MIND AND REALITY - Day 1

Tape 5 of 8 – Panel on Experience

TAPE START

CHRIS KELLEY

00:00.15 If everyone could begin to sit down, please. Unfortunately, the sun has come out and we don't have a way of controlling that, so. Yeah, why not? Exactly, I mean, you'd think Columbia could afford some drapes, but apparently not.

00:00.49 The next panel- If you were here for our morning panel, that was the knowledge panel and the focus there was epistemology. We're moving now into panel two, which we've called Experience. And the focus is subjective experience, issues of phenomenology.

00:01.09 If you weren't here this morning, I'd like to thank you for coming. I know it wasn't necessarily easy and I'd also like to re-state

something I said earlier, which is that all of the target essays and keynote essays are online at our blog, which is www.blog.mindandreality.org.

00:01.34 And I encourage you to look at those and to also comment if you like. We're gonna try to answer all of your questions at the end of the panel, but if you don't get your question addressed, there is a chance that if you put it online, you might get a response from somebody, somewhere.

00:01.54 That said, we're handing out pink index cards and during the panel if you think of something you want to ask, jot it down and at the end of the panel, the moderator will collect the cards, we'll collect the cards. You'll see Annabella and I going up and down the aisles.

00:02.13 And we'll give them to the moderator and he'll select a few to ask. So, please feel free to express yourself and thank you again for coming.

I'm gonna turn things now over to our moderator, Mark- Who's that? Mark Siderits, sorry.

MARK SIDERITS

00:02.34 Ok, our target essay is by William Waldron who is chair of the religious studies department at Middlebury College and ok, we all heard this morning that the author of the target essay is the one with the big, red circle painted on them.

00:02.54 Now, some of us are good at visualization. Can anyone actually pick out which of the other three people up here is the target essayist? Well, no. Ok. It's William Waldron.

WILLIAM WALDRON

00:03.06 Alright, thank you. I will follow the lead of one of our earlier panelists and read my paper. I believe that will be much more precise and concise if I do so. It will be accompanied with some PowerPoint slides, which I hope will make a

lot of these abstract concepts, will give you representations for these.

00:03.31 So, thank you very much for inviting me to speak to you today. Is this too loud? Ok. I hope you find that these ideas, though tentative and exploratory, as intriguing as I do. I also hope that they contribute to the ongoing collaborations between Buddhist scholars and cognitive scientists to come to a better understanding of mind.

00:03.52 The basic problem I want to address today is how we might understand human experience without postulating an unchanging subject of that experience. This is a problem shared with science in general and cognitive science in particular, which almost universally disavows an essential unitary autonomous self.

00:04.14 This leads to a disjunction between systematic analyses of experience - in terms of purely

impersonal forces, as typically practiced in the sciences - and the sense we all have of experience as deeply personal and subjective.

00:04.29 After all, don't we all balk at the idea that we fall in love just because our genes, hormones and gender roles made us do it? But aren't we also loath to simply ignore these influences on our behavior? The teachings of the Buddha suggest that these problems arise from the way that we frame our questions.

00:04.49 And that they might be avoided if we changed our terms of analysis. If we stopped asking who does what to whom and start asking under what conditions, what recurrent patterns of interaction does such and such occur. Someone asked Buddha, "Who is it that craves?" "Not a fit question," the Buddha said. "I do not say someone craves. But if you were to ask, conditioned by what is craving, this would be a fit question."

00:05.21 This form of questioning is precisely the mode of analysis, the causal syntax, if you will, of dependent arising – the most distinctive teaching of the Buddha. This approach is succinctly expressed in the well-known formula, when this is, that comes to be. With the arising of this, that arises. When this is not, that does not come to be. With the cessation of this, that ceases.

00:05.46 It would be hard to exaggerate the importance of this view or to exhaust its implications. The implications I wish to explore today pertain to the dependent arising of consciousness or cognitive awareness. And I will use these two interchangeably.

00:06.02 As they are first found in the teachings of the Buddha from the 5th century before the Common Era and finally, in the Yogacharya school of Indian Buddhism in the 5th century of the Common Era with some attention in between to the constructive

role that consciousness plays in the patterns of circular causality, called samsara.

00:06.22 If we follow the implications of this view, we shall see not only that our experience, but also our worlds of experience, can be systematically analyzed in terms of dependent arising without postulating a substantive, unchanging subject of experience.

00:06.43 In this analysis, cognitive awareness, vijñ_na in Sanskrit, arises from two main conditions. Visual consciousness arises dependent upon the eye and visual form. More precisely, cognitive awareness arises when a stimulus appears in its appropriate sense field, impinging upon its respective sense organ with attention there.

00:07.07 Attention, awareness is always intrinsic, as Georges was talking to, to vijñ_na. Human modes of cognitive awareness are classified according to our six faculties – eyes, ears, nose, tongue,

body, and mind. These modes of analysis all occur due to contact between the faculties and their correlative objects.

00:07.28 Though simple, this analysis entails several interesting implications. First, unlike most philosophical traditions, cognitive awareness here is not a faculty that actively cognizes objects. It is merely a result of dukkhat_, of the coming together of an appropriate stimulus with its respective sense organ.

00:07.51 Second, cognitive awareness is an event which only occurs when the sense organs are stimulated. But stimuli are not objects, per se, they're whatever brings about a change in the sense organ in relation to its respective sense field. Without such change, there would be no cognition.

00:08.10 We are, for example, effectively blinded in the white out of a blizzard, since there are no contrasting shades or colors. And we scarcely

notice the steady hum of a refrigerator until it stops. A stimulus is thus like a spark. It has to be distinctive enough, both spatially and temporally for it to instigate a moment of awareness.

00:08.32 These contextual and temporal distinctions are not so much the resulting product of cognitive awareness as the requisite conditions for it. A perfectly camouflaged insect has to move to be perceived.

00:08.48 Third, the kind of distinctions that can stimulate awareness depends upon the responsive structures of the sense faculties. We do not see ultraviolet light that bees do, nor hear the ultrasonic sounds that bats do. Without equipment, they are not part of our world. This necessary correlation is neatly captured by the expression “visible object.”

00:09.10 But this also means that the contours of our world are effectively defined by the range of our possible cognitions. And these depend upon the structure of our particular faculties. Like the visible object, ours is an experienceable world. And this is exactly how the Buddha defined world – loka.

00:09.32 This is from one of the early Pali texts: "In this fathom long body with its perceptions and thoughts, I proclaim the world to be, likewise the origin of the world and the destruction of the world, likewise the method leading to the destruction of the world."

00:09.48 And thus it also follows our fourth point is since cognitive awareness only arises with a contact between a sense faculty and its correlative objects, it does not occur with either of them separately. Without a sense faculty, there would be no cognitive awareness,

to be sure, but just as surely, there would be no awareness without a stimuli or object.

00:10.12 Cognitive awareness, then, is neither purely subjective, nor wholly objective. It might be the concept Ned Block wants. Wherever he is. Rather, it arises at the interface, the concomitant of a sense organ and its correlative stimuli. Cognitive awareness is thus transactional, as well as temporal.

00:10.36 This is remarkably similar to the modern understanding of color perception. According to cognitive scientists Lakoff and Johnson, quote, "Colors are not objective. There is in the grass and the sky no greenness or blueness independent of retinas, color cones, neural circuitry in brains. Nor are colors purely subjective, they're neither a figment of our imaginations, nor spontaneous creations of our brains.

00:11.01 Rather, color is a function of the world and our biology interacting," end quote. In short, ordinary awareness is an event that occurs supported by specific sense faculties, which are only triggered by distinctive stimuli and whose correlative coming together defines our world of experience.

00:11.22 The world that we experience is thus both constructed and ephemeral at the same time. This is the only way that I can make sense of the otherwise incomprehensible notion that the world and all of its dharmas arise from nowhere and go to nowhere. As the Buddha liked to say, "It is like a dream, a phantom, a flash of lightening."

00:11.46 But we don't usually experience things this way and further analysis suggests why. First, although cognitive awareness depends upon disjunction – vijñ_na is literally a knowing separately – in Buddhist analysis it is always accompanied by saüs_ra, a knowing together. This-

I have a quote here from the Pali texts that I think addresses a little bit of what was discussed earlier.

00:12.12 This is, the Buddha was saying, "Feeling, conception and perception – these factors are conjoined, not disjoined and it is impossible to separate each of these states from the others in order to describe the difference between them. For what one feels that one apperceives and what"- I'm sorry – "that one conceives and what one conceives that one perceives."

00:12.38 And so, in the Buddhist analysis, vijñ_na is always accompanied by saüs_ra, a going together. And this is the apprehension of a distinctive quality or characteristic mark, typically defined as recognizing blue or red or green. Such marks are thus not just cognized disjunctively, they're also re-cognized, recognized categorically as identifiable kinds or classes of objects.

00:13.07 And this, too, is similar to modern analysis. Cognitive scientist Christine Skarda, for example, observes that "The receptor neurons of the sense organs are stimulus specific in terms of their response characteristics. Each responds maximally to a specific type or class of stimuli, such as certain ranges or intensities of light, temperature, sound, et cetera."

00:13.30 "And every feature," she continues, "acquires its unique nature by being contrasted with another," end quote. Lakoff and Johnson thus conclude that, quote, "Categorization is a consequence of how we are embodied. It is not a purely intellectual matter occurring after the fact of experience. Rather the formation and use of categories is the stuff of experience," end quote.

00:13.59 Experience, in other words, is already formed by the implicit categories that give rise to cognitive awareness in the first place. While the map may not be the territory, our world is

unavoidably a mapped world. This mapped world takes on its familiar qualities, though, with the advent of reflexive awareness and language – both associated in Buddhist analyses with the sixth cognitive mode, mental cognitive awareness.

00:14.28 Like the forms of sensory consciousness, mental awareness is also an impersonal process that arises with specific conditions. First, it arises stimulated by a previous moment of sensory cognitive awareness, as a mental awareness of that sensory awareness.

00:14.47 As one 5th century text, Abhidharma-ko_a, puts it, "Visual consciousness is aware of blue, but not that it is blue. Mental consciousness is aware that it is blue." Mental cognitive awareness also arises instigated by its own objects - mental phenomena such as ideas, thoughts and reflections, which are considered forms of speech and are also closely associated with the mental

faculty, mind – the basis for all mental cognitive awareness.

00:15.20 In the formula here, these mental phenomenon are called dharmas. As systematically developed in the later abhidharma tradition, dharmas were the basic factors into which all pertinent aspects of experience could be analyzed. Although often considered elements or constituents of existence, it makes more sense – to me at least – to understand dharmas as any factor affecting experience, insofar as it belongs to a system of analysis.

00:15.49 These are systems of mapping the totality of experience into discrete semantic units that, like spaces on a chess board, are formally distinct from each other and like phonemes of a language, represent totality of differences that make a difference.

00:16.08 At least, for that system. This suggests that self-awareness – a reflexive awareness of awareness – is deeply dependent upon categorization, especially linguistic categorization. But this entails its own set of problems. For like language itself, there is no natural end to reflexivity.

00:16.28 Sensual experience and mental reflection upon it – as no doubt we all know – readily turns into a series of recursive, discursive thoughts, which early Buddhists called papañca. And what is it that constantly provokes such proliferating, discursivity? According to the Buddhists – our self. A view of our own existence, satk_yadçùñi.

00:16.52 The idea that we have or are an underlying self. One early text states that the thought, "I am," is a proliferation. "I am this," is a proliferation. "I shall be," is a proliferation. Another text calls the thought, "I am," the very root of proliferation. In fact, the underlying

disposition toward the sense, "I am," asm_ti-anusaya, is so deeply ingrained that it is thought to continue, albeit subtly, until the last stages of liberation.

00:17.20 So far, we have analyzed our sense of subjectivity without postulating a substantive self as subject. But this raises other questions – how can such an evanescent consciousness, without substance or self, have any causal efficacy at all if it indeed is like an illusion, a dream or a soap bubble?

00:17.42 Is it simply epiphenomenal? A mere shadow on the wall, made by the light of more basic forces? Although in Buddhist analyses, cognitive awareness is only the result of certain conditions and not itself a cause. It is apala (ph), not ahatu (ph), in Sanskrit. It elicits reactions that do have causal efficacy. And therefore, insofar as the implicit categorizations and classifications that give

rise to consciousness serve to elicit these reactions, they may come to have causal influences in their own right.

00:18.18 This is aptly illustrated in an early Buddhist text, "The Questions of King Milinda." "The elder monk traced a circle on the ground and spoke thus to King Milinda: 'Is there an end to the circle, Sire?' 'There is not, Reverend Sir.' 'Even so, Sire, are those cycles that are spoken of by the Lord Buddha. Visual consciousness arises because of "I" in visual form. The meeting of the three is sensory impingement.

00:18.43 Conditioned by sensory impingement is feeling. Conditioned by feeling is craving. Conditioned by craving is karmic action. And vision is born again from karmic action. Is there thus an end to this series? There is not, Reverend Sir.'"

00:18.59 This portrays a recurrent cycle in which ordinary cognitive processes elicit physiological

responses, such as feeling or sensation, which tend to evoke afflictive emotional responses, such as craving or aversion that, in turn, typically lead to karmic actions, such as grasping for pleasure or repelling pain, that themselves lead to further results, such as more cognitive processes, feeling and so on.

00:19.26 This is a classic model of positive feedback, whereby recurrent patterns of actions, results and reactions become physiologically and psychologically reinforced and hence, self-reinforcing. In other words, they become habits. For Buddhists, though, these cyclic patterns of cause and effect – and samsara literally means the going around – not only describe how habits develop in this lifetime, but also how living beings develop over multiple lifetimes.

00:19.56 This body, the Buddha says, is the result of former actions that have been constructed and intended and are now to be experienced. Once

constructed, our bodies define the forms in which awareness and feeling arise, which evoke the afflictive responses of lust and aggression, et cetera, which lead to actions that reinforce those same bodily structures.

00:20.20 As another sutra states, "Action, craving and ignorance are the causes of living structures –saüsk_r_ – in the future." And if the structures of this fathom-long body, with its perception and thoughts that define- And if it is the structures of this fathom-long body, with its perceptions and thoughts that define the origin and destruction of our experienceable world, then we can readily see why the great 5th century Buddhist philosopher Vasubandhu, says that

00:20.51 "The world in its variety arises from action, karma, and it is due to the power of the afflictive dispositions that the result of these actions accumulate." Our world, in other words, comes about through the recurrent patterns of

action, of karma, instigated by the afflictive dispositions.

00:21.11 And the deepest of these dispositions, the last to be removed before liberation, is the misguided view of our own existence, satk_yadçùñi. In short, the categorical distinctions that inform cognitive awareness, such as conceptions of our own self-existence, have been instrumental in the arising of our human world.

00:21.30 Notice that all this is still couched in terms of impersonal causal relationships. A sense of self is fully acknowledged here, indeed it plays a central role, but only as a function of advanced cognitive capacities, not as a substantive entity itself. Surprisingly, this is also the conclusion of many evolutionary biologists and cognitive scientists.

00:21.53 And I must be exceedingly brief here. In Darwinian theory, evolution occurs through

differential reproductive success, in which organisms who reproduce more prolifically pass on more of their heritable characteristics. Over multiple generations, this gradually reinforces whatever physiological and psychological characteristics lead to more reproductively successful interactions between organisms and their natural and social environments.

00:22.21 As they develop, these characteristics both enable and encourage those same behaviors, leading to further reproductive success, and so on. A pattern that is widely recognized as a circle of positive feedback. Central among these are whatever activities preserve one's personal existence and result in reproductive success and sufficient craving for and defense of the means to achieve these ends.

00:22.47 Here, too, self-view and afflictive dispositions, such as lust and aggression, exert a crucial causal influence in the evolution of a species-

specific world. As Vasubandhu rightly says, "The afflictive disposition should be known as the root of existence."

00:23.06 The means whereby this takes place in Buddhism and biology – through karmically driven rebirth or through natural selection – differ radically, of course. At least I think so. But their basic causal patterns are analysis, as are the causal roles they attribute to embodied categorical distinctions.

00:23.25 And the most important locus of such categorization – one that gives rise to our sense of individual personal existence, for whose promotion we commit all kinds of actions thereby perpetuating the arising of the world – must surely be language. Or, more precisely, linguistic forms of symbolic representation used in human interaction.

00:23.47 Language is instrumental to our distinctively human world in two ways. From even before we are born, language learning affects the neurological structures of our developing brains, creating the physiological and psychological conditions, the saüsk_r_, for the arising of distinctively human forms of consciousness.

00:24.06 As a result, neurophysiologist Terence Deacon suggests, argues, that, quote, "We cannot help but see the world in symbolic, linguistic, categorical terms. Dividing it up according to opposed features and organizing our lives according to themes and narratives," end quote.

00:24.25 Language has also affected the evolution of our cognitive processes. By most accounts, our uniquely human brain structures co-evolved with language, which reciprocally reinforced each other, radically and irrevocably transforming the structures and processes of human cognition. Deacon argues, quote, that

00:24.46 "Brain/language co-evolution has significantly restructured cognition from the top down, such that its secondary effects have also ramified to influence the whole of human cognition, even when our linguistic abilities are uninvolved."

00:25.03 Language is not just added on to human consciousness. It is constitutive of it. And since language is an inter-subjective phenomenon, so, too, is our linguistically constituted cognitive domain. "We live our lives in a shared virtual world," Deacon declares, "because the evolution of linguistic communication created a mode of extra-biological inheritance that is intrinsically social."

00:25.30 "One that evolved," he continued, "neither inside, nor outside brains, but at the interface where cultural evolutionary processes affect biological evolutionary processes," end quote. This sheds a different light on that most

important byproduct of our shared virtual world – our special, but specious sense of self. For it is only through shared linguistic categories that we are able to fully objectify ourselves in contrast to others and in relation to pasts and futures.

00:26.01 Contextual and temporal relationships that belie the very autonomy they appear to affirm. "It is the final irony," Deacon concludes, "that it is the virtual, not actual, reference that linguistic symbols provide, which gives rise to this experience of self."

00:26.23 Most of this, though, occurs quite without our knowing it. This shared virtual world is so deeply engrained, so utterly habituated that it occurs almost automatically and nearly unconsciously in every moment of mind. All of these ideas came to a head in a concept of unconscious mind, developed within the Yogacharya

school of Indian Buddhism in the 4th to 5th centuries of the Common Era.

00:26.46 Couched in the same causal syntax of dependent arising, as earlier Buddhist analyses of consciousness, the subliminal form of cognitive awareness – _laya-vijñ_na –is said to arise continuously in a stream of instants and in dependence upon physiological and psychological structures that have been built up over time to the constructive, cyclic processes of samsara.

00:27.13 Specifically, it arises based upon the two traditional conditions of cognitive awareness – the faculties and their correlative objects. And in addition, as one text puts it, "The predispositions towards proliferation and terms of conventional usages of images, names and conceptualizations." These subtle conditioning factors, for their part, facilitate a new kind of correlative object -

00:27.40 the shared external world whose aspects are indistinct. We live in a world, a cognitive domain, whose predominant structuring influences, the texts say, are subtle and hard to perceive, even for the wise. Now, this accumulating realm of unconscious mental processes, which like our brains is said to metaphorically store the seeds or potentiality of memories and dispositions from the beginning-less past, might seem the epitome of the personal, the individual and the subjective.

00:28.12 Certainly, this is how we typically take it. For, occurring along with this subliminal awareness is an equally subliminal sense of self called afflictive mentation, kliùña-manas. This is a process whose mode is “I”-making in the conceit, “I am.” And which always arises and functions simultaneously with subliminal _laya consciousness, taking it as its object, conceiving “I am this and this is I.”

00:28.41 This subliminal sense of self is just that innate self-centeredness whereby we constantly, but unconsciously think, feel and act in terms of the conceit, "I am." In terms of "self" and "other." In Buddhist analysis, of course, this is tragically mistaken. There is no such thing as a permanent, unchanging self and this subliminal _laya consciousness is neither unchanging, unitary, nor even wholly individual.

00:29.07 Rather, like cognitive awareness in early Buddhism, it only arises at the interface, the concomitance of faculties and objects. And so, it, too, is transactional and transient. Moreover, one of its major conditioning influences – the predispositions towards expressions of images, names and concepts – is hardly personal.

00:29.29 For language is nothing if not public domain. It only works when it evokes effortlessly and mostly unconsciously, common states of mind. How else

could it possibly work? Accordingly, Yogacharya thinkers distinguished between- Oops, I've lost one.

00:29.59 Sorry. That was there. Excuse me, I'm not real good at this.

00:30.23 Damn it. Oh, ok, I want this one right now.

00:30.58 Sorry about that. I hope you caught two winks. Accordingly, Yogacharya thinkers distinguished between those individual aspects of subliminal awareness associated with one's bodily faculties and those collective aspects that belong to a shared cognitive domain – bh_jana-loka.

00:31.20 This distinction allows us, as Deacon and others have concluded to, quote, "live in a world that is both entirely physical and virtual at the same time." This virtual world is a shared cognitive domain, precisely because we have similar faculties that have been influenced by similar

linguistic categories and classifications, both phylogenetically and ontogenetically, as well as, of course, socially and culturally.

00:31.47 Human consciousness is therefore distinctively human consciousness. Is therefore never simply individual because it is always at bottom, subtly, even subliminally, informed by the shared categories of language. We not only live in a world whose structuring processes we cannot fully discern, but one that is collectively construed through the common influences of the predispositions towards conceptual proliferation of conventional expressions of images, names and concepts.

00:32.18 As Deacon observes, “The origins of a person’s symbolic experience of consciousness is not within the head. This part of personal identity is inter-subjective in the most thoroughgoing sense of the term.” We might rephrase the

Buddhist question from the beginning – conditioned by what does the world arise?

00:32.39 It is our common, yet unconscious habits of body, speech and mind to which we are habituated that give rise in the long term and in the aggregate to the habitat we inhabit. To my mind, this is a powerful set of ideas. Like modern physics, it helps to see how the apparent solidity of selves and worlds can come about by the mere occurrence of evanescent events, sparked by insubstantial distinctions. And the actions that follow there from.

00:33.09 This is counterintuitive for most of us, I suspect, but it forces us to reconsider what it means to say that our world is like an illusion, a dream or a bolt of lightening. What is more intuitive, no doubt, is the analysis in terms of impersonal causal forces. What distinguishes Buddhist analyses though, and makes them seem scientific and thus so appealing and persuasive,

is not just that they use a similar causal discourse.

00:33.36 The idea that karma is a natural law is a perfect example of this. But that they use it to explain experience, not explain it away. Instead of reducing experience to the side-effects of genes, neurons and social forces, Buddhist analysis focuses on the causal relations of experiential categories, themselves – awareness, feeling, sensation, action, et cetera.

00:34.00 It thus appears to bridge the depersonalizing discourses of scientific analysis and the experiential discourses of religion and psychology and of everyday life. And this is one of the main reasons, I think, why Buddhist thinkers can now collaborate with scientists and philosophers in understanding mind and why I hope we can continue to learn from each other.

00:34.22 And since my paper has been so conceptually proliferating, I will now sit down. I am sitting. And to learn from my fellow panelists. Thank you.

APPLAUSE

MARK SIDERITS

00:34.40 Thank you very much. Ok. We are going to have three of our panelists responding and they're going to be in alphabetical order. Our first respondent is Joseph LeDoux who is a neuroscientist. He is Professor at the Center for Neural Science here at NYU.

JOSEPH LEDOUX

00:35.15 Thank you Chris and the other organizers for inviting me. I think I'm the token neuroscientist at the meeting, so I have a big job, but I'm not gonna try to carry that out. So I want to tell you about something that I know a little bit about, which is emotions in the brain and try to relate that to Bill's talk.

00:35.34 One of the- and I apologize that we can't see this that well, but- Can you see that in the back? One of the concepts he brought out was this notion of, if I can get it right, _laya-vijñ_na, a form of subliminal, cognitive awareness that serves in the unconscious structuring of the world.

00:35.52 Now if we change cognitive awareness to the word cognitive processing or representation, we can find a lot of overlap with modern ideas in cognitive science and brain science that relate to this idea. Because in cognitive science today, we think of much of the mind as operating unconsciously.

00:36.10 Not necessarily in the sense that Freud talked about where things are repressed and unhappy thoughts are put out of the mind, but instead most of what the brain and mind is doing is operating below the level of awareness. And I

think we heard a bit about that in Owen's talk this morning, as well.

00:36.27 So this emphasis, I think this emphasis runs throughout Buddhist literature – to the extent that I know about that, which is very little – but, I've read a little and found a lot of references, for example, in Zen literature to unconscious aspects of mental life. And I think this, you know, this again cuts through much of modern understanding of the way the brain works and it definitely interplays quite a bit with the conscious and unconscious aspects of emotion in the brain that I'd like to tell you a little bit about.

00:37.00 So first, let's just ask what an emotion is and the standard answer – that as William James pointed out, the man on street would normally say – an emotion is something that we subjectively experience. A conscious feeling. And this is certainly part of what we mean by an emotion and

it has to be a central part of any theory of emotion that we might want to come up with.

00:37.26 But the fact is, in reality, the conscious feelings are only a small part of what goes on in any particular kind of emotional situation. Freud called this the tip of the iceberg and that, I think, is a very nice metaphor for it. And again, to make the same point over again, consciousness is blind to much of what the brain is doing.

00:37.47 And Owen pointed this out – it's a good thing that this happens because we can't have privy to all of the action potentials and neurotransmitter releases and the muscle twitches that all that's controlling, because we'd never get anything done in our lives. So consciousness is standing far apart from much of the operation of the brain.

00:38.06 And not just in the, we could call that the neural unconscious, but at higher levels, as well. Much of our mental life takes place

unconsciously, as common example is the structuring of the syntax of a sentence as you're speaking it. You don't consciously plan that, it just comes out. Now the ego-centric perspective of consciousness, as Bill pointed out, is largely symbolically constructed and linguistically dependent.

00:38.33 That doesn't mean that everything that we're conscious of is verbal and linguistic, but most of it is symbolic. But once you have language, as soon as something enters your consciousness, you do linguistically interpret it and it becomes linguistic after the fact. We discriminate, categorize, label our experiences, including our experiences of our self and our emotions.

00:38.55 So, in spite of consciousness being a very important part of our emotional life and here we see – I don't know if you can see it at all – but we've got Jack, who's angry and Shelly who's afraid there. And so those are the feelings that

they’re experiencing, but in addition to that and the second part of the two aspects of emotion –

00:39.23 one is experience, the other is the expression of emotional responses. So, as we go into the brain and body, we can see there’s a lot of stuff going on during any kind of emotional reaction. The brain is obviously responding, hormones are being released, the autonomic nervous system is active, muscles are being tensed up. Some of that is being driven from the top down.

00:39.46 So, you first detect the emotional stimulus and your body then responds on the basis of what the brain’s done. But some of that then feeds back and can affect what the brain is experiencing, as well. So the relation- This causes us to ask the relation between feelings and emotional responses.

00:40.05 So by the common sense theory, feelings are thought of as causing the emotional responses.

You see a snake and you run away because you're afraid of it. But William James questioned this idea long ago and flipped it around and instead said that responses cause feelings.

00:40.22 And Tony Demazzio (ph) has a modern version of that theory. Not everyone agrees with that and I'm not a major proponent of that particular view, but I think there's another way to think about it, which is that feelings and responses are both products of brain systems that function unconsciously, that detect stimuli and produce responses.

00:40.42 So, let's look at these in graphic form. So, in the top, the common sense idea, the stimulus produces the feeling and the feeling produces the response. The response primacy idea is that the stimulus produces a response and the response is what causes the feeling. And then the unconscious processing idea is that the stimulus is processed

unconsciously by our brain systems that are designed by evolution to do this.

00:41.08 And both the response and the feeling are products of that and there can be interactions between those, as well. So, you know, the bottom line from the scientific point of view is that emotional responses aren't necessarily dependent upon feelings, you know. Once you have a feeling, that can, in a kind of top-down or downward causation way, obviously affect what we're gonna do.

00:41.31 That's one of the things that, you know, that science hasn't come to complete terms with, in terms of understanding how thoughts can cause behavior or how feelings could cause behavior. But I want to sort of sidestep that for a while and just emphasize the unconscious aspects of all of this.

00:41.48 So there's just mountains and mountains of data from psychology and brain science that support this idea that emotions can be elicited unconsciously. So, if you present stimuli subliminally, you can have autonomic and other reactions to those stimuli, you can even learn about those stimuli without ever knowing that you're learning about them.

00:42.07 You can have responses without ever knowing that you're experiencing the stimulus or experiencing the response. And brain research has shown us a lot about exactly what sort of mechanisms make this happen. So, in the last few minutes of what I want to do, I want to cover several things. One is what goes on in the brain to cause emotional response. Then I want to look at the question of can these emotional responses tell us something about feeling.

00:42.33 So, if you look at someone's emotional responses, how good is that at telling you what's going on

in their minds? How might feelings actually come about in the brain? And finally, what's the relation of all this to meditative states. So, the emotion I'm gonna focus on is fear, because that's the one that we understand the best.

00:42.57 So, a threatening stimulus goes into the brain, it's processed through sensory systems and ultimately reaches this part of the brain called the amygdala, which then controls the fear responses, including behavioral and autonomic and endocrine responses and so forth. Now, there are two ways that this can happen. One is directly through the sub-cortical sensory channels.

00:43.18 So the stimulus is detected by receptors in the eyes or ears. It goes up towards the, into the brain. Enters the thalamus and from the thalamus can directly activate the amygdala. It can also get to the amygdala through the cortex. The thalamic pathway is called the low road. It's a quick and dirty processing system. It activates

the amygdala quickly, but you don't know much about what the stimulus is. So if a bomb goes off in this room, we'll all have an immediate emotional reaction and then you realize what's going on.

00:43.48 It's through the low road probably that these startling and you know, the blood pressure rising and your muscle tension and all of that's gonna be elicited. And through the cortex, you'd then analyze the nature of the sound and begin to think about it in more complex ways. So, in this example, the hiker's walking through the woods. He's about to step on a rattlesnake, but through the low road, he freezes and protects himself.

00:44.12 The basic evolutionary point of view is that you're better off treating sticks as snakes than snakes as sticks, so you sort of over-generalize and protect yourself. Now, in a way the amygdala's a misnomer because it has about a dozen or so different parts and not all of them

are involved in fear. We know a lot about the micro-detail and I'm just gonna tell you about one level of detail, which is the inputs come into the lateral nucleus, the outputs go to the central nucleus from the lateral and then the central controls the responses.

00:44.42 Now within each of these structures, there are also multiple partitions, each of which plays different roles. We're not gonna go into the details. We know a lot about the chemistry and molecular biology in the genetic organization of all of this, but that's beside the point for today's talk.

00:44.59 So, can we use this information if we, you know, hook somebody up to a machine and we see that they're having all these responses and we know they're in a fear response, can we use this to say that they're feeling fear? So, what we want to know is how good is behavior in allowing us to

judge the emotions of others? This goes back to Susan's talk this morning – theory of mind.

00:45.24 And one of the things we use to develop a theory of mind about what somebody else is doing or, more importantly, about what they're about to do is on the basis of what they're doing now. So how good are we at that? And how accurate is behavior? We do this all the time in our behavior, so-

00:45.45 In this case, we can probably say that these two people are feeling something very similar. We can't be a hundred percent confident, but chances are if people are expressing this kind of emotional reaction, they're probably both experiencing something similar. Here, we might say that it's, you know, probably, you know, maybe, say probably, but who knows. I mean, there are a lot of differences between other primates and humans, so let's say maybe.

00:46.16 Possibly, but you know, we're getting further away from what we might be comfortable with. Even further. Here we don't know. Down into the lowest level of vertebrate evolution, invertebrates. How far do we want to go? These are bacteria living in a Petri dish. If you squirt acid in that Petri dish, they will all move to the other side of the dish. So, they're having a defense reaction to an external stimulus. What are they feeling?

00:46.45 These are living organisms, if they can react to danger without being conscious of it, why should we have to be conscious to react to danger. And we know we don't have to be. So this doesn't solve any problem, but it does tell you that we have to be very careful when we're judging what someone is feeling on the basis of what's going on externally in terms of their behavior.

00:47.07 And, you know, on and on. So, you know, if behavior isn't that reliable, on what basis- If behavior isn't perfectly reliable, on what basis

can we attribute homologous, subjective experiences to other organisms. Well, the obvious answer is they have to have similar composition and if they have different kinds of composition, that means they either have different kinds of subjective experiences, or they lack those subjective experiences.

00:47.36 This is basically a version of Nagel's "What is It Like to Be a Bat," because it's gonna be different because they have different compositions. So, here's a bunch of animals and they all obviously have different physical composition from the outside. But the composition we care about most is obviously the brain.

00:47.55 So, brains are different, but they're not completely different. Every vertebrate brain has three major regions with subdivisions that are consistent throughout the evolutionary history of the vertebrate animals. The hind brain and the mid brain are the most similar. These are the

parts that are necessary for sustaining life, so it makes sense that those parts would be similar across species.

00:48.18 The forebrain differs the most across the vertebrates and the prominence of the neo-cortex distinguishes mammals from other vertebrates. So, if the parts that happen to mediate consciousness are the same, subjective experiences could be the same in all these animals. So the question then is, where is consciousness in the brain. And of course, this is the big question.

00:48.40 And it all depends on what you mean by consciousness. And we heard different people this morning talk about different aspects of consciousness and I want to keep it as simple as possible by using a relatively straightforward aspect of consciousness, what we might call short-term or working memory, which overlaps with things like attention or what Ned Block calls

access consciousness or what's been referred to as the easy problem.

00:49.08 You know, as neuroscientists, we try to tackle the easy problems rather than the hard ones, so we're not gonna go into the hard problem of consciousness. Let's just see where we can go with the easy one. So, how do we consciously experience some stimulus in this access way, this intentional way. Well, there's the stimulus – it's processed by the sensory systems. Those sensory systems deliver the stimulus to working memory, where we have a short-term temporary representations.

00:49.37 The advantage, the importance of working memory is that it's able to integrate information from a variety of different sources and put it together and take what you might say, transfer, you know, a simple percept into a concept. So, it's able to integrate different aspects of it. Not only, you know, what it is, but memories we have about it –

both semantic and episodic memories can enter into it. So if there's a snake on the path, that'll enter working memory.

00:50.04 You then have a memory, you'll retrieve memories about experiences you've had with snakes, things you know about snakes, personal experiences with them. Alan Baddeley has been recently talking about something called an episodic buffer component of working memory, where you would have these episodic experiences by integrating all of this kind of information.

00:50.26 So, the question is how does working memory work. So, working memory depends on a part of the brain called the lateral prefrontal cortex. And what's important is that this part of the brain is present in primates, but not other mammals. And it differs- It's the part of the brain that differs most between humans and other primates.

00:50.45 So, we're starting to get clues here about what could be important in terms of human conscious experience. Especially since this is the part of the brain that is involved in working memory where we might say the working memory is a kind of platform, or makes external events and internal events available into subjective awareness.

00:51.09 So, this suggests that because of the differences in the way working memory and the prefrontal cortex are organized that there must be differences in the way this kind of experience is gonna take place in other animals. And if you add in the importance of language together with the uniqueness of the prefrontal cortex, we have a lot of ingredients that we would need to make human conscious experience different from that in any other kind of animal.

00:51.37 So that's not to say that other animals have no conscious experiences. Animals might be capable

of all sorts of subjective experiences without prefrontal cortex and language, but whatever those experiences are, they're gonna be different in the absence of those capacities. So this, again, is a kind of neural version of Nagel's idea.

00:51.55 So- I'm getting towards the end here. So, how then might we become afraid or where, you know, consciously afraid? How might we be fearful of some external stimulus? So we have the same basic ingredients, but now we also add in the emotional reactivity that the body is going through. So the stimulus is in working memory, you're retrieving long-term memories about the stimulus.

00:52.18 So, you've got that sort of cognitive representation. At the same time, the amygdala is feeding information into working memory. It's also causing bodily responses and those are coming back and feeding back into working memory. And I think that- You know, those ingredients

will go pretty far in giving us what we need to be, to have conscious access to the fact that we're in an emotional state.

00:52.40 Now, again, this doesn't solve the problem of the qualia, the phenomenal experience, but I think it takes us a long way towards some things that we can study scientifically in terms of emotional experiences. Now, I just want to finally turn to the question of meditation and working memory. So, to the extent that working memory involves temporary representation and executive control-

00:53.04 I haven't talked about executive control, but that's the ability to willfully control your own mental processes. So, through attention you can select things in the environment that you want to focus on, and so forth. And it's basically regulating your own mental states. Meditation seems to be, you know, a very nice example of executive control, where sensory and other kinds of inputs into working memory might be blocked.

00:53.29 So this again, is the kind of working memory hypothesis of cognition and emotion and then meditation might, through executive control, might be a way of shutting out these kinds of external and internal signals from entering into awareness so that you now have a kind of- I forget what the term Owen used this morning- but a kind of pure consciousness that's isolated from the other events.

00:53.57 Now, sometimes in the Buddhist literature meditation and meditative states are described as achieving a kind of child-like or state like a frog, which implies it's, you know, it's going to a lower evolutionary state, but instead this is such an exquisite process that seems to be unique or at least fairly unique to the human brain, that I think it might be better to think of it as a unique achievement and entering into a kind of state or a kind of plane that can only be

achieved by the unique capacities of the human brain. So thank you.

APPLAUSE

MARK SIDERITS

00:54.42 Thank you, thank you. Ok, our next respondent is Evan Thompson, who is a professor of philosophy at the University of Toronto. He works in cog-sci, but also philosophy of mind and phenomenology.

EVAN THOMPSON

00:55.01 Ah yeah, no I think it is. Yeah. Well, I'd like to start off by saying it's a great pleasure to be here. It's a very rich and stimulating event and it's a privilege to be able to take part in it. I also am going to read my remarks because I wrote them as a commentary on Bill's essay so that they could then be posted on the Web site for this meeting. So, you'll have to bear with me as I present it in that way.

00:55.31 Bill’s target essay is rich with many ideas and thought-provoking connections between Buddhist thought and Western science and philosophy. I’d like to follow his lead and pursue further some of these points of connection. Let me begin with the concept of circular causality, which plays a central role in Bill’s essay as a bridge from Western thought to the ancient Buddhist notion of dependent arising.

00:55.59 If you’ve had a chance to look at the essay, you’ll see that Bill uses the writings of Gregory Bateson to introduce circular causality. Bateson’s work belongs to the cybernetic era, going back to the ‘40s and ‘50s and I think we now have a more developed understanding of circular causality, particularly in dynamical systems theory. So I want to say a little bit about that.

00:56.21 So the key here is the notion of emergence through self-organization. Now, right away I want to say that this word self shows up in- No, it's ok because I don't have an image up yet. This word self shows up here in an interesting way. I said emergence through self-organization. This idea actually goes back to Kant.

00:56.46 In his critique of teleological judgment, Kant said that the organism, the living being, is a self-organizing being. And in fact, I think Kant was the first to use this term, self-organization. Kant said that the organism is a self-organizing being because its parts reciprocally produce each other and depend on their relation to the whole.

00:57.08 But he also thought that self-organization couldn't be understood naturalistically. Because he couldn't see how to fit it into a mechanistic, causal framework. To put this point in contemporary terms, Kant thought there was an

explanatory gap between physical nature and living self-organization.

00:57.29 Today, however, we no longer think there is this gap precisely because of advances in biology and complex systems theory. In particular, the theory of autopoiesis, or a molecular self-organization, self-production, which Bill also mentions in his essay, resolves Kant's problem by showing how recursive and reciprocal relations of production between molecules suffice to generate a minimal biological individual or cell.

00:58.00 And this is a schematic illustration of this idea of autopoiesis, where the basic idea is you have a kind of closed loop of molecular self-production with a metabolic reaction network that produces various components that, among other things, make up a semi-permeable membrane that houses that very network, that in turn produces the components that make the membrane and so on.

00:58.27 Now, what's especially notable here is that self-organization turns out not to involve any self in the sense of an inner agent calling the shots. On the contrary, self-organization means precisely spontaneous pattern formation in which the system organizes itself, but without there being any self doing the organizing.

00:58.52 Now, I want to link these ideas to the notion of emergence. I said emergence through self-organization, so that was a little bit about self-organization, now what about emergence? Which has already come up this morning. Well, here's a simple three step way to define the notion of emergence.

00:59.09 A process is emergent when, first of all, it belongs to an ensemble or network of elements. These could be molecules or neurons or ants in an ant colony, human beings in an economy or in a society. It doesn't belong to any single element and it happens spontaneously given both the way

the elements interact locally and the way those interactions are globally constrained and regulated.

00:59.36 So take the cellular autopoiesis case again. It belongs to a heterogeneous ensemble or network of molecular elements. It doesn't belong to any single molecular element. And it happens spontaneously, given an intricate web of globally constrained, local interactions.

00:59.59 So, emergence through self-organization then, has two sides to it. On the one hand, global processes require certain local interactions. On the other hand, global processes regulate and constrain local interactions, such that they happen in a particular way. It's precisely this local/global entanglement that goes by the name of circular causality.

01:00.26 Ok, so time now for some refinements. The term circular causality is potentially misleading.

More than one kind of causation is involved and local and global don't influence each other in the same way. Local interactions involve what philosophers call episodic triggering causes – roughly, Aristotle's efficient cause – whereas global constraints involve standing structuring causes – roughly, Aristotle's formal cause – and global regulation involves monitoring and control – roughly, Aristotle's final cause.

01:01.07 Notice also that local causes precede local effects. But, global pattern emerges from the local interactions and at the same time constrains and regulates the interacting elements. So there are diachronic and synchronic notions mixed into this idea of circular causality.

01:01.29 Now, the notion of downward causation, which also came up this morning. This is often used to describe this global to local influence, but this term, too, is misleading. Complex systems

causality is not a matter of two levels moving in parallel with one acting upwards and the other downwards. Rather, the whole system moves at once as a result of both the local interactions and the way the system's organization shapes those interactions. The way that there's a certain kind of context embedding.

01:02.00 I think John Searle gets this right when he says – this is a quotation – "The right way to think of this is not so much top-down, but as system causation. The system as a system has causal effects on each element, even though the system is made up of the elements." Now, I think we can go even further. In a densely interconnected dynamical system, such as the brain or the immune system, perhaps, the connectivity and the interrelatedness of the components-

01:02.29 ***TAPE END***

MIND AND REALITY - Day 1

Tape 6 of 8 – Panel on Experience

TAPE START

EVAN THOMPSON

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of this is not so much top-down, but as system causation. The system as a system has causal effects on each element, even though the system is made up of the elements." Now, I think we can go even further. In a densely interconnected dynamical system, such as the brain or the immune system, perhaps, the connectivity and the interrelatedness of the components-

***** BEGIN NEW MATERIAL *****

00:03.14 -arguably, and this is now more philosophically contentious, arguably generate global patterns that subsume the components, so they are no longer clearly separable. This kind of irreducible relationality is another reason that downward causation is a misnomer. Because the components don't constitute an independent lower level, subject to higher level downward influence.

00:03.38 On the contrary, in non-aggregative or non-decomposable systems, the distinction between preexisting parts and supervening whole becomes problematic. Instead, part and whole co-emerge and mutually specify each other. We could call this idea dynamic co-emergence.

00:03.59 And I think it's an open question to what extent brain activity needs to be viewed from this kind of non-decomposable perspective. It's not, you know, the sort of standard way of looking at things, but there are a number of theorists and a number of arguments that can be given to motivate that way of looking at things with regard to neurodynamics, in particular.

00:04.20 Now, dynamic co-emergence seems close to the Buddhist idea of dependent origination. Especially to the way this idea is understood in the Prasangika-Madhyamika tradition, where it means the dependence of phenomena on causes and conditions, the mutual dependence between parts

and whole and the dependence of phenomena on conceptual imputation.

00:04.41 Because, after all, local, global, part, whole – these are context dependent and interest relative terms. Alright. So that's a little bit about emergence through self-organization. Now, the theme of our panel is experience, and so I want to now shift to consciousness. What does this have to do with experience and consciousness?

00:05.06 Well, at the moment, there's an explanatory gap between our scientific understanding of the brain and body and consciousness. And already this morning, Ned Block gave a very nice account of this explanatory gap. So, our position with respect to consciousness is rather like Kant's with respect to life.

00:05.26 The outstanding question is what would it take to bridge the gap for consciousness or whether the gap is in some sense unbridgeable. Now, I think

the best approach – maybe best is a little strong – I think a very important approach to take to this question right now is methodological. We need to enrich our resources on both sides of the gap.

00:05.47 The brain-body environment side and the subjective experience side. While using each side to inform the other. And this is precisely the approach that neurophenomenology takes and Owen mentioned neurophenomenology this morning – a term introduced by Francisco Varela.

00:06.05 So, let's start on the brain-body environment side. From the perspective of neurodynamics, each moment or each moment of transitive or object directed experience – consciousness of some object or content – seems to involve the spontaneous emergence of a large scale pattern of dynamic neural activity.

00:06.28 Now this is being mapped in various ways. This activity pattern both arises from local neural activities and globally constrains and regulates those activities. And this can be seen quite concretely in the brain when we look at how ongoing endogenous activity, arising within the brain, shapes the way stimulation is received and incorporated into the existing dynamics.

00:06.53 The dynamics is always ongoing and in a sense, the organism meets the environment on the terms of its own ongoing dynamics. So the sort of stimulus-response, stimulus-processing response is true in a way, but it's also misleading with respect to this endogenous complexity.

00:07.09 If we just stay at this level, however, our view will be too disembodied. We need to remember that the brain is in a body in the world. In more concrete terms, brain activity is embedded in at least three wider contexts. First, life regulation processes of the entire organism – all

of the homeodynamic activity going on, keeping the organism up and running.

00:07.34 Secondly, motivated sensory motor interaction with the world, which is particularly evident in the examples of emotion we were just hearing about. And then thirdly, in our case and presumably many other animals, social and inter-subjective interactions. Now it seems to me entirely possible that the biological processes crucial for various aspects of consciousness may cut across these brain-body world contexts.

00:08.03 And so it may be misleading to say consciousness is simply in the brain. That's a statement that is in a way very intuitively plausible. You know, digestion is in the stomach. It's tempting to say consciousness is in the brain, but when we embed the brain in the body in the environment, then our story has to become more complicated, I think.

00:08.26 Ok, so let's turn to the subjective experience side. Here, a more radical step is required. We need to introduce a distinct phenomenological level of investigation and analysis. Now, by phenomenology, I mean rigorously describing the phenomenal structure of experience as it is lived in the first person.

00:08.49 In Western philosophy, this project has been most extensively pursued in the phenomenological movement originated by Husserl. In Asia, phenomenological investigation and analysis animate Buddhist and Hindu philosophy. Common to these diverse Western and Asian traditions is the recognition that phenomenology is a cognitive skill that requires mental training of attention and meta-awareness using various first person methods.

00:09.16 In Husserlian phenomenology, although these first person methods are certainly in play, they remain largely implicit. They're not really explicitly

theorized. Whereas in Buddhism and Hinduism and also, for that matter, Taoism, they are explicitly and systematically cultivated. Well, how can the first person methods of phenomenological analysis and contemplative mind training play a role in cognitive science?

00:09.41 Well, here are three ways. First, they can generate new data that wouldn't exist without using these methods. So, I'm thinking of various kinds of contemplative states, various traits that may be introduced by these states – so this if from a- speaking now from a scientific point of view, a cognitive science point of view. This is new data.

00:10.05 Secondly, they can enable one to reproduce certain mental states reliably and robustly – or potentially enable one to reproduce certain mental states reliably and robustly – thus making the investigation of experience more tractable. So what I mean by this is the idea that

individuals who can generate particular types of mental states and actually stabilize them-

00:10.25 You know, most of us, you know, our minds are wandering all the time and if you do experiments, you know, you're running trial, trial, trial. Your subject, you know, one moment your subject is, you know, thinking about something. Another time he's, you know, planning what he's gonna make for dinner. Another time he's really paying attention and he presses the button. There's all this variable mental activity which gets averaged over – precisely because it's stuff that you're not interested in – but if you're interested in the fine texture of experience, then you have to pay attention to that moment to moment character of experience. But how?

00:10.54 Well, individuals who can actually stabilize that in a fine-grained temporal way might make the investigation of various aspects of experience more tractable. Thirdly, first person methods can

provide more refined first-person descriptions of subjective experience. And these descriptions can provide more refined phenomenological taxonomies and guide and inform research on the biological substrates of consciousness.

00:11.22 So the idea is to develop some phenomenological sophistication that we can use in the context of, say, cognitive neuroscience research on consciousness. Ok, now I want to mention a specific example of an issue that goes to the heart of our concerns here that came up also earlier this morning.

00:11.41 Earlier I said that each transitive or object-directed experience seems to be associated with the formation of a dynamic pattern of large-scale brain activity. But, now it’s interesting that phenomenological frameworks as diverse as those of Husserl, Advaita Vedanta and a number of Buddhist schools recognize another type of consciousness.

00:12.03 What we could call an intransitive, in the sense of non-object directed reflexive awareness. This is described as an inner awareness of the sheer openness of the mind that doesn't involve any kind of reflection or introspection. Now, of course these diverse phenomenologists conceptualize this in different ways and that's important.

00:12.26 I won't go into that now. It's interesting to note that Husserl in particular shows how our most fundamental consciousness of the passage of time entails this type of open awareness, this kind of reflexive open awareness that isn't introspective. And he describes how it makes our consciousness self-constituting in time.

00:12.45 That's his word. Self-constituting is really another way of saying self-organizing. But again, without any homuncular self doing the organizing because the self or ego is an emergent result of

the way that consciousness constitutes itself in time, for Husserl. Ok, so the point I want to make now is that individuals who can generate and sustain a particular kind of contemplative mental state –

00:13.10 a state in which one's mind reposes, awake and alert in the so-called luminosity of this open reflexive awareness, without attending preferentially to any object or content. Not ignoring, not trying to shut down the object-directed consciousness, but not biasing it in any particular way. Such individuals could provide important information about core aspects of consciousness not readily apparent or accessible to ordinary introspection or reflection and hence, not currently visible to cognitive science.

00:13.45 Alright, in conclusion then, I want to make three points. First, is that the incorporation of phenomenology into the scientific study of the

mind represents a potentially profound transformation of science. It signals the limits of objectivism – that is the standpoint that tries to ignore or deny the constitutive role of subjectivity and experience in scientific knowledge.

00:14.15 Because experience is now actually being mobilized within the scientific context. It also allows us to imagine a future mind science incorporating first-person methods of phenomenological analysis and contemplative mental training alongside more familiar experimental and mathematical techniques.

00:14.33 That's the first point. Second point – the incorporation of scientific knowledge into traditions of contemplative philosophy and phenomenology represents a potentially profound transformation for these traditions. Among other things, it challenges the metaphysical thesis

that the fundamental nature of consciousness is non-physical, or more pointedly, non-biological.

00:14.56 I'd like to hear more from Buddhists and Hindus who are engaged in this dialogue about how much of their core spiritual and ethical commitments are tied to this non-naturalistic view of consciousness. And this is connecting back to things that Owen raised this morning.

00:15.11 Now, my third point is a way of putting my own philosophical cards on the table. And here I can really just assert this, not argue it. I think consciousness will always be irreducible in a certain sense. That's not because I think consciousness has non-natural properties, but because I think its condition of possibility for the disclosure of any phenomenon, whatsoever.

00:15.35 Consciousness, in other words, isn't merely an empirical phenomenon in the world – it's certainly that, but it's not merely that. It's

that by which the world is phenomenally manifest at all. Whether in everyday life or in science.

00:15.49 Now, to see consciousness this way is to take up a transcendental philosophical perspective. And here I'm using transcendental in the Kantian and Husserlian sense. Consciousness is irreducible because it has an illimitable transcendental status. It's always already presupposed by any stance we adopt towards the world, including science.

00:16.09 It's- German is wonderful. There's a word in German for this – die unhintergehbarkeit – consciousness is the "ungobehindable." Sounds better in German. Now, neurophenomenology acknowledges this transcendental perspective because it follows from its resolute commitment to take experience seriously. And I'll end with that point. Thanks.

APPLAUSE

MARK SIDERITS

00:16.42 Ok. Making his way to the podium is our third respondent, Robert Van Gulick who is Professor and Chair of Philosophy at Syracuse.

ROBERT VAN GULICK

00:16.58 Is it on now? Yes, good. Ok, thanks. Yeah, well, it's the bane of the existence of having a name that starts with V in an alphabetically ordered world that I go last, which is batting clean up. In part because many of the things I'm going to say to you, you've just heard from Evan. And I'm gonna say them again. So maybe that either means they're right or at least you'll have a second chance to hear them. There'll be some differences, though, as well.

00:17.24 But certainly some things about autopoiesis in emergence, which we're both picking up from Bill Waldron's paper are gonna come up in mine. I don't know much about Buddhism. I don't know much

about Asian thought. I approach this panel as- from my perspective as a kind of mainline, analytical philosopher working in a naturalistic, scientific view of mind, trying to see what it is from that perspective that resonates or meets me from what he had to say.

00:17.50 And I'm gonna talk about three aspects. The notion of dependent arising, the notion of circular causation and then thirdly, how those might apply to the self. And some of the ideas, again that come up in Evan's. So, first, let's talk about dependent arising. This fourfold slogan that Bill gave us is - when this is, that comes to be; with the arising of this, that arises; when this is not, that cannot be; with the cessation of this, that ceases to be.

00:18.28 So we get this kind of dependence. Now, how does that look from the perspective of mainline, naturalistic, scientific philosophy of mind? Well, the perspective I think that's probably the

plurality position is what's come to be called non-reductive physicalism. It's been the view since about the mid-1970s, would you say Ned?

00:18.49 Within our history – the history of those of us who are in our 50s, it was a kind of zeitgeist change that took place about 30 years ago. So, non-reductive physicalism is probably not the majority- if not the- certainly not the consensus view, but it's probably the plurality view.

00:19.03 What it does is combine two things. One is an ontological physicalism – a notion that in some sense, everything that's real is - in some sense yet to be explained - physical or depends on the physical. We're talking about dependent arising. If it's real, somehow it depends on the physical. Yet, but there's a non-reductive element here in that there's a rejection of the notion that physics or the physical sciences provide us anywhere near the full panoply of ways we need of knowing and understanding the world.

00:19.37 The concepts, the frameworks, the theories, the modeling tools that are provided us by those particular sciences are very valuable and useful in their way, but they're just a small fragment of what we need for understanding the physically realized world or the physically world in all its multiplicity of complexity. So, standard example used by everybody is economics.

00:20.00 Every economic transaction is in some sense, physical. I can't pay $20 without handing you some bills or giving you a credit card, writing a check, putting a few keystrokes that move money from my bank account to yours through cyberspace and yet, nobody would think that physicists are the people to consult about how to model economics or to think about the economic reality of the world.

00:20.22 That what's gonna happen between interest rates, exchange rates, trade balances, et cetera. That's

not their line of work. So, it's ontologically physical, but it's not conceptually or representationally or theoretically within the province of the physicists or the physical scientists. And this isn't just true of economics, it's true of psychology, it's true of biology, it's true of literature, it's true of, perhaps, religion, it's true of morality, it's true of poetry. It's all these multiple ways we need of understanding and embracing and encountering the world, although the non-productive physicalist still wants it all to be at the bottom level, somehow physical.

00:20.58 And then the challenge comes along. Somebody like Jaegwon Kim, professor of philosophy at Brown will give his presidential address to the APA, calling it the myth of non-reductive physicalism. And say, hey, if you really want to be a physicalist, you gotta be a reductionist. This notion that you can be a non-reductionist and still be a physicalist isn't going to work.

00:21.18 So, people have spent a lot of time trying to figure out what's the right way to gloss the dependence relation. How do you explain how everything somehow depends on the physical, while still keeping your non-reductive sort of scruples? And people have tried a variety of notions. One is supervenience. That somehow everything that's real supervenes on the physical. So, standard example, painting.

00:21.37 If I go over to the Met like I did yesterday and look at some wonderful painting, like Rembrandt's self-portrait on the wall, it's a collection of pigment put on a canvas. And any other canvas that had exactly the same distribution of pigments would have whatever aesthetic qualities it did. If this one is beautiful and thought-provoking, that one would be beautiful and thought-provoking.

00:21.57 But somehow, the aesthetic properties of the painting don't reduce in some obvious sense to the physical one. Yet they supervene on it. If you keep everything physical the same, you're gonna keep all the aesthetic things the same. Well, there's problems with supervenience. So, I won't go into them, but people have sort of realized that probably isn't good enough dependence relation.

00:22.14 So, they've tried emergence. And emergence is certainly a notion that people have been very attracted to. And in fact, there was a special version of the Journal of Consciousness Studies that Michael and I both had papers in. Three years ago or so? I mean, trying to look at emergence as a way of trying to get how consciousness might relate to the physical. And there's a lot of easy, sort of unproblematic notions of emergence.

00:22.35 Complexes have lots of properties that their parts don't have. The parts of the whole are often radically different than the properties of the parts. There may be no easy way to predict in advance what the properties of the wholes are gonna be. But, they're still pretty well behaved. What people get worried about is when you start talking about properties of wholes or complexes that somehow are de novo. They're new. They're not somehow derivable, even in principle, or explicable from the properties of the parts.

00:23.02 They just come into the world, as it were, by new fundamental laws or by sort of fiat and in particular, they're concerned with whether or not those new properties of wholes could somehow muck around and change the underlying laws of causality that govern the micro-structure. And that's what some people want. That's what Bill Hasker wants. I mean, he wants to be able to take because he thinks we can need for free will. And maybe Teed wants that, too.

00:23.27 But most naturalists draw back in horror at that notion. They don't want to go quite that far. So, there's a way a kind of dilemma that you can see posing here – it's a dilemma about causation. I mean, Bill talks in his paper a lot about patterns. And you can say, oh, all these wonderful patterns and if I'm a non-reductive physicalist I want to find ways to grab hold of the patterns and see all those patterns in the world because they're often very predictive and they're often the ways I have to use to get my cognitive apparatus to latch onto the world to give me some kind of hold or handle on how to manipulate or grapple with it or encounter it.

00:24.00 But, is the pattern something real over and above its realizations. If realization – another notion that people have been very much attracted to as a way of understanding everything real is physically realized. So you've got a pattern. Insofar as that pattern has any existence in

space and time, it's because it's realized. Where is it realized? It's realized in physical stuff.

00:24.24 Now the question is, is the pattern ever something over and above its realizations? When you've got a concrete realization, like Evan's complex systems, you've got all those parts going around in his wonderful circle there and somebody could say, well, if I understood all the little parts, including how they're all arranged in this very complex system, I got a complete explanation. I have micro-determination.

00:24.45 The parts are running the show. The pattern is just an epiphenomenon. The pattern is just a useful way of talking about it, but the pattern isn't something new that's been added to the furniture or the world and it doesn't, in particular, do any new causal work. So that sort of takes the wind out of the sail of the kind of realist. It looks like it's going back down

toward a more reductionistic picture, at least on the ontological level.

00:25.07 Then there's some who want to come along, say, "No, no, there is downward causation. Actually, when you get these new patterns, they can go in and they can violate the laws of the micro-structure. They can actually override the laws that govern the physical world." And then the naturalists, you know, they get really scared. And me, I get scared. I don't want to go there. There lie creatures of darkness.

00:25.27 Not that it's illogical or inconsistent, but it's not what fits our kind of scientific worldview. So the problem is that dilemma. How can the patterns really be doing something without sort of violating the underlying physical causality? Well, here's a suggestion and part of it's already been suggested in Owen.

00:25.48 In Evan, excuse me. You don't have to violate the causal laws. What you do is select among them. The parts have many causal potentials, but at any given moment only some of them are being activated. And what the global structuring does is determine which of the causal powers actually come into play. So think about what happens in a molecule.

00:26.08 You get these lovely things in intercellular communication. You get a receptor on a membrane then it sticks down into the cytoplasm and it's got all these phosphor-related things that attach onto it and there're big scaffolding complexes and there are large, turned-around molecules, proteins. And what they do is allow certain kinds of entematic (ph) reactions to take place. They facilitate some and inhibit others.

00:26.28 So, a lot of the possible reactions are never taking place. Only a small subset is being selected for. So, part of what the pattern is

doing is not overriding the causality, but selecting and choosing from within it. So, ok, so then the non-reductivist comes, the hard-nosed person says, "Yeah, yeah, but that's still just a particular scaffolding, a particular molecule. It's all micro. You could tell the whole story." And that's true.

00:26.51 Oh boy, we're having a hard time. So you come back and here's the second part of the answer. These patterns are not random. These patterns are extremely robust. They're self-sustaining, they're self-creating. And in fact, I venture the following: If you were to go into what- take the philosopher's favorite device, possible world machine, and start looking at lots of nearby possible worlds where the initial physical conditions were different and you can even change the physical laws a lot -

00:27.18 some of these patterns, especially the patterns that are involved with self-organizing systems

and mindedness, would keep popping up. So they're not really dependent on the particular nature of our physical world, either in terms of its boundary conditions or even its laws. But they're ones that would show up in a wide range of things. How wide is a big issue. Because this comes into the cosmic fine-tuning argument.

00:27.36 If you tune the universe the wrong way, you don't get this. Ok. So that's so much about non-reductive physicalism. How does that connect up with circular causation? An idea that Bill talked a lot in his paper, he sort of alluded to – he didn't use the term so much, but Evan talked about it in his, as well.

00:27.54 Well, I think the right way to think- He's got two different notions here and I think it's worth sorting them. One is that you take a complex system like a brain and it changes over time. Its state changes, so it receives a stimulus or an input and then it modifies itself and then it

gets a stimulus at a later time and it modifies itself again.

00:28.11 And how- what state it takes at any given moment, is not just a function of how it's being stimulated, but about its history and how the network- Say if we think of the brain as lots of neural networks, how those neural networks are being reorganized and synaptic connections being changed all the time. And that certainly seems true.

00:28.27 But it's not terribly exciting in a certain sense because even a rock does that. I mean, the current state of a rock is a function of what you're doing to it, plus whatever changes have been left there by its history. Now, maybe the Buddhists say, yes, exactly, just like a rock!

00:28.45 But again, I'm viewing this from the perspective of a naturalist and I don't want minds to be like rocks. Those are different things as far as I'm

concerned. Very different things. And anything that suggests they're close together makes me worried. So, I want to think about how another way which this might be and I think it comes up with this notion of reciprocal causation.

00:29.04 We've got two things that are in a dynamic interaction and this one influences this one and this one back and they go. And it's really not a circle, it's a spiral – they're moving up. So think about what goes on in evolution. You get predator-prey relations or flower-pollinator relations, right? I mean, think about flowers – the most wonderful things. We have all these wonderful floral shops here on Broadway with all the people trying to put these hyacinths and narcissus and things in the window.

00:29.28 Well, of course, they didn't exist 60 million years ago until pollinators came along. Only when pollinators came along did you need flowers and you know all these scents and all these colors

and everything. So, pollinators and flowers evolved together. I mean, it's much nicer than predator and prey. That seems so hostile.

00:29.44 But, it's a good example of where you got two things that are in a dynamic interaction. And where you are in one state involves very much the fact that each has brought the other into existence. So it's this kind of self-producing interaction and I think this takes us even further because there was a hint, I think, in Evan as well that some sense maybe when you get these non-aggregative systems, the parts don't really have a reality independent of the whole.

00:30.13 Now here's an example. How many of you are long-married couples? Or part of a long-married couple? Not too many of you, I don't know what's happened to the marriage rate here in New York. Ok. I'm a part of a long-married couple, so part of what happens and I think it's a good example- When we're talking about understanding - and I

like to talk in terms of understanding - there's a nice pun in the word understanding.

00:30.36 Because we can have an understanding between us, but if you also think about the word understanding, you'd like to do etymologies in the Heideggerian sense, understanding is the same root as substance. They're the same words. What stands underneath, what holds something up. And when you've got an understanding in a long-married couple, in a certain sense you are a certain person.

00:30.55 You're a certain person with your spouse, you're a certain person with your kids, you're a certain person with your parents, you're a certain person with your colleagues – you have all these roles you play and actually it's not just that your behavior- You almost become somebody different. And in a way, in a long married couple, like Susan and Ned here, they understand each other. Not only in that they can predict each other, but

in a certain sense, she is who she is when she's with him and he's with him when she's- And they allow each other to be, they support each other as being particular people in that particular context.

00:31.23 So, I think that's a good example of the kind of reciprocal production of two different things that have their identity only in the dynamic relationship between them. Ok. Last, third point then is this question about selves. How can we take this notion of reciprocal circular causation and apply it to the problem of the self?

00:31.45 Well, I think the notion of self-understanding systems is the way to go. Now, by self-understanding system, I have in mind two different things. They're related, but they're different. One is, as Evan was talking about, when you have a system that is self-organizing, self-regulating and autopoietic - this word that's come back into much use through Varela,

but I first met it in the 19- early ‘70s, late ‘60s when it was introduced by Conrad Lorenz, who was borrowing it from the embryologists.

00:32.20 A system that makes itself – poeisis is the making, the creative making of something, the same root as the word for poetry. An autopoietic system brings itself into existence and moreover then it regulates itself. There is no external regulator. It’s moving itself through a very dynamic cascade of changes, very much like your conscious mind. When you’re thinking your way through a philosophical paper. When you’re writing a poem. When you’re planning dinner.

00:32.47 When you’re reliving the events of the day at the office. You’re under the control of that forebrain, perhaps, that Professor LeDoux talked about. But you’re moving yourself. And each conscious state, which is this globally integrated unity. I mean, the things that have the memories of what happened in the office or

the sounds of particular words while you're writing a poem are located in the same brain regions they are when you initially hear them.

00:33.09 And now they're being reactivated and combined into (unintell) complexes. And the forebrain is doing some control work, but it's not like the forebrain is running it completely. What's happening is each global state at a given moment, which consists of the substrate of your experience at that moment, is what's producing – in coordination, perhaps with working memory – the next global state, which corresponds to your next experiential state and the next experiential state.

00:33.34 So, each experiential state, which itself is a very complex, organized, unified structure, is the author or the creator of the next state. Well, where is the self in all of this? Is it the forebrain? Is it working memory? Well, I don't think it's best to think about it in terms of

some special module of the brain. Rather, the self is an emergent feature of this whole complex, of which the working memory is part and so (unintell) always tied together.

00:34.02 Now, I think it could either be, and perhaps it's both, a real causal locus of control. So it really is real. It's not a no-self view, but it's also the perspective of the subject, who is having all these awarenesses. The agent who is engaging in all these actions. The carer who cares about all these things. So the self is the locus of perception, the locus of action, the locus of concern that is, as it were, the virtual position point from which all this experience spins.

00:34.33 I mean, as Dan Dennett likes to talk about the self as the center of narrative gravity. My own inclination is more realistic than his, but I think in that sense, to be more realist about the self because it's also a causal center, but it

also has this kind of role. And the two roles that it is the center of narrative gravity and it's also the locus of control, I think, fit together. And that's where we have to look to sort of pull them together in one way.

00:34.56 Ok. Let me end with something different. You've listened to a lot of prose for the last hour and thirty one minutes. And I'm one of the people who was talked- Where's Paul? When we were talking at dinner last night- I think you were talking about me as the person who writes poetry on the side, so I thought I'd end with a poem for you. Because you've listened to a lot of prose, as I say. And it's relevant because it's about emergence.

00:35.25 And maybe it's about autopoiesis. It was written as one of a series of poems trying to think about memory from somewhat different perspectives than our normal notion of memory. It's called "The Moth's Cocoon." And I think I can do it. I'm a

little nervous. I'm not used to giving poems in front of this many people.

00:35.44 After many weeks, the moths emerged from their cocoons and dried themselves in the sun, awaiting night to fly off in search of sweet nectar and fair mates. But on that afternoon as they unfolded their new forms, did they remember many-legged life or had old images been shed like outgrown skins.

00:36.09 Did membranes stretch so thin in making weightless wings still keep some feel of the fat, round earth-bound body they had been or was all trace of shape washed out in the glare of flying through midair – free in space to move as only moved before in dreams.

00:36.27 Perhaps it is the caterpillar, not the moth that remembers what it was and what its other nature is, already as it climbs and undulates among the leaves. Maybe in some confused and cloudy way,

the worm recalls what it is yet to be and dreams the flight that only seems to set it free. Thank you very much.

APPLAUSE

MARK SIDERITS

00:37.01 Thank you. Do you want to- You don't want to. Ok. We've got about 25 minutes left for general questions from the audience. Since our target essayist is proposing to continue to stand as a target for everyone else.

00:37.27 So, how shall we do this?

ROBERT VAN GULICK

00:37.32 There are lot of pink cards coming up.

MARK SIDERITS

Let's collect some cards. Chris? Stephen wants one.

STEPHEN PHILLIPS

00:37.57 This is a question for Van Gulick or any of you. I'm confused.

MARK SIDERITS

00:38.03 I think you have to hold it closer to your mouth.

STEPHEN PHILLIPS

00:38.05 I'm confused. I understand physicalism as centrally a causal thesis. And if you take this downward, I mean the upward causality away from it, I don't know what's left. And so, the phenomena that we focus on in consciousness discipline such as the ability of consciousness to alter its various (unintell) to control anger, to quiet the mind, to lower blood pressure, et cetera, et cetera –

00:38.44 these all seem- These locate causality in consciousness and so, this seems to me- I mean, it's just all this talk of oh, for example, emergent downward causation. This is just the

most confused of concepts where- Please, enlighten me.

ROBERT VAN GULICK

00:39.21 That's to me? Well, I mean I am not one who advocates downward causation if that means that the patterns or properties or structures that arise can actually violate the laws of the underlying physical structure. If it means something that's not that, but means more like what Evan was talking about – namely, that the system properties actually can structure which of the underlying components act in which ways in a way that's consistent still with non-violation of the physical laws.

00:39.59 So, I mean, I guess what I'm trying to do is, I mean, I'm trying to be a realist about consciousness. I'm trying to be a realist about consciousness having causal efficacy, but still wanting it to somehow be part of the physically realized world. So, I don't, you know, I mean-

Now, maybe you say, you know - can't have that. I mean, you're gonna- you can't have your cake and eat it, too. I mean, you gotta give up physicalism if you want consciousness to be real and causal. That's not my inclination. I want it to be real and causal and I want it to be physically realized.

STEPHEN PHILLIPS

00:40.27 But, we admit that it has effects on the physical world, I mean, that's obvious, right?

ROBERT VAN GULICK

Obviously.

STEPHEN PHILLIPS

00:40.32 So it's definitely connected, but- Why- I mean, why have as your fundamental thesis that it itself is an effect.

ROBERT VAN GULICK

00:40.46 Well, I mean I- to use the standard example, I mean, it's like life. I mean, think about, you know, biology. I mean, we now understand, I think we understand that living organisms are complex physical systems. Incredibly intricate, incredibly organized. The result of a long process of evolution and selection and such that yet, we don't feel as vitalists did a hundred years ago that life is something over and above the physical.

00:41.13 It's not another constituent. We add to it. Life, it's a fascinating part of the physical world. But the fact that there is life and living organisms is part of the physical world and I think that's how most people within the kind of perspective I'm operating within want to think about consciousness. They want to think of it as if it's just as real as life is, but it's still as physical as life is.

QUESTIONER

00:42.00 I'm still not convinced that you can uphold the position of non-reductive physicalism and the distinction you made between reductive physicalism and non-reductive physicalism. For example, if you don't attribute properties to the system, that is not shared by the individual components of that system, then why, how is it that it's not a reduction?

00:42.38 Because, I mean the way in which I understood your explanation is that the reason why the position that you prefer is non-reductive physicalism is because it's not trying to reduce all the properties to the constitutive elements. How would you characterize-

ROBERT VAN GULICK

00:42.59 Yeah. Well, I mean, first of all I hope there'll be some questions to the other panelists, as well. But I mean, the short answer- there is, I mean, I hate to direct (unintell), but a longer answer would just be this special issue of the

Journal of Consciousness Studies, where there's- I mean, the overview article at the beginning, of which I contributed, sort of lays out the space of reduction and emergence and non-reductive materialism.

00:43.25 But the short answer is I don't deny the reality of these properties. These are properties. I mean, none of the molecules of this card are pink and yet, the card is pink. I mean, so the whole can clearly have properties that are very different. It can be colored. The card can be colored and yet, there's a complete explanation of why the card is colored that could appeal to the way in which the molecules of this card interact with photons of light, selective absorption.

00:43.48 So, yes, the whole has properties that the parts don't have and yet, they're not spooky or mysterious. They're explicable in a certain way and you and I are living things, even though our

parts – maybe our cells are alive, but certainly lots of our parts aren't alive. Yet you can take things that aren't alive and put them together in a way where you get a living thing.

00:44.06 The livingness of the organism is a real property, just as the color of the card is. So, I don't deny that wholes have real properties that are different than the properties of the parts. It's just that there's a way that, in principle, you could understand how they have that thing. If you could close the explanatory gap, there would be some kind of explanation, which may be beyond our cognitive capacities.

00:44.27 It's not guaranteed that human beings have the right cognitive capacities for understanding this. But in principle, there's gotta be some story that can be told about how the parts, plus their very intricate mode of combination, produce the property of the whole. Now, can we prove that or is that a working hypothesis? It's a working

hypothesis of physicalism at this point. No one would claim physicalism has been shown or established because there's too much work to do.

WILLIAM WALDRON

00:44.55 I have one short response to that. Parrots can speak single words, or at least they can make the sounds that are like words, but they're not speaking language. The words together and in a regular pattern of syntactical relationships and used in human communication make up language. And there's an emergent property there that is not present within just the parts itself. It's like a parrot making human sounds.

ROBERT VAN GULICK

00:45.27 Some parrots are pretty good. Alex, the grey parrot. Alex, yeah?

QUESTIONER

00:45.31 I know, but my point is that still, I mean unless you have kind of the dependent arising kind of

idea, where the properties of the system is not reducible to the properties of the individual components, but it is in the interrelationship of the components that together constitute the system, there is an emergence.

00:45.59 So dependent origination, that dependent arising idea, postulates this, but I'm wondering whether that is the same idea that the non-reductive physicalism is making. Because I heard that in one- in some way or another, whether actualized or unactualized, individual components do posses that property of the system. So that's what I'm questioning. I mean it's obvious that they are- the system has properties that individual components do not have. That is obvious. That's not the question.

ROBERT VAN GULICK

00:46.29 And ones that are in many cases very different than the ones that have them. Ones that the parts couldn't possibly have. The parts couldn't

possibly be alive or the molecules couldn't possibly be colored. I mean, the word, the phrase non-reductive physicalism often engenders a lot of resistance and I think it is important to understand, to stress again that at least people like Jerry Foder and to some degree, Ned, and others who coined this phrase or this idea in the 1970s, had in mind really a rejection of a particular paradigm that was very powerful at the time.

00:47.04 It's hard for us to remember that it was so powerful, but I grew up under what was called the unity of science hypothesis. And it was under the influence of positivism and logical empiricism. I know it had no resonance in Eastern philosophy, but in mainline analytic philosophy in the United States and Europe, there was this idea that you could produce a perfect language using the tools of first order logic or higher order logic.

00:47.24 And use certain kind of sensational data and such that we're sort of given for simple observations, and everything that could be said about the world could be constructed in that language. So, theoretically, you could take the resources of physics and actually construct all the true statements of chemistry. Then use it to construct all the true statements of biology. And it was really a very much a conceptual imperialism and a notion that there was a single language that could be used for saying everything that was worth saying or that had any truth to it. And that's been rejected.

00:47.53 The zeitgeist now is thoroughly pluralistic. That we need wide ways of conceptualizing the world, wide varieties of theoretical frameworks and a variety of ways of encountering and engaging the world. So, the non-reductive aspect is the rejection of this kind of reductivism about how we have to think or know the world. But it tries to combine that with the notion that, ok, but in

some sense, the world is still physical. Why? Well, somehow, everything that's real somehow depends on the physical.

MARK SIDERITS

00:48.24 I'm going to take advantage of my situation as the moderator here and actually jump in. We're running out of time and so I can't restrain myself. There is, actually, a Buddhist equivalent of that notion of an ideal language. In abhidharma, you get the notion of a dharma language. And dharmas are symbols, they are the atoms of the physical and mental atoms out of which reality is constructed. And in fact, all situations can, in principle, be described in terms of interactions among those symbols.

00:48.59 So you do, in fact, have a perfect parallel. Now, this is not representative of THE Buddhist position. As we know now, there is no such thing as THE Buddhist position and there are those Buddhists who reject exactly that picture. But

the situation does have its parallels. Ok, I'd like to get in at least a couple of questions from the audience. Here are two, actually, both I think directed at Bill.

00:49.27 First, karma and the possibility of liberation. Given the cycle of stimuli, karma that give rise to consciousness- Sorry. Ok. Karma and the possibility of liberation. Given the cycle of stimuli, karma that give rise to consciousness, how is liberation an intention independent of karma, possible?

00:49.49 Second question that I think actually fits with the first – will the circle be unbroken? The Buddha gave a path out of samsara, but you didn't discuss. How does this endless construction change for the better?

WILLIAM WALDRON

00:50.03 What was the last part?

MARK SIDERITS

This endless, endless construction change for the better.

WILLIAM WALDRON

00:50.11 Yes. Well, that's a- I think actually, this is a question that is probably will be more directly addressed in other panels. But I wanted to limit my remarks to models of the mind that I thought would- they would find some kind of commensurability with ways that scientists are studying the rising of consciousness and the sort of patterns of- the causal patterns of arising of consciousness, rather than the ethical or moral or ameliorative, liberative dimensions of Buddhism.

00:50.50 But, what is- I think what in each of these points of these causal relations – these are not fully determinative. They tend to evoke certain types of reactions. There are dispositions towards certain things. This is not a causal

determinism and I think it's really important in the Buddhist terminology is that cognitive awareness and feeling and sensation are results. They're results of certain types of forces.

00:51.22 They are not themselves causes. And so, apala (ph) is not ahaytu (ph). And so therefore, it is not a kind of causal determinism. And I don't think, broadly speaking, that the methods that Buddhists use to overcome these habituated complexes are very different than methods that all of us, in various times and places around the world, have also used to overcome our deep-seated habits and complexes.

00:51.52 I think they're more sophisticated and systematic in certain kinds of ways, but I think there are things that, actually, a lot of us do all the time, we just don't do it in such a systematic way. So it is not a kind of causal determinism. The- Some people would like the circle to remain

unbroken, but there's an awful lot of other people who would like to get out of it.

MARK SIDERITS

00:52.18 Ok. Ok, I think this is directed to Joseph. If we can have an emotional experience without being aware of any corollary feeling, can the left prefrontal cortex that is contentment and a sense of well-being, theoretically be activated, maintained without any conscious emotional awareness operating.

JOSEPH LEDOUX

00:52.46 Well, first I don't think you can have an emotional experience without being aware of it. You can be in an emotional state without being aware of it. And you know, how that relates to left and right is still, I think, pretty unclear. But, to the extent that, you know, that the brain can segregate processing from sub-cortical centers into left and right, then theoretically

it's possible. But I think we don't know enough about that at this point.

MARK SIDERITS

00:53.17 Ok. A question for Evan. As Kant notes, the self cannot be known as a subject because only predicates can be known. Yet, if a self were a part of a whole, could the whole know the self?

EVAN THOMPSON

00:53.34 I'm not sure I quite get the question, but- Kant's idea about the self was that it was a kind of unifying principle that was not to be found in experience, but was necessary to suppose in order to account for the unity and coherence of consciousness.

00:53.58 Now, from the point of view of both Buddhist thought and also, from developments in phenomenology, that is not a necessary postulation. That there are principles of unification within the flux of moment to moment

experience or the stream of consciousness – to use James's phrase – or the self-constituting flux of consciousness – to use Fospherol's (ph) phrase.

00:54.26 So, again, it's a kind of case of emergence of self-organization. Where you have a complex pattern that arises, that pattern can't reflect back on itself and capture itself as that very pattern, of course, because that's paradoxical. That invokes a kind of reflexivity that doesn't make sense. So if that's what the second part of the question is asking, I would say the answer is no, not in that sense.

00:54.54 The self-awareness- This is a point I was trying to make. Self-awareness is something that is intrinsically temporal because it always involves a elapsing sense of what has just passed, which is the note that has just sounded, but also one's immediate sense of having heard that note. So, there's a kind of intrinsic-

00:55.11 This actually goes in connection to what Georges was talking about this morning in response to Ned. There's a kind of intrinsic self-awareness that's not reflective or introspective. It's actually passive and it's built into the structure of time consciousness and how short-term memory, in a sense, works. Not recollective memory, but short-term memory.

00:55.32 I have no idea whether that answered the question, but I hope it did.

MARK SIDERITS

00:55.38 Ok. Here's a question for either Evan or Robert, but I suppose you could both a have a shot at it. Actually, the rest of the panelists could, as well. What would it mean for consciousness to be non-naturalistic or non-biological or non-physical? What is the alternative?

EVAN THOMPSON

00:55.58 Bob, are you taking this one or am I taking this one? Well, I want to say something, actually, that goes back to the discussion we were just having about physicalism. There's a sense in which the very notion of- the thesis of physicalism is not a clear thesis.

00:56.14 And actually, Hempel pointed this out a long time ago. Because if the physical means what physicists now understand by the physical, well that's presumably limited and is going to be revised and enriched in ways that we can't foresee. If physical means what physicists at the end of the day- If that even makes sense to suppose, at the ideal limit of inquiry in the Persean (ph) sense. If the physical is what that, what physicists are gonna say at the end of the day is the physical, then physicalism is not really a contentful thesis.

00:56.42 So, here I really agree with Owen that naturalism is maybe- I mean, that's a problematic term, too.

But maybe it's a little more helpful than physicalism because- Here, think of it this way – suppose physicists were to say that we need sui generis mental properties, qua (ph) mental properties as part of the explanation of the workings of the physical world.

00:57.06 Well, would that mean that they were no longer, that they were mental in a sense of not being physical? Well, not really because if they're incorporated into the framework of physics, then in a certain sense they become physical. So this whole notion is, in a way, conceptually- I don't know how to put it. It's empty in a certain sense.

ROBERT VAN GULICK

00:57.23 Not empty.

EVAN THOMPSON

00:57.25 It's not empty. Alright. Good, so we can disagree about it.

ROBERT VAN GULICK

00:57.28 Quick response to the Hempel problem. Remember, the Hempel problem is either- It's not what physicists (unintell) or what the ideal inquiry of physics in the end. Well, here's a way of stating physicalism. It involves two elements. One is, everything that's real is physically realized. Either it's a base level physical property or it's something that is realized by combinations, complex combinations.

00:57.50 Now, how do we decide what the realm of the physical is? Well, here's at least a kind of reasonable criterion. There are no properties and no laws that need to be invoked specially – say for the mental – that aren't the same laws that govern the behavior of these physical components that are doing the realization in the non-mental case.

00:58.08 If the same ones that are necessary for regulating the atoms and the electrons or the strings or whatever it is that make up this notebook are the only laws that are needed in order to explain what's going on in Owen's brain when he, you know, thinks about his conversations with His Holiness then- I don't necessarily know what those are, but the argument is it's the same ones. There's no new laws. There's no new properties that need to be invoked.

00:58.33 Now, again, I'm not saying we know that to be true. It's a working hypothesis. It's a claim that a lot of people believe is plausible and they believe that if we're sitting here a hundred years from now, we'll say about consciousness as we now say about life. If we'd been here a hundred years ago, we would have been worrying about whether or not vitalism was true. And a hundred years from now, the suggestion is we won't be worrying about whether consciousness,

also, cannot be understood as a complex brain property.

00:58.57 That's a prediction, it's not necessarily guaranteed to be true. But that, I think, is the answer that people typically give to the open-endedness. Namely, whichever ones they are, they're the same fundamental laws that apply in the non-mental case are gonna be the only ones you need for the mental case.

MARK SIDERITS

00:59.15 Anyone else?

WILLIAM WALDRON

00:59.19 This isn't really my area, but it strikes me that this is a very metaphysical question. And there must be some strong metaphysical things at stake in this and I don't mean this to be dismissive, by any means. But one of the reasons that I focused on the particular topic and the mode of

analysis that I did is that these are things that people can get at.

00:59.41 The- what the Buddha suggested is something actually very practical here in analyzing experience. And talking about the larger metaphysical framework and arguing about that I'm sure is very important, but I think it has- these things will work themselves out, too. And in the meantime, most of us, I think- and the nitty gritty of experience and the nitty gritty of trying to understand that, you need to look at these causal patterns, you know.

01:00.13 What the Buddha's asking – and Buddhism in general, I hope I don't sound like I'm preaching here – but what is it that gives rise to certain types of experience. What are the conditions? This is a very limited type of causal syntax. It's a theory of causality. This gives rise to this type of experience and then stops when this stops.

01:00.35 And that would, to me, to my mind anyways, it suggests that those are things that are a very, very productive way of looking at things. And I really don't mean to be disrespectful here because I realize these are really important kinds of questions. But they seem to me to be very metaphysical questions and I- That's all I have to say.

MARK SIDERITS

01:00.57 Well, on that note. There are lots more questions from the audience and I am grateful that you have this much interest in the topics we're discussing. I'm sorry we didn't have time to get to all your questions, but it is now 3:30. We'll be taking a 10 minute break and then we'll come back for the third panel of the day, which is on wisdom. Thank you.

APPLAUSE

01:01.43 ***TAPE END***