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Issue: *Unlocking the Unconscious: Exploring the Undiscovered Self*
COMMENTARY

The deeper self: an expanded view of consciousness

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As science continues to explore the mysteries of the unconscious, two critical questions remain. First, can unconscious impulses, desires, and feelings be willfully raised to the level of the conscious self?, and, if so, would the unveiling of unconscious mechanisms lead to genuine self-knowledge or empowerment? Second, can we methodically tap into the unconscious to gear ourselves along more creative lines? If the unconscious is a source of intuitive and creative inspiration, how might a more expansive understanding of consciousness help us to flourish? How can we harness the intuitive parts of ourselves to think “outside the box,” transcending the limitations of preconceived categories? And along those same lines, how would an expanded view of the unconscious frame our spiritual experiences or offer spiritual nourishment? Writer Siri Hustvedt, historian of psychology Sonu Shamdasani, and neuropsychologist Mark Solms will tackle everything from noetic experiences and the role of intuition to the phenomenon of peak experience and Jung’s “collective unconscious.”

Keywords: consciousness; the unconscious; collective unconscious; Freud; Jung; subliminal self; subliminal consciousness; active imagination; neuropsychanalysis; cognitive unconscious; cognitive neuroscience; fantasy; symbol; intuition; REM sleep behavior disorder

Steve Paulson: Many thanks go to the New York Academy of Sciences and the Nour Foundation for making this series possible. This series on the unconscious has been really exciting for me, because it raises all kinds of questions that I think about all the time—like, where do our dreams come from? and what about creativity? Is it something the science of neural correlates and brain chemistry will ever explain? And what should we make of those experiences that I would call *transcendent*, when the world suddenly opens up and seems to be full of meaning? Those are questions that lurk on the edges between our rational, scientific understanding of the world, and what may be a different way of knowing—more intuitive, less analytical, but perhaps more deeply felt. Then, on top of that, you have the great theorists of the unconscious, Freud and Jung, with their complicated history together before they split and went their separate ways. So we have a great evening ahead of us, and not only do we have a leading Freudian scholar and a leading scholar of Jung, but we also have a remarkable novelist who has carved out a second career writing about science, psychology, and the mind. Let me introduce our speakers.

Siri Hustvedt, PhD, is Lecturer in Psychiatry at the Weill Cornell Medical College. She’s a novelist and an essayist, whose works repeatedly pose questions about the nature of identity, selfhood, and perception. She’s also published papers in academic and scientific journals. Her novels include *What I Loved* and *The Summer Without Men*, and her nonfiction includes *The Shaking Woman or A History of My Nerves*. She also has a new collection of essays, *A Woman Looking at Men Looking at Women*.

Sonu Shamdasani, PhD, is a London-based author, editor, and professor at University College London; he’s codirector of the Health Humanities Centre there. His writings focus on Carl Jung and cover the history of psychiatry and psychology from the mid-nineteenth century to current times. He edited one of Jung’s major works, *The Red Book*, and he’s the cofounder of the Philemon Foundation, which aims to publish all of Jung’s unpublished writings.

Mark Solms, PhD, is a psychoanalyst. He holds the chair of neuropsychology at the University of Cape Town and is the president of the South African Psychoanalytical Association. He founded the International Neuropsychanalysis Society and was a founding editor of the journal *Neuropsychanalysis*. He's best known for his discovery of the forebrain mechanisms of dreaming and his pioneering use of psychoanalytic methods and theories in contemporary neuroscience. He's the editor of the *Revised Standard Edition of the Complete Psychological Works of Sigmund Freud*, which runs to 24 volumes. Welcome, all of you.

I think it would be useful to start by defining some of our terms, and Mark, I'm going to start with you. What exactly do we mean when we use that word *unconscious*?

Mark Solms: You can obviously state it simply and say “not conscious,” and then it splits into the sort of medical meaning of *unconscious*, as in coma or stupor, and then the psychological meaning, which is our topic. You're going to have great difficulty getting any agreement on it. The important thing in terms of the psychoanalytical tradition is that the unconscious mind is just that: it's a mind. It's not just something automatic, something out of consciousness, something that reflexively happens. It's an intentional agent that's part of you, that's making decisions, driving your volitional activities without your awareness. Most importantly, which is, I think, uniquely psychoanalytical, it resists self-knowledge. It's not just that it's outside of awareness, you don't want to become aware of it. Those are some of the central features of how, within my broad discipline, at least, we would think about the unconscious.

Paulson: I know people have been talking about the unconscious for decades, probably for more than that. Siri, I know you've looked into some of the history of how people try to frame this.

Siri Hustvedt: It's interesting because few people now dispute that there is an unconscious. These days, scientists talk about the *cognitive* or *adaptive unconscious*. But when behaviorism reigned, no one wanted to discuss the unconscious at all. It made them think of Freud, and behaviorists were very much anti-Freud. The conflicts continue, but the idea of some form of unconsciousness is old. Some scholars trace it all the way back to Ptolemy, who proposed unconscious processes in vision.

And well before Freud, well before Jung, in *The Passions of the Soul*, Descartes maintained that a completely forgotten childhood experience could affect a person as an adult. Leibniz discussed unconscious perceptions—perceptions that were so small that they couldn't be perceived. In the nineteenth century, there were two Englishmen, William Benjamin Carpenter, a favorite of mine, and the philosopher Sir William Hamilton, who developed ideas about the unconscious. There are wrinkles in these various ideas, but it's important to keep in mind that the unconscious was not invented a few decades ago.

Paulson: Sonu, is there a clear dividing line between the conscious and the unconscious?

Shamdasani: It depends on who you're talking to. As Siri clearly stated, there are different models of the unconscious, but I don't think people are actually talking about the same thing. This is the first problem we come into. There are many people around the globe, billions, who would not say that they have an unconscious. They've got alternate modes of understanding. They have different ontologies, which, for them, perfectly suffice.

Paulson: Why would they resist that notion of the unconscious?

Shamdasani: They've got notions that they consider perfectly adequate. You go to India and people talk about *karma*; they talk about the *dharma*. They have different modes of self-understanding—different models of health and of healing. I think one of the issues that will presumably be explained tonight is the fact that in today's society, when people use the word *unconscious*, they often mean different things. As Siri pointed out, there's a philosophical background, a biological background, a physiological background, and a psychological background, and these usages get mixed up. It's a term that becomes rife with confusion.

Paulson: One of the big questions, which we're obviously going to be exploring tonight is, how much can we ever know the unconscious? Almost, by definition to some degree, we can't know it, right? We can only get glimpses of it—Mark?

Solms: That's right, and that's where the psychoanalytical and the cognitive neuroscience traditions converge. As I think Siri said, it's now common cause that not only is there an unconscious mental life, but also that the bulk of what we consider mental activity occurs outside of awareness. In cognitive neuroscience, it's more a matter of it being not possible to retrieve mental activities that aren't encoded or represented as episodic experiential-type/first-person or abstract semantic-type/third-person memories. Something which is working at the level of the basal ganglia, what we call procedural memory, for example—habitual skills, when this happens, I do that—is not possible to bring to mind; that's due to the way in which it's encoded. Whereas in the psychoanalytical tradition, there's the concept of *resistance*—that there's an emotional repulsion that keeps the unconscious out of mind because it's so disturbing, so unpleasant. That's the main distinguishing point. But that most mental activity is unconscious and that it cannot be brought to mind is common cause; it's just a question of why that is the case.

Hustvedt: I have a wonderful quote from John Kihlstrom, a cognitive scientist, someone I admire, by the way. He makes a distinction between the Freudian dynamic unconscious and the cognitive unconscious. It is so funny that I have to read it to you. The Freudian unconscious, according to Kihlstrom, was “hot and wet; it seethed with lust and anger; it was hallucinatory, primitive, and irrational. The unconscious of contemporary psychology is kinder and gentler than that and more reality bound and rational, even if it is not entirely cold and dry”^a [*laughter*]. The sexual and gendered references in this passage are so obvious that perhaps we do not have to go into them. But I do believe that some of the hostility toward the Freudian unconscious is announced in this passage.

Paulson: Let me follow up on that, because that's the thumbnail image we have of Freud—why some people don't like him because people think he was sex obsessed—that that was all he cared about. It was just all about sex and that's what the unconscious was about—repressed sexual desires.

Solms: That's a very important distinction. We've all been agreeing that the notion of an unconscious is not controversial and wasn't even a uniquely Freudian idea; there were precedents going back literally centuries. I think what was important in Freud's conceptualization of the unconscious was not only the things that are summarized already but this point that Siri now brings our attention to, which is that the unconscious, for Freud, coincided with something else, which he later called the *Id*, which is the instinctual part of the mind. Freud made the not-very-startling observation that we are a species of animal.

So there must also be an instinctual, driven, embodied set of mechanisms that are at work in the human mind, no less than in any other species of animal. Interestingly, I think that there's a bit of a contradiction in Freud, because Freud says that the pleasure principle—the affective, seething wetness that dominates in the *Id*—is unconscious. But how can a pleasure principle be unconscious? What is an unconscious pleasure? What's the point of an unconscious pleasure? [*laughter*] The distinction that I'm wanting to introduce is that we have to differentiate between what is cognitively unconscious and what is affectively or emotionally unconscious. Much of what Freud refers to as being unconscious he means is unrepresentable in thought—what we nowadays called “nondeclarative.” That doesn't mean it isn't consciously *felt*. We get into lots of muddles on that basis.

^aQuoted in “A psychodynamic theory: Freud's psychodynamic theory of personality.” 2016. In *Personality: Theory and Research*. Chapter 3. D. Cervone & L.A. Pervin, Eds.: 74. Wiley.

Paulson: Let's bring Carl Jung into this. Jung, of course, was a protégé of Freud—came out of the psychoanalytic tradition, and then broke away. What's the Jungian idea of the unconscious?

Shamdasani: Jung himself said he was actually never a student of Freud. His teachers were Pierre Janet, Théodore Flournoy, and Eugen Bleuler. He had his own intellectual formation vis-à-vis the unconscious. He was drawing from a German philosophical tradition from Carl Gustav Carus and Eduard von Hartmann. There you have a notion of an unconscious as primary to consciousness—it's a philosophical conception. Following from that, Jung has a notion that it is a source of creativity, and, in a therapeutic setting, is a source of healing and potential self-renewal, and also an aspect that connects one to a wider humanity.

I want to return to the question that Mark was asking earlier, that the unconscious is not controversial. It *is* controversial in many settings in academia now. That's why people say they don't have an unconscious. The question is, Are you a monist? or Do you allow multiple forms of self-description and ascription? Is one allowed not to have an unconscious, if one has other forms of psychological, philosophical, or metaphysical beliefs?

Hustvedt: Yes, you're right. What Mark and I have been saying here is that in cognitive science, the idea of an unconscious is no longer controversial. But among people in general and people working in many other fields, the idea of the unconscious is not universally accepted. You certainly have an important point.

Paulson: Just so I understand this—the Jung versus the Freud view of the unconscious—can you summarize it as you understand it?

Shamdasani: As Mark was indicating, Freud's late model is based on the Id. For Jung, the unconscious was not repressed. It wasn't something that was derived in one's own lifetime, but was something that was pre-given. It consisted of structural forms and fantasies that are inborn, present in everyone.

Paulson: What do you mean, pre-given?

Shamdasani: That they aren't acquired through education, aren't acquired in the course of one's lifetime. They were akin to Kantian categories—categories that make thought possible—the typical forms of experience that you encounter—you're in a way prestructured to encounter a world . . .

Hustvedt: And wasn't there an evolutionary aspect to this for Jung too?—that those Kantian categories had evolved in human beings?

Shamdasani: Which in a way was a bit contradictory, because he's drawing from different traditions, and we're trying to combine the different philosophical and biological conceptions of the unconscious into a larger synthesis, which was inherently unstable. Nevertheless, in therapeutics, the critical aspect was that it was not purely a negative but also a source of potential renewal.

Hustvedt: I think Jung was more optimistic than Freud—Lutheran Jew—[laughter]. Yes, it's funny, but it's also true. Freud was deeply pessimistic about human nature, and Jung was more positive. They also had very different experiences in life and very different personalities. Jung had a kind of mystical consciousness, and Freud was very much a hardheaded scientist.

Solms: There's also what Freud called the *narcissism of small differences*. If you look at Jung and Freud and then compare them to everybody else, they're pretty much in the same camp. They could have easily overcome many of these differences if they had wanted to, but I don't think they wanted to.

Hustvedt: They did not want to do that.

Paulson: Let me throw out one other concept that gets a lot of discussion these days: the *collective unconscious*. Jung took this idea to a whole other level. Tell us what the collective unconscious is.

Shamdasani: It's akin to what the poet, W.B. Yeats called "the great memory." It's a notion that culture is within. There's one evocative passage where Jung states, in 1912, that if all the mythologies and religions were wiped out, they would spontaneously regenerate from within. So that in introspection, in examining one's fantasies, in examining one's dreams, Jung saw that as a portal or a gateway into psychological human history.

Paulson: Do you think his idea of the collective unconscious was more a religious idea than a scientific idea?

Shamdasani: Jung saw it as both, because he saw himself as being a scientist, as an empiricist. At that point in psychology in the twentieth century, there were many definitions of what constituted science in psychology—the only commonality was the fact that they always called themselves scientists. So in a way, you have to bracket out the term. Back to what Siri was saying—yes, Jung believed there were spiritual factors, and Freud was an atheist, and that is one straight dividing line. For Jung, the unconscious was a source of religious experience; as William James put it, if there be divine revelations, they will come through the subliminal door. So it's open to transcendence and other dimensions.

Hustvedt: It's good to frame this question historically and remember that many philosophers, including William James, were keenly interested in psychical research, which at the time was not regarded as outside of science, but inside it. In fact, a writer who was respected in his day but is obscure now wrote *Human Personality and Its Survival of Bodily Death*. You can imagine that few scientists are chasing this guy's ideas at the moment.

Paulson: Who is this writer?

Hustvedt: Frederic W.H. Myers. He was a good friend of William James; he met George Eliot, and he founded the Society for Psychical Research in the late nineteenth century. He was, in fact, a very interesting thinker and promoted an idea he called the *subliminal self*. This self, he argued, was especially active in genius. In genius, the subliminal self could rise up suddenly from unconscious depths and become conscious.

Paulson: Isn't one of the fundamental dividing lines between Freud and Jung is that Freud was an atheist, and Jung was not?

Solms: Yeah, but again I refer to the narcissism of small differences, because I don't think . . .

Shamdasani: I think that's a big difference [*laughter*].

Hustvedt: I do too; I think it's a pretty big difference.

Solms: It's a question that lies outside of science—what one's personal beliefs are. That's why I'm saying these were personal factors between these two personalities, but the idea that you were asking about earlier of a collective unconscious, Freud also had a collective unconscious: the Oedipus complex—these inherited memories of a primal father with his primal pair of scissors cutting off primal penises. This is all "remembered" by us. This also, for Freud, no less than Jung, was the source of our mythologies and our religions.

The fact that Freud didn't believe the religions and Jung did is a minor point, since both of them were Lamarckians. They both believed that we have inherited memories, which incidentally, consigns them both, in this respect, to the dustbin of scientific history, because none of us in contemporary cognitive science or affective neuroscience take seriously the notion of these very complicated inherited knowledge bases.

Hustvedt: No, but DNA methylation studies in epigenetics have demonstrated that stress to an organism can affect the expression or suppression of a gene and that those methylation changes are then inherited by the animal's offspring. This suggests that Lamarck may not have been so off the mark about inheriting acquired characteristics.

Solms: But if you look at it the way Jung and Freud spoke of those inherited, these phylogenetic, memories . . .

Hustvedt: Yes. That's not epigenetic.

Solms: . . . there's really a different story. But in contemporary neuroscience, what's important to mention here are the instincts; we have instinctual predispositions. As I was saying earlier, this was also something which I think is an important part of the unconscious, although I think it's affectively conscious. But we do have innate knowledge of what to do when, for example, you're at a cliff face; you don't jump off to see what happens. We have fear, we have rage, we have attachment bonding—we have all sorts of instinctual predispositions. The important thing in relation to the topic of the unconscious, that would agree with Jung in the most indirect of ways, and with Freud more directly, is that there's an innate tendency which exists within us all.

The important thing in relation to the topic of the unconscious goes back to what I was saying earlier, that these things are deeply felt—consciously felt. Rage, fear, and lust are not unconscious. Why does Freud call them unconscious? It's because they're not reflexively, cognitively conscious—they're not tendencies that we own, that we possess, in our “declarative” self-awareness. I would go so far as to say that, in fact, our cognitive apparatus is designed to render these things unconscious. The instinctual life is so strongly felt that it threatens to overwhelm the cognitive apparatus, and the task of cognitive development is to take ownership of these inclinations and to render them unconscious, to dampen them, to make them less wet.

Hustvedt: Yes—to dry them out [*laughter*].

Shamdasani: To pick up on Siri's reference to Frederic Myers, who William James thought was the candidate for the greatest psychologist at that time, he uses the term *subliminal consciousness*, for interesting reasons. He has a theory that there's no unconscious per se, because we're not dealing with states that are strictly unconscious. We're dealing with different models of what he calls *stratified consciousness*. That's an important sense of different models, because if you start talking about forms of the unconscious that are conscious, the language begins to trip up on itself.

Hustvedt: This idea of a continuum is in Myers. But, actually, what Mark is talking about, just to tell you, is that he has turned Freud on his head. You know [*looking toward Solms*] you've done to Freud what Marx did to Hegel. Because for Mark [*addressing the audience*], the Id is conscious—you can read his very good paper on the subject “The Conscious Id”—that's where he turns Freud upside down.

Paulson: You're the editor of the new collected works of Sigmund Freud—how dare you? [*laughter*]

Hustvedt: So that's why he's emphasizing this; of course emotions are felt. I think you're right; Freud knew that we feel things, but there is a problem.

Solms: I think the problem arises out of not drawing that distinction between the cognitive, representable, thought-type conscious, and the affective feeling-type conscious. It's an utterly different sort of stuff.

Hustvedt: There is the unconscious—the stuff we are never aware of. We are not conscious of our blood moving through our bodies; such physiological processes are unwilling and unknowable from the inside. But there are moments when we forget something and it returns to consciousness later. Sometimes it takes me two days to remember a name, and then it arrives unbidden. This is a passage from unconscious—unavailable—to conscious. The act of writing mimics this process.

Paulson: I want to follow up on that, because Siri, you bring a very interesting perspective to this discussion. You are not only very well versed in the history of thinking about this, but you are also a novelist. Is there a connection between these two things?—your awareness of psychology and how scientists talk about it? Does that make you think any differently about how you write?

Hustvedt: It probably doesn't, but the experience of writing, perhaps particularly writing fiction, is interesting to think of in relation to the unconscious, because at a certain point in a book, the book seems to write itself. What the heck is that? The writer doesn't know where the sentences are coming from. The deep question for me is: Why one story and not another? How does the writer choose? Is the choice conscious?

Paulson: Why?

Hustvedt: Exactly!

Paulson: You're here to explain it, right?

Hustvedt: Mark mentioned this earlier—the only way an artist knows what's right and what's wrong is through a gut feeling. You look at the sentence and you say, "That's it!," or you become absolutely sure that a character has to die—sometimes sadly.

Paulson: You're saying this is coming out of the unconscious, that feeling that . . .

Hustvedt: I always feel that the book is already written and what I'm doing is remembering something that never happened—that I'm trying to drag out an unconscious memory and make it conscious. I'm not alone in feeling this.

Shamdasani: Speaking of writing and memory as recollection, this takes one back to Plato. Those are the classic descriptions of memory that people are now recycling in terms of the unconscious, but Plato got by quite well without speaking of the unconscious or speaking about consciousness, and established the models by which we still debate these terms. So in a way, I'd like to say, again, historically, that people got by for well over a century in the West, and longer elsewhere, without having to cast things in terms of a notion of the unconscious. Shakespeare doesn't use it, and I think there's not much in human conduct that's missing from Shakespeare.

Hustvedt: It's true what you say about Plato, but it's also true that the whole history of the West has been shaped by the mind–body, soul–body distinction. It goes on and on. Now for a feminist moment: the body has been and still is associated with the female, and it was always lower and worse. With Pauline Christianity, this neo-Platonism became even more dramatic. The soul–mind has always been masculine, clean, dry [*laughter*] and elevated. We drag our traditions with us, and they aren't always full of wondrous things for everybody in the population.

Paulson: To bring science, and specifically neuroscience, back into the discussion, isn't creativity, isn't what you do [*speaking to Hustvedt*] as a novelist, a total mystery? The question is, will neuroscience ever be able to explain why, when you're at your writing desk, that a particular story line pops into your head?

Hustvedt: A problem with the study of creativity in contemporary neuroscience is that the definition of creativity is pretty bad. Creativity is defined as something *new, novel*, which is also *useful* to society. Now I ask you whether Emily Dickinson's poems are useful. My novels, are they useful? And what would their use be? It's a corporate definition. We want our workers to be really creative and to create useful things that will make us a lot of money—that's a problem. The other element often discussed is *divergent thinking*—that people who can make distant associations are creative. I think that's true sometimes, and other times, it's probably not true.

Paulson: I want to come back to this question about neuroscience.

Hustvedt: I think, however, there are interesting questions to be asked that brain studies might be able to answer.

Paulson: For instance?

Hustvedt: For example, connectivity in the brain—what is being harnessed at those moments when people are in the so-called zone—would be interesting.

Paulson: Mark, you are our resident neurobiologist on the panel—what's your take on this.

Solms: First of all, I agree not only with regard to creativity, but also a lot else in the life of the mind. In cognitive neuroscience, we have very denuded conceptualizations of these things, and we're slowly getting better at it. As our understanding improves—as we are brave enough to encompass properly what we mean by creativity—we will get a better grasp on it. The place I look to for the beginnings of an understanding, or the beginnings of some ideas that might be useful, is the brain mechanisms of dreaming. The dipping into an altered state, a different way of thinking, and the ability to bring that back into the rational waking world have some important analogies with what creativity in the fuller sense of the word is all about.

In the dreaming brain, the prefrontal cortex, the rational, goal-directed, logical, reality-oriented executive of the mind is massively deactivated. That instinctual emotional part that I spoke of earlier, the limbic structures, switch on like a Christmas tree. And as you come out of dreaming sleep, the frontal lobes come back online, and then there's an inhibition and a removal from consciousness—a forgetting—of the dream. Creative people can retain the dream, as it were, a little bit longer. They're able to dip into it without living in a dream; they don't cut themselves off from it entirely. It has something to do with the prefrontal cortex allowing the limbic ways to function a little bit longer and then grabbing hold of them and turning them to, dare I say, useful effect.

Hustvedt: Jung was *very* interested in these processes and had some psychotic experiences himself, didn't he? Or would you call them . . . hallucinatory?

Shamdasani: I wouldn't say he had psychotic experiences. I would say his main work had to do with the exploration of hypnagogic visions in a waking state, which was something quite specific.

Hustvedt: By the way, I have no prejudice. I have had hallucinations, and I experience hypnagogia every night.

Shamdasani: That's the stuff he was trying to explore.

Paulson: Jung came up with a phrase that was part of his way, as I understand it, of accessing the unconscious—it's what he called *active imagination*. Can you explain what he meant by that?

Shamdasani: I'd like to pick up again on Siri's reference to Frederic Myers—for Myers, a genius was someone who had the subliminal on tap. The question posed then is, how do you access those resources, if they are the source of creativity as well as pathology? For Jung—around 1913 and 1914—he'd been practicing analysis for quite a while. Dream analysis wasn't sufficient. There needed to be another way of accessing this material in a waking state. People at the time were using things like automatic writing and crystal gazing, to try to foster image making. What Jung would do would be to enter into fantasies, provoke fantasies in a waking state, and enter into dialogue with the characters that emerged. In a way, this is not too far removed from what a novelist or playwright does, in terms of creating characters.

Paulson: I'm trying to imagine this. Is Jung semi-awake? Is he fully awake? What sort of state of consciousness is he in when he's doing this?

Shamdasani: He's awake, entering into a state of concentration and allowing images to emerge—entering into dialoguing with the characters that emerged, and sometimes then painting and drawing, and allowing these images to say something back to him—not trying to immediately interpret them.

Paulson: That sounds a little like writing a novel!

Hustvedt: This is the lowdown: you cannot write a novel unless you are in a state of deep relaxation. This doesn't mean you aren't concentrating, but rather that your body must be open and loose, which is the same state you're referring to in Jung. Often, at night, I go to sleep and I have my hypnogogic images, and I hear my characters talking. Their talk isn't outside my head but inside. The conversations don't necessarily appear on the page the next day, but that is the form of openness I cultivate when I am writing.

Paulson: You're talking about techniques to access the unconscious, getting yourself into almost an altered state of mind—to tap this other part of you that normally we don't have access to.

Hustvedt: I think many writers actually do—and painters and musicians.

Shamdasani: And the psychologist Pierre Janet would use this in psychotherapy as a form of distraction. You distract yourself to allow another aspect to function freely, in a more imaginative way.

Paulson: Mark, what are some effective techniques you've come across, if we want to gain more access to our unconscious?—because it could be a source of nourishment or of creativity.

Solms: I must confess that I don't have any special expertise for enhancing creativity, but in terms of gaining access to the unconscious, the standard method in psychoanalysis, in which you can see parallels with what has been said, is the free association method. It's a giving up of deliberate, controlled channeling of thought processes and allowing one's thoughts to emerge freely, and then trying to report them as fully and with as little censorship as possible. That is the standard method—the fundamental technique of psychoanalysis.

You can see how, in relation to what I was saying earlier, the sort of prefrontal lobe's focused attention is given up and then these more implicit mechanisms come to the fore. This is where the link is with creativity. It's not just giving free rein—there's a sort of a coming and going; there's an observing Ego that notices what you're saying and making use of it. It's not just rambling; it's rambling and then noticing the structure of one's rambles—rambling and then noticing, "Ah, there's a pattern to this!" Or one's analyst notices the pattern.

The analysis of dreams is another standard psychoanalytical technique for gaining access to the unconscious. It's really just a specialized form of the same thing, except here you're free associating in relation to the dream. You report the dream and then you say everything that comes to mind in relation to the dream. Why that is uniquely productive of insight into what is normally unconscious is because the dream itself is generated without the prefrontal lobes being part of the story. You already have unalloyed, instinctual, Id-like, limbic system functions, and when you freely associate in relation to that, you're going to get even deeper access. Normally you don't in waking life; you don't have a conscious form of those Id-like thoughts, but in the dream, you do, because the prefrontal lobes are offline during sleep.

Hustvedt: I think psychoanalysis broadens the spectrum to nonartists. One of my favorite quotes is from Einstein. He was asked by Jacques Hadamard how he worked, and Einstein—I am summarizing—replied that his real work was visual, emotional, and muscular. That is where his real work took place. Signs—linguistic and mathematical—came later in the process. I think this is a profound insight into creative work of all kinds—we are looking at the activation of deep motor, visual, and prelinguistic parts of ourselves.

Paulson: There's another piece of the unconscious that those of us with more of a spiritual inclination would look to—this would seem to be where those moments of transcendence come from. You see the world in a different way; I know this is one thing that Jung talked about, for instance. I'm assuming that a lot of what we would call religious experience comes out of the unconscious—fair to say?

Shamdasani: That was the model first put forward by Théodore Flournoy and William James—the notion that it's precisely within those states where there is access to another dimension, in all likelihood. Jung followed on in that way, but again, you find in Jung's own personal writings—in his *Black Books*, and in the *Red Book*—that he doesn't use the term *unconscious*.

Paulson: He never uses that word at all?

Shamdasani: Not in those texts. He uses the word *fantasy* and he uses the word *symbol*. He doesn't need the term *unconscious*. For him, the term was an attempt to translate his conceptions and insights in his public writings into a language acceptable to a medical and scientific audience.

Paulson: That's interesting. So *symbol* was a more acceptable word than the *unconscious*, for scientists?

Shamdasani: No, he thought *unconscious* was a more acceptable word for a medical and scientific audience. In that sense, it's a way of trying to validate certain experiences—to say these experiences are not out of the human. They are legitimate, and there are ways to try to facilitate those.

Solms: I'd like to introduce something else from the cognitive neuroscience perspective, which relates to some of the questions that we've been discussing, which is that there is great pressure to automatize. Our conscious cognitive capacity is exceedingly limited. The reason that telephone numbers are seven digits long is because that's the extent of conscious cognitive capacity. We're able to hold in mind seven bits of information consciously at any one point in time. If you think of how much information your mind consists and then compare that to the number seven, you'll get some sense of just how small our capacity is. It's an extremely limited and therefore precious resource; it has to be used sparingly. That's why there's pressure to chunk things out of consciousness as rapidly as possible, so you can use consciousness only to the extent that you really have to.

As we've learned how things work, as we've mastered things, as we've solved problems, they become automatized—the solutions. When I'm facing this problem, that's what I do. I don't even realize that that's what I'm doing. What that means is that our deepest knowledge, the deepest pattern of how things work, is paradoxically less available to consciousness, so that we're dealing with all of the concrete details

consciously, and our wisdom, as it were, has been chunked down. We speak of “systems consolidation” in neuroscience. It goes down to deeper brain systems until ultimately, if you get down to the level of the basal ganglia, as I was saying earlier, it’s no longer representable. You have deep understanding of what to do in the world and how the world works, but that understanding is not declarative understanding.

Both with regard to creativity and spirituality, these unique individuals, with altered states and with the aid of substances, help us gain access to these normally unconscious modes of cognition, where affect also strongly dominates. Deeply consolidated material is brought to the surface; so there’s profound wisdom, a profound sort of revelation of the deep structure of things which we value in the work of artists and visionaries.

Paulson: You’ve all spent years studying these things. You’re deeply well versed in the history of these ideas about the unconscious, about the mind. Given all of that, has that changed anything about what you do in your own lives—to have a more rewarding life? If you wanted to tap your own unconscious to have a more fulfilling life, would it make any difference?

Hustvedt: I’ve long been fascinated by child development. Someone once asked me if all I had read on the subject had affected the way I brought up my daughter, and I answered, “Well, I don’t really think so.” Much of what we do is intuitive. Does what I know about the unconscious or the mind–body problem affect my work as a writer?

Paulson: I think the answer is *no*, is what you’re saying.

Hustvedt: No, not really—not at the deepest levels of my work.

Solms: I could say many things, but the essence of it is that I have greater humility in relation to what I can know. To what extent can I really solve a particular problem? To what extent should I even try to be consciously on top of it? It’s giving myself over a little bit more to intuition. Not that that means *anything goes*, but it’s recognizing that there are many things that I’ve learnt and I don’t even know what they are. I’m willing to hand over control. But also, which is a slightly different aspect of the same thing, there’s a humility as to what one can understand. I don’t value thinking and logic as highly as I did when I was a young man—I understand the limits of knowledge, the limits of what one can understand—a giving oneself over also in that sense. There are also limits to science—it’s not the beginning and end of everything. It’s a very valuable thing, but it’s not everything.

Paulson: Sonu?

Shamdasani: When I read Jung and Freud in my teens, I acquired an unconscious [*laughter*]. The more I began to study it historically, I decided to opt out of the unconscious [*laughter*]. So I think I had one for about a decade. Not to say that I think it’s not a valid notion if one wants to have one. It is a valid way of conceiving of one’s life and the lives of others, as a hermeneutic, as a narrative, even as a therapeutic. But to me, I just prefer to travel light. More problems are associated with it than I want [*laughter*].

Paulson: We spend a lot of time talking about Freud and Jung, and, of course, they came up with their theories a century ago or so. Do we need a new model of the unconscious in today’s world, given all that we know through science?

Hustvedt: There is a new model—there’s *neuropsychanalysis*. I know Mark because I was interested in his work, we met, and he got me involved. The standard model of the mind used in neuroscience and its cognitive unconscious is impoverished, in part, because the long history of the unconscious has been ignored.

Paulson: What's your model?

Hustvedt: A good model must include subjective experience as well as the objective realities of brain regions, synapses, and neurochemicals. The urge to make the unconscious more reality bound and more rational, to make it colder and drier, is not purely scientific—it is also ideological.

Solms: Regarding the question, Is a new model required?, I heard it in a different way from how Siri did. The cognitive neuroscience model of the unconscious is hardly new anymore—it's been around for decades. What's needed is a model which can accommodate both what the psychoanalytical tradition encompassed under the term *unconscious*, and what we've since learnt, because let us not forget that cognitive neuroscience has added something, for heaven's sake! We've learned some new things about how the mind works.

As you heard from the slightly comical quote that Siri read us, it almost deliberately excludes so much else that clearly needs to be accommodated. If we need a new model, it would be a model that could reconcile both the affective and instinctual, the more troubling unconscious of Freud, and everything that we've learned about the brain mechanisms of how conscious mental processes become unconscious. I would even like to indicate the direction forwards. The essential idea in the cognitive unconscious is that when a problem is solved, it is automatized. I've said already why there's great pressure to do that. In the Freudian view of the unconscious, one never talks of automatizing things; rather there is this irrational repeating of things which is not in your own best interest and your not knowing why you do it.

I think that the link between the two is this: in the cognitive unconscious, we speak of automatizing problems once they're solved, but we don't make any reference to the fact that many problems in life are insoluble. What do you do with those problems? You're a little kid—"I'm Mark Solms; I'm 4 years old, and there are problems I really want to solve. I want to be big like Daddy. I want to be the boss of the family. I want to be driving cars. I want to make babies. I want to make babies with *her*, and I want to do it *now!*" But you don't have the foggiest clue how to make babies, and there's no way that you can take the place of your father.

So you have two choices: Either you carry on thinking about this problem to the exclusion of "two plus two is four," and how to tie your shoelaces, because you've only got seven bits of information that you can concentrate on; or you say, "I believe it works like this; this is how I'm going to do it—that works,"—even though it doesn't. And you automatize nonsolutions. You automatize childish ways of trying to solve the thing, and then you put it out of mind and cut your losses. The unconscious, the cognitive unconscious, includes also these things, prematurely automatized or illegitimately automatized childish solutions, which are now rendered automatic and unconscious and they're not subject to updating. I think that that's the beginning of a reconciliation of the two models.

Shamdasani: When you ask, Does one need a new model?, it sounds like, Have you upgraded yet? Are you still on Windows 8? An iPhone 5, or something? Are you missing some drives or certain levers to function?

Hustvedt: The science models are important, to be fair, right? If you're going to do hard science, you need a model. That model is not the world. That model is a way to understand something about the world. Models change because you want something better than your older, lousier model.

Shamdasani: One needs to move, then, out of conceptual debates and ask, How do these models function in society? Are all people with different "models" of the unconscious happy? Do they actually have more self-knowledge? Can you actually tell: "Oh, he's got an unconscious," or "She's got an unconscious," or "There's someone with a Jungian unconscious, or an Adlerian"—or something? I mean this quite seriously in terms of an ethnography of how the unconscious is then lived and embodied by different social groups. Where do more people have an unconscious? Is it in the big metropolises?—in London, in New York, even in certain suburbs in these cities? How do they interface with people who don't have one?

Paulson: Okay, let me turn that around a little bit, then. Really what you're saying is that the proof is in the pudding, and let's look for where people are happier—where people have fuller, richer lives.

Hustvedt: There's a utilitarian aspect to this debate, but I also think we have important philosophical differences that are represented right here on this panel. I'm not exactly sure where I want to situate myself—somewhere between, I think. What you are talking about [*turning to Shamdasani*] is essentially the idea that the unconscious is something that was created in various places over time. It's a construct, a cultural or societal construct, that then works in the world as such, and that for you, the idea that there is some empirical, some "out there," unconscious is simply either not interesting or not true.

Shamdasani: Yes, that's my position—in the way that Wittgenstein put it, meaning is use—the unconscious is not simply how it's defined, conceptually, although that's a critical part of it. Let's look—we can now view a century of how people took up this notion. How is it embodied in institutions? What work does it do in society? Let's try to look at it in the way an anthropologist would.

Paulson: Mark?

Solms: Scientific constructs are cultural constructs, but they're jolly good ones, because we are self-consciously trying to accommodate all the observed facts. If we have a construct that leaves out some of the facts, there's something wrong with the construct, so we upgrade it, not because we want a new one in the cultural sense that you're referring to, but because there's clearly something that needs to be improved. In relation to our constructs of the unconscious, I was saying we have facts that are accounted for by cognitive neuroscience, which were not accounted for by psychoanalysis, and vice versa, so what we need is a construct that can accommodate all these facts. The definition of the cognitive unconscious that Siri read at the beginning, about a kinder, gentler, nicer sort of unconscious, is just not true. Look at the way we actually behave! So we need a construct of how it works which takes into account our more primitive inclinations. It's very important for us to have an understanding of the human condition that is not so self-deluding.

Hustvedt: It's interesting to be sitting between these two points of view. On one side is "unconscious is a cultural construct;" on the other, "there is something real about the unconscious that can be scientifically demonstrated." But one of the further problems with the unconscious in cognitive science is that it has been heavily influenced by the first generation computational theory of mind. It rose out of Turing's machine and the McCulloch and Pitts binary neurons. It is neo-Cartesian, and it hides a mind-body dualism. Neuroscience has not addressed this problem well enough. There is now a move toward embodied theories of mind. They are hot at the moment, and there are many versions of embodiment. The cognitive unconscious has never been able to fit emotion into its framework well . . .

Solms: For exactly that reason.

Hustvedt: . . . and that became a big problem because the mind was understood as a problem-solving machine.

Shamdasani: As a rider to that, I spent a lot of time working and writing on the history of concepts of the unconscious, and I suddenly had an idea that struck me as very dumb that I had not thought about before. I came to see that the unconscious was really a small story within a larger history of consciousness, in which, paradoxically, there was a lot less work done at a historical level. The main issue is *dualism*. That is the more fundamental problem.

Hustvedt: Right; that is the fundamental problem.

Shamdasani: Whether you have an unconscious, or a semi-unconscious, or a stratified consciousness—those are secondary problems to dualism.

Paulson: We could keep going on here, but I want to make sure that our audience has a chance to weigh in with their questions and comments.

Audience member 1: Having been under anesthesia, it occurred to me that that was complete brain shutdown. There was no sense of unconsciousness, there was no dreaming, there was no consciousness—it was as if the whole brain, except for the autonomic nervous system, was shut down. Is it possible, then, to turn off entirely consciousness and unconsciousness? Correspondingly, with psychotropic drugs like LSD and psilocybin, do they not access some sort of unconsciousness that we normally never see? In fact, aboriginal people have been accessing unconsciousness forever, because they see it as an entry into what they call the spiritual world. Have you missed an area of brain function that I'm referring to?

Solms: You seem to be asking about two diametrically opposite things, I think deliberately so. Starting with the LSD and psilocybin, these are drugs that act on the cortex, that is, on the cognitive part of the brain, and they are undoing their normal modes of operating, so it is, I think, revelatory of more normally inhibited modes of cognition and affectivity. Altered states of consciousness have been valued in a great many cultural traditions, precisely because it gives us access to these deeper strata of the mind, the deeper modes of functioning of the mind, which are terribly important because they actually govern what we do; they govern what we know, and we don't normally have access to them.

As to the other part of your question about possibly shutting consciousness off completely and your experience of being under general anesthesia, I want to tell you that there are many different modes of action of general anesthetics. They don't all do the same thing in the brain. What's frightening, for those of us who every now and then need a general anesthetic, is that physiologists don't understand that much about exactly what's going on in the brain with general anesthesia. There have been a lot of advances in current times, in terms of our understanding at the cellular level and at the systems level, but it's a rapidly evolving field. We're catching up with what these drugs do.

Audience member 2: You talk about the prefrontal cortex and battenning things down—letting other things out. How do you see that connecting, in terms of creativity, to what they now call “outsider artists?”—often people with severe developmental or cognitive disabilities may not have that same kind of prefrontal cortex strength.

Hustvedt: Some interesting work has been done on creativity in people with schizophrenia, brain injuries, and Alzheimer's disease. Often these people were not creative before their affliction, but suddenly, they have an urge to write poetry or to draw—they acquire a facility for writing or drawing. This suggests that brain changes even from serious injuries can jog both artistic desire and capability. There's a neurologist named Alice Flaherty, whom I saw not long ago when I gave a talk in Boston. She experienced a powerful need to write after she gave birth. She tells that story in her very good book, *The Midnight Disease*.

Audience member 3: At the very beginning of the panel, there was mention about brain development in infants and children, and that they observe things that happen again and again. They see patterns of language and patterns of what they see, and they put the patterns together and remember the patterns. Then, when the patterns come up again, they can act upon those, or they know what words follow other words, because they find the patterns. But then the patterns form hierarchies—patterns of patterns—and that becomes insight, know-how, knowledge—and then patterns of patterns of patterns. You keep building up a hierarchy of patterns and you get to wisdom. Then maybe there's a level above that, that you can't possibly explain, that becomes another dimension of the unconscious that makes you do things, because it's a pattern that your brain has learned. Maybe the reconciliation of intuition, which you're born with,

and what you see and learn, through patterns, becomes reconciled into your behavior. But the unconscious part is the highest level of the hierarchy of patterns.

Paulson: I love the fact that you've brought *wisdom* into the discussion here. So how does that fit in our discussion?

Solms: It all hangs on how you want to see the hierarchy. The image that was forming in my mind as you were iterating these patterns of patterns of patterns, was that the deepest patterns, in other words, the lowest ones, contain the most concentrated knowledge, as it were. The surface is dealing with the here and now, and what you've learned before is chunked down. Eventually, it's no longer cortical—it becomes subcortical; it becomes basal ganglia. These thoughts can no longer be declared; they're no longer representable. These deeply automatized modes of operating in the world, just knowing what to do, which we call *intuition*, are the deepest patterns. I don't know if that's wisdom. Wisdom requires something more along the lines of what we were talking about earlier in relation to creativity. It's something to do with the capacity to bring these deeper structures back to declarative awareness. Being a zombie is not being wise, you know. Being able to declare the patterns—to bring them to light, to be able to share, to make us aware of what it is that we're doing—that's something very valuable.

Hustvedt: You said something very important in the beginning about a child learning. Children learn through other people. One thing about the Western tradition that drives me crazy is the idea of the autonomous man. You can't have a brain without another brain. We human beings are neotenous; we develop very slowly—much more slowly than most other mammals. If you leave an infant out alone, it dies; we need others to survive. And we develop very slowly through those necessary others, which might very well explain something about our greater reflective capacities—our ability to imagine ourselves as others.

Solms: Being aware of that is wisdom.

Hustvedt: Being aware of that is wisdom; we need and depend on other people. This is, in fact, foreign to philosophical and scientific traditions that regard the brain as if it were an isolated organ—not in relation to the rest of the body and not in relation to other people.

Shamdasani: I'm struck by the terms of the debate—by what a colleague of mine, Fernando Vidal, calls “brainhood.” We live in an era, he argues, where we now have the cerebral subject, where traditional forms of understanding are being reclassified in a neural language. So the simple question of wisdom, which for Socrates was quite simply answered with knowing that you don't know, is now being—I'm not criticizing it—redefined in neural terms. In a way, you have a reclassification of Western thought. But guess what, most of the language remains exactly the same, but with a *neuro* prefix in front of it. To me, this whole intellectual and social formation needs to be studied from the outside as well as developed from within.

Audience member 4: We live in a digital, social world now, and we have a so-called digital native generation, like my daughter, who can manipulate three or four different devices and still have a conversation with me. What's your view on the import of this new social cultural context and behaviors on the unconscious?

Solms: I'll say two things. I think that we overestimate the impact of these things. A little more than 100 years ago, we were terrified about the impact of the speed of railway carriages, and what this would do to our brains—we thought we weren't designed for these speeds, and we suffered whole new disorders, “railway spine,” and so on. Guess what? The next generation seemed to manage perfectly well. So the capacity for adaptation of thalamocortical structures—if you'll forgive my neurologizing everything—is enormous. It freaks you out, but it doesn't freak your daughter out.

On the other hand, being an old dog myself, I am concerned about the loss of embodiment. There are many things that our brains are designed to do, precisely as Siri was saying a moment ago, not only in relation to our own physical bodies, but also in relation to other bodies—to take one example, rough-and-tumble play. There are instinctual brain mechanisms for play, and our understanding of why play is so important for mammals is that it has everything to do with working out some sort of social structure that's okay for both of you, or for all three of you—working out the rules of the game. What can I get away with? What can't I get away with? If I push too far, then they won't play anymore. This sort of physical play is terribly important for society. Playing games against a computer, where there's no other being there and where there's no actual seeing what the effects on another being of your actions are—I think that there is something lost there.

Shamdasani: What I'm struck by, for example, is that if you read the Freud–Jung correspondence—it's a great correspondence—you find individuals that are able to write a 10-page theoretical letter on a new theory they've not developed before. They've not kept a carbon copy, they've not pressed *save*—they've merely sent it off. In three weeks' time, they're able to exactly follow on and not miss a beat. Memory capacity, now—to my mind, as far as I see—is not what it was then. I see that also in my own life, starting with precomputer days until now. When we speak about localizing consciousness or functions, such as memory, in the brain, it's important to realize that memory is not a constant, at a historical level. We adapt, we offload to technological prosthetic devices, and we change in very interesting ways.

Paulson: So the question is, Are we losing anything in that process?—because obviously, with our devices, the capacity for memory is much greater than it used to be.

Shamdasani: It shifts, so, to me, one almost becomes like a librarian. One has to know where to find things one has put, rather than retain things in memory. We're not dealing with a culture that memorized verse and built up great mnemonic capacities.

Hustvedt: But this is Plato again; we keep going back to Plato. He was worried about writing because a person would lose the oral gifts of memory. We keep changing and we keep staying the same.

Audience member 5: Does the dream that everyone has had about being naked in high school come from the collective unconscious, or is it a neurological reaction to stress?

Hustvedt: Since everybody in the world probably hasn't attended high school, do you mean some version of that?

Shamdasani: I'll wait until I have that dream before I say.

Paulson: I have not had that dream that I'm aware of.

Solms: There have been empirical studies about this going back to the 1950s; I mention this because we've now got an expanse of sixty-odd years to see whether these dreams have changed over a period when societies have changed very rapidly. It's not just a matter of time, it's also geographical spread; these studies were done all over the world. It's really quite remarkable how there are indeed typical dreams: for example, the dream of being inappropriately clad in a public place, the dream of being on stage and having to deliver something and being unprepared for it, and the dream of having to resit for an examination that one thought one had passed long ago. These are types of dreams that are remarkably uniform across human cultures and across decades of time.

But I have to say, our understanding of where these dreams come from doesn't begin to do justice to the profoundly striking fact that such typical dreams exist. At least they show that dreams can't be

random froth—they can't be meaningless junk. The fact that we've seen these structured forms of dreams throughout human societies for over sixty years says that dreams are coherent processes. They have the dignity of actual cognition, which serves some purpose. But beyond that, I don't think we understand where these dreams come from.

I'll also say one other thing, though not about dreams; there's a thing called REM sleep behavior disorder, which comes with certain Parkinsonian diseases. You can artificially create it in animals—not me, my colleagues—by lesioning a part of the midbrain, and then the animal acts out its dreams, and we humans with those diseases act out our dreams. There too, there's remarkable uniformity, but the striking thing is that the behavior one sees in REM behavior disorder, and in these lesioned animals, is instinctual behavior, for example, stalking, pouncing, and copulating. You don't enact writing an exam.

Audience member 6: It seems like we've left out something here, which is the brain. I'm aware of the neurobiology of the latest neuroscience—a Darwinian look at how the brain works in terms of a threat circuit, an attachment circuit, and a sexual reproduction circuit, and looking at how that works up in the brain to the prefrontal cortex. On the other side, when you said you can't be aware of unconscious behavior—with all of this discussion of meditation and mindfulness, with teaching people to be aware of heartbeat and being aware of bodily reactions so that we can begin to make sense of them—we haven't mentioned Buddhism. There are studies with Buddhist monks who have the ability to not respond to the startle reflex through meditation—the startle reflex is an automatic thing. Is the unconscious visible in Buddhism, and how do you deal with mindfulness and meditation in today's world?

Hustvedt: As Mark was saying, there's a lot of brain research moving steadily forward, but it's important to frame this with a truth: there is, as yet, no consensus for a working model of the mind. There are many different ideas. We read about locationist notions all the time: there's a part of the brain for this and for that—morality, religion, map reading. Locationist theories have been around since the Greeks, and they carry some of the truth, but they don't carry all of the truth. Because so many brain regions are involved in so many functions or processes, it's important to acknowledge that brain research is an ongoing project and much remains unknown. As for Buddhism, as you probably know, there's a lot of communication these days between people doing brain research and Buddhist monks, because people with such tremendous meditation skills are fascinating to scientists.

Shamdasani: There are two aspects I'd like to pick up on in your question. The first is, you're entirely right, there are traditions of transformative practices that, in terms of the control of the body in Buddhism and yoga and so forth, are quite radically different from practices in the West and that deserve further study. But there's a note of caution sounded by a great Tibetan scholar, Donald Lopez, who wrote a report called *The Scientific Buddha: His Short and Happy Life*. It's about modes in which Buddhism has been reinvented in terms of this so-called marriage between Buddhism and scientists. One aspect of this is *mindfulness*. As Lopez has shown, if you read these texts from which this term is derived, they involve practices such as going to cemeteries and imagining oneself as a corpse. These practices were actually designed to increase stress; they were not designed to decrease stress. They were designed to increase stress until one realizes the impermanence and broke free of one's actual state. So with regard to the term *mindfulness*, there's no concept of *mind* in Buddhism, so how can one be mindful? It's a particularly gruesome translation, and Mark knows something about gruesome translations in the case of Freud and their effects on thought.

Paulson: We have more questions, but we have no more time. You have been a wonderful audience. Thank you so much, and thank you to our guests.

Acknowledgments

Steve Paulson, executive producer and one of the founders of *To the Best of Our Knowledge*, moderated the panel of experts. The preceding is an edited transcript of the discussion from February 15, 2017, 7:00 PM—8:30 PM, at the New York Academy of Sciences in New York City.

Competing interests

The authors declare no competing interests.

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