conditions to hold prior to e’s survival:

→ If e were to survive, s would be a slice of e.
→ If e were to survive, s would help construct f.

The funky fact constructs e when these conditions hold, i.e., when e’s survival is caused by its past activity (s’s doing f). This captures what is plausible in Bigelow and Pargetter’s propensity theory. As in their theory, there is no need for the activity of e’s ancestors. Being a time slice, s is capable of causing f and thereby causing e to survive. You can think of later time slices as being reproduced from ancestral time slices, in which case the later slices have f as their etiological functions, or you can think of them all as being part of the worm, so that the worm itself has nonetiological functions.

The worm as a whole needn’t have ancestors: it can develop functions by contributing to its own survival.

But there should still be a need for actual survival activity in the immediate, recent, or distant history of the creature. Otherwise there is no way to apply their notion of a propensity. As Bigelow and Pargetter acknowledge, propensities are relative to particular conditions:

A character [= feature] may confer propensities which are survival enhancing in the creature’s usual habitat, but which would be lethal elsewhere. When we speak of the function of a character, therefore, we mean that the character generates propensities that are survival-enhancing in the creature’s natural habitat.

For a creature without any history (Swampman at the first moment) there is no such thing as its “usual” habitat. Even for a creature with a history, we can’t count “usualness” merely by time spent. Suppose that unbeknownst to us, after each five minute period we spend in this dog-eat-dog world, we are whisked away to a protected environment for an hour to “recharge” in suspended animation, and then rereleased into the wild for the next five minutes. Statistically our usual habitat is the recharging station. But our function-relevant habitat is our statistically unusual world where we (even if not our ancestors) perform actual survival-enhancing activities, as reflected in the modified propensity theory.

Given a (possibly very brief) history of survival-enhancing activity in an environment, propensities in that environment drop out as unnecessary. If a creature survives by its own activity in an environment, but more by fortunate activity than by the exercise of a reliable propensity, this still establishes a norm for similar activity to live up to. Full-blooded teleological explanation allows not only for entities that happen not to fulfill their functions, but for entities that cannot (reliably, without luck) fulfill their function in their natural habitat—entities without a propensity to fulfill their function. A failing heart does not stop failing at the moment it loses all propensity to pump blood. At that moment it fails worst.

**The Way of Aspects (Reproduction and Selection)**

Finally, let a be one of the aspects of e. For the existence of the funky fact [if e were to exist, e would help construct f] we need these two conditions to hold prior to e’s existence:

→ If e were to exist, a would be an aspect of e.
→ If e were to exist, a would help construct f.

The funky fact constructs e when these two conditions construct e. Assuming aspects are abstract objects (e.g., properties), and barring direct causation by abstract objects, for an aspect of e to cause e, it must be instantiated in something prior to e. Suppose that a is so instantiated, and thereby its activity (f) constructs e. The prior thing is similar to e (in sharing aspect a), and its similarity is relevant to causing e
(via f). This prior thing is therefore an “ancestor” of e in Millikan’s sense, one that “reproduced” to form the similar “copy” e. Now, since the ancestor did f in virtue of having property a, we can say that a helped construct f. Unless e is very different from the ancestor, then, if e had existed, it would have helped construct f. So again we have the preexisting funky fact \( \text{if } e \text{ exists, } e \text{ helps construct } f \), and we satisfy the general theory of functions.

I think that tracing out this line of thought in more detail would lead to an improved formulation of the etiological theory of functions, better able to handle counterexamples and complaints about it as a stipulative change of subject. But for now suffice it to say that there seems to be a way to justify versions of all the leading theories of functions, under the unified “e exists because e would construct f” rubric.

**JOB ONE IS DONE; JOB TWO IS DUE**

While a history of reproduction and selection stands as one way to have functions, it is not the only way. Things suddenly created by the Form of the Good can have functions via their classical final causes. Things suddenly created by intelligent design can have functions by the means-end reasoning of their designers. Things suddenly created by lightning in the swamp can acquire functions by their own survival activity and the activity of their parts in maintaining their organization. Under the right circumstances Swampman can have conscious mental representations from moment two, even if not from moment one. Our assurance that we are conscious, in the face of the possibility that we are Swampfolk, need not rely on our theories of evolution by natural selection of distant ancestors. Though not quite immediate and certain, it is supported by our knowledge of our own continual activities to stay alive and in one piece.

**Eric Lormand** is an Associate Professor of Philosophy. Eric came to Michigan in 1991, just after completing a Ph.D. at MIT under the supervision of Ned Block. Much of his research has concerned those aspects of mental phenomena that have inspired challenges to cognitive science: especially, the nature and status of conscious experience, mental representation, self-knowledge, emotions, skills and rationality. He is currently pursuing a major project in epistemology that concerns the justification of logical reasoning and inference to the best explanation. He is also interested in issues related to phenomenology and metaphysics.

**References and Suggestions for Further Reading**

- Aladdín’s lamp is rubbed in Huxley’s *Lessons in Experimental Physiology*, p. 210. The stage-setting quotes about conscious experience are from Nagel’s ‘What is it like to be a bat?’, reprinted in his *Mortal Questions*, and Levine’s ‘On leaving out what it’s like’, reprinted in Davies and Humphreys’ *Consciousness*.
- For panpsychism, see section 8.4 of *The Conscious Mind* by David Chalmers, the most dogged Doubting Thomas. Daniel Dennett is the best source for keeping contentious cases of consciousness contentious—see especially ‘Why we can’t make a computer that feels pain’ and ‘Are dreams experiences?’ in *Brainstorms*, and his reliance on language and culture in *Consciousness Explained*.
- Over the course of several exchanges, Ned Block proves to be the most dogged critic of the idea that consciousness requires meaning, and Michael Tye proves to be the most dogged defender of the idea. See William Lycan’s “Representational theories of consciousness” in the online *Stanford Encyclopedia of Philosophy*, [http://plato.stanford.edu/entries/consciousness-representational/](http://plato.stanford.edu/entries/consciousness-representational/).
- Ruth Millikan’s *Language, Thought, and Other Biological Categories* best develops the case that meaning depends on function, and best develops the etiological theory of functions. But “Biosemantics”, reprinted in her *White Queen Psychology*, is the easiest introduction.
- The most challenging counterexamples to etiological theories of functions are found in Christopher Boorse’s “Wright on Functions” (*Philosophical Review*, 1976).
- For nonetiological theories, see Bigelow and Pargetter’s “Functions” (*Journal of Philosophy*, 1987), Cummins’ “Functional Analysis” (*J. Phil.*, 1975), and the first chapter of Searle’s *The Construction of Social Reality*.
- Leslie’s *Infinite Minds* is an impressive defense of an abstract teleological explanation of concrete reality.
- Swampman first appeared in Donald Davidson’s “Knowing one’s own mind”, reprinted in his *Subjective, Intersubjective, Objective*. 
SPOTLIGHT ON RECENT GRADUATES

Erica Lucast Stonestreet defended her dissertation — *Self-Creating Reasons: The Normative Implications of Identity* — in May under the supervision of Steve Darwall (chair), Liz Anderson, Sarah Buss and Scott Shapiro. The work is a study of self-creating reasons that create and reconstitute the self. In addition, her essay “Informed Consent and the Misattributed Paternity Problem in Genetic Counseling” appeared in the prestigious journal *Bioethics*. Erica was the first recipient of the *Marshall M. Weinberg Summer Dissertation Fellowship*, awarded Summer 2008. She also received the 2007/08 *Susan Lipschutz Award for Women Graduate Students*. Erica began teaching at the College of St. Benedict/St. John’s University in Collegeville, MN this fall.

Joshua Brown defended his dissertation — *The Crooked Path from Language to Metaphysics* — with Anthony Gillies and Peter Ludlow as committee chairs, and Peter Railton and Andy Egan as members. The dissertation is a critical examination of the ways in which philosophers use semantic theories in drawing conclusions about the world. Josh proposes an interpretation of such theories on which they have few, if any, interesting metaphysical consequences. Also Josh’s paper “Spatial Infinity and the Intuition of Space” won the 2006 *Markus Herz Prize* awarded by the North American Kant Society. Josh began a tenure-track position as an Assistant Professor at the University of Houston in the fall of 2008.

Gabriel Zamosc-Regueros completed his dissertation — *An Interpretation of the Ideals of Sovereignty, Wholeness, and Becoming What One Is in Nietzsche’s Practical Philosophy* — under Steve Darwall’s supervision. Committee members included Jamie Tappenden and Michelle Kosch. Gabriel’s thesis explores Nietzsche’s moral psychology. Among other interesting and illuminating claims, he defends the controversial thesis that, for Nietzsche, having a sovereign conscience means seeing oneself as a morally responsible agent. This comes at the cost of being subject to blame and guilt. Gabriel begin his academic career this fall as Assistant Professor at University of Colorado, Denver.

Jim Staihar, a Harvard J.D. who also specializes in the philosophy of law, completed a dissertation — *A Restorative Signaling Theory of Punitive Desert* — under the guidance of Liz Anderson (chair), Steve Darwall and Allan Gibbard. The work offers a novel theory of punitive desert that seeks to explain the degree to which criminals deserve punishment. According to Jim, when someone commits a crime without an exculpatory defense, she undermines conditions of trust, and thus deserves to be punished no more severely than the burdens she is obligated to undertake to restore the conditions of trust. Jim began a postdoctoral fellowship at the University of Chicago in Law and Philosophy in the fall of 2008.
Arthur Burks, professor of philosophy and computer science, died on May 14, 2008 at the age of 92. Art, a member of Michigan’s faculty from 1946 to 1986, is best known for his work on the logic of computer programming in the late 1940’s, which helped launch the digital age. He also did pioneering work in the logic of causality and probability, the foundations of semiotics, and the history of computing. Art was also one of the world’s leading scholars of the American pragmatist Charles Sanders Peirce.

Born Oct. 13, 1915, in Duluth, Minnesota, Art received a B.S. in mathematics from DePauw University in 1936, and then earned a Ph.D. in philosophy from the University of Michigan in 1941, with a dissertation entitled *The Logical Foundations of the Philosophy of Charles Sanders Peirce*. During World War II, Art served as a principal architect for the first programmable electronic digital computer, the ENIAC. During this period he worked closely with the great mathematician John von Neumann and the computer scientist Herman Goldstine. Their jointly-authored 1946 paper “Preliminary Discussion of the Logical Design of an Electronic Computing Instrument,” ranks among the most famous in the history of computer science. It described the design for the programmable computer, and is credited with containing the first discussion of modern computer programming. In further collaboration with von Neumann, Burks completed and edited an essay, “Theory of Self-Reproducing Automata,” which contains the first descriptions of processes by with non-living things might reproduce themselves.

Art joined the Philosophy Department in 1946, and in 1949 founded the Logic of Computers Group, the first organization on campus dedicated to the study of computing. He helped start the graduate program in communication sciences in 1957 and the Department of Computer and Communication Sciences (CCS) in 1967. He served as its first chairperson in 1967-68. The CCS program blended computing, the study of language, machine learning, and complex systems. In 1984 he joined the Department of Electrical Engineering and Computer Science.

Though he was perhaps best known for his contributions to the development of the theory of computing, Art also made wide-ranging contributions to philosophy. He did ground-breaking work in the philosophy of science, making significant additions to our understanding of causality, the character of laws of nature, inductive logic and of the role of probability in rational decision making. His *Chance, Cause and Reason* (Chicago, 1977) remains influential some thirty years after its publication. He served as President of the American Philosophical Association, Western Division, for 1972-73, and as president of the Philosophy of Science Association, for 1975-76. Art also edited two volumes of the *Collected Works of Charles Sanders Peirce*, and served as president of the *Charles S. Peirce Society* in 1954-1955.

He was the recipient of many awards and honors including the Henry Russell Lectureship in 1978 – one of the highest honors the University of Michigan confers on a senior faculty member. Art retired from active faculty status in 1986. After retiring, he co-authored many articles with his wife, Alice R. Burks, on the history of the computer. Their book *The First Electronic Computer: the Atanasoff Story* (Michigan, 1989) is a landmark in the history of computing.

We mourn the loss of our colleague, a kind and generous man, and extend condolences to his wife of 65 years, Alice W. Burks, and to his three children, Nancy, Edward and Douglas.

— Jim Joyce, Chair Department of Philosophy
Alumni News

Over the years we have asked you to update your contact information and share any news or updates with the department. We would now like to share these updates with your fellow alumni.

1953
Roger B. Cole, M.D., A.B.
I recently retired. I am a pediatric cardiologist, and Professor of Pediatrics at Northwestern University Medical School. My philosophy education at the UM has served me well over the years - particularly in the areas of logic and teaching.

Ralph Norman Haber, A.B., Honors
At Charles Stevenson’s suggestion, I switched to Psychology and received a Ph.D. from Stanford in 1957. I have taught at Yale, U. Rochester, & U. Illinois for 36 years and have been a human factors consultant since 1994 to the government, business and the legal profession. I received the Outstanding Achievement Award for the U of M in 1977, one of my proudest honors.

1968
Gerald N. Rogan, MD., A.B., (1968)
Health Care Consultant. U of M Philosophy helped me helping patients.

1972
Louis M. Guenin, J.D., A.B., (1972)
The Morality of Embryo Use, Cambridge University Press was published in September 2008.

1979
Stephen Lacy, A.B.
I have my own CPA and Law firm

1988
Ms. Jeanne Besanceney (former spelling "Jean") B.A.
San Francisco, CA 94129
Currently a holistic health consultant. 1987 Student Recognition Award for Greeks for Peace. I’ll never forget when the earth moved during Professor Loeb’s lecture! (Earthquake of 1986-?)
I knew I’d end up in San Francisco with a philosophy degree... thinking about how to restore the Earth--- and human health.
(see www.bioneers.org and www.sacredspace-SF.com)
Peace, Jeanne Besanceney

1992
Shane Schimpf, B.A.
www.bonmotpublishing.com

2004
Anthony Nguyen, B.A.
Hello, I would like to receive Michigan Philosophy News every year. I enjoy hearing about the faculty's happenings & new lecturers coming to UM.

As far as my happenings, I will be attending Chicago-Kent College of Law & I will be focusing on Intellectual Property as well as legal jurisprudence. Eventually, though, I would like to find myself in graduate school (hopefully in AA) seeking my doctorate in Philosophy.

I owe much thanks to Velleman & Kamtekar for their engaging lectures, as well as the rest of the faculty and GSI's. Thank you for a life-changing experience I will never forget.
Sincerely,
Anthony Nguyen '04
Department Faculty
2008-2009

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Ian Proops — Associate Professor; History of Analytic Philosophy, Kant, Metaphysics, Philosophy of Language

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Laura Ruestche — Professor; Philosophy of Science

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