

Why 'Me'?



Not a Trillion 'Mini Mes'?

Christian de Quincey looks at the Binding Problem

Q: *How come I experience "me" through my life, and yet the small conscious quarks, atoms, and molecules that compose me have been exchanged with others several times? How do billions of little consciousnesses (in quarks, atoms, molecules, and cells) combine into a unitary experience of my single consciousness?*

The Binding Problem

In panpsychism, the key slogan or bumper sticker is "*consciousness all the way down.*" It means that some degree of sentience or consciousness is present at all levels of the physical world—from animals, such as humans and whales, all the way down to worms, single cells, and below to their molecules and atoms, etc. This means that a complex organism like a human being possess countless trillions of "little consciousnesses." Yet we normally experience ourselves as just a single, unified consciousness. How does that happen? And if it happens in humans and other animals, why wouldn't the atoms and molecules of a computer, a car, a beer can, or a rock have their own consciousness?

The difference between a rock and a rat (or a human and a hat) has to do with the fact that animals are *organisms* and their constituent elements (atoms, molecules, and cells) are organized in a *hierarchy*. Each level of the hierarchy (from quanta to atoms to molecules to cells to whole organism) transcends and includes the levels below it. Thus many atoms make up a single molecule, and many molecules combine to form a single cell, and multiple cells form a living organism. The many "consciousnesses" of the preceding levels transcend, include, and unify, so that at each level there is a "dominant monad" of consciousness. The consciousness of each human, for example, is the dominant monad of all the lower-level consciousnesses that exist in all the parts of the human organism. But *how*? How do the little consciousnesses combine into one mind? *Why "me" and not a gazillion mini mes?*

The full answer to this question requires a technical explanation based on the process philosophy of Alfred North Whitehead (see below and [Radical Nature: The Soul of Matter](#)). However, you can get a sense of how it happens by realizing that the elements or constituents of organisms are related to each other in two basic ways—through external (physical) relations and *internal* (nonphysical) relations. The external relations are studied in physics, and involve the four forces of electromagnetism, strong and weak nuclear, and gravity. These forces bind physical components together. But the parts of our bodies (cells, molecules, atoms, etc.) are not just connected through physical mechanisms. Every sentient being (whether atom, molecule, or cell) also connects through sharing *experiences* and *meaning*—through *consciousness*.

All the experiences and meaning in a collection of molecules that make up a cell are available to that cell to also experience; and in the same way, the experiences of a cell are available to its host organism (e.g., when you stub your toe the cells in your toe experience pain, and that experience is available to you, the dominant organism—unless some anesthetic is involved).

The dominant monad of consciousness in the higher-level organism literally *feels* the experiences of all its constituents. It feels their consciousness as part and parcel of its own dominant consciousness. This explains why, for instance, when the cells of your stomach or nervous system experience hunger, you (the dominant monad) experience their hunger as *your* hunger. Or when the cells of your eyes experience specific colors and shapes, those experiences are unified into a single moment of *your* vision.

The same process applies as cells grow, divide, and die in our bodies. The experiences of the dying cells are passed on to the newly forming cells as memory (memory is, literally, the

experience of a past experience), and so the organism as a whole continues to have access to the experiences of cells that no longer exist—because the experiences of those cells live on in the new cells.



Survival of Consciousness and Near-Death Experiences

This question comes up often when I'm teaching about panpsychism: *What happens to my consciousness when I die?* If, as panpsychism claims, my dominant monad of consciousness is formed by the “little consciousnesses” of my cells, then when my body dies and my cells disintegrate, there could be no survival of “my” consciousness.

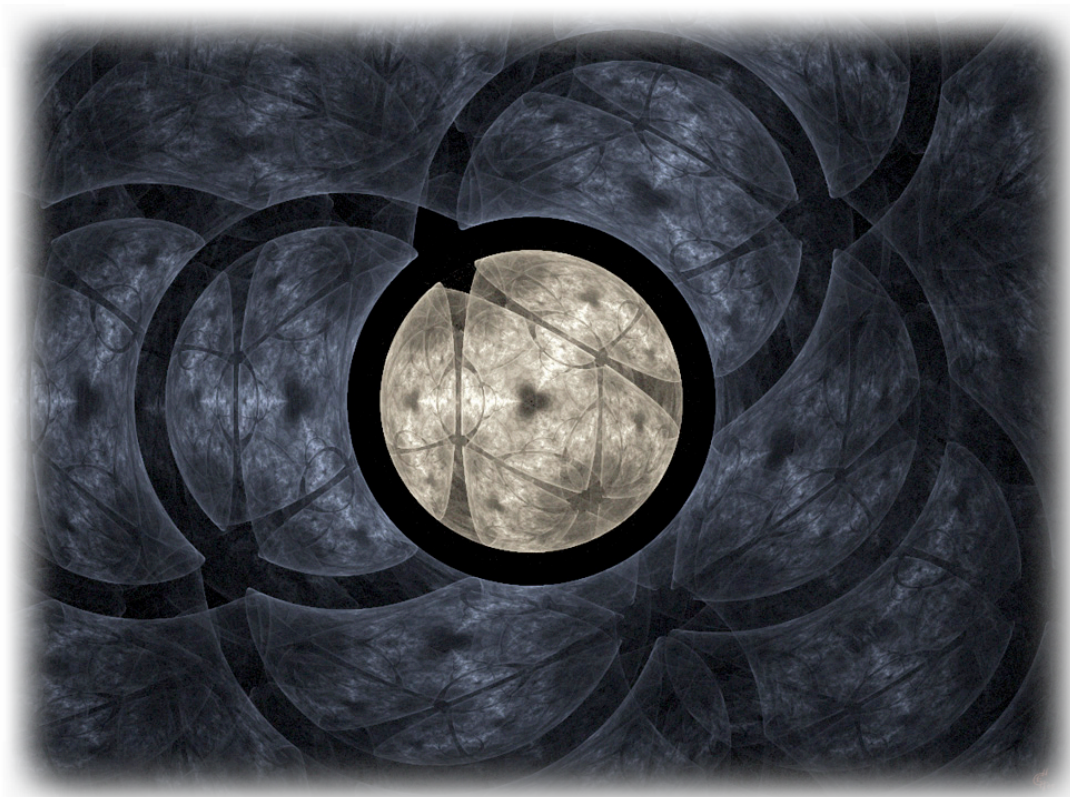
Well there's good news and bad news here. First the good news: Yes, in panpsychism, consciousness does indeed survive the death of the body. When the body dies, the consciousness of the constituent molecules and atoms remains intact. At some point these molecules get “recycled” into other organisms, and the consciousness (including memories) of the molecules gets passed on, too (same process as described above, where the new host body literally *experiences the experiences* recorded as memories in the molecules).

In certain states of consciousness, for example, during a near-death experience, the new dominant monad can access the memories and experiences of the “old” molecule, and have what is often identified as a “past-life” experience. Yes, it is a past life, but not a previous life of

the new host individual. No particular individual lives more than once. So, yes, the good news is that consciousness survives the death of the body.

So, what's the bad news? Well its bad news for our egos. They like to think they are immortal, and that what lives on after death is "me." But that is not likely because our egos are expressions of our particular embodied consciousness in this life. When the body dies, the ego goes with. If you are identified and attached to your ego (almost a certainty), then the panpsychist version of immortality is not likely to be particularly satisfying. But, as we learn from spiritual traditions the wold over, and throughout time, the essence of who we are is not our egos or individual personalities. Who we are is the consciousness that transcends individual manifestations of egos. That consciousness, that larger Self, does not die.

Consciousness: One from Many



A Panpsychist Solution to the Binding Problem

by Christian de Quincey

(adapted and extended from *Radical Nature*, chapter 9 “Past Matter, Present Mind”)

A standard critique of any form of panpsychism is that, as a worldview, it is confronted by a seemingly insuperable “binding problem,” expressed by William James: “How can many consciousnesses be at the same time one consciousness?” (1909, pp. 207–208). James was referring to the fact that a multiplicity of sensations, coursing through his body at any given moment, are *somehow* experienced in the singular as *his* consciousness.

The modern psychological version of James’s “compounding of consciousness” is: How can those brain cells that process colors, say, combine their consciousness with those that process shapes, or tastes, or textures, so that when we bite into an apple it is a unified experience? The philosophical panpsychist version of this conundrum is this: The body or brain is composed of billions of units—cells, molecules, atoms, elementary particles—and each unit has its own complement of consciousness, so how do we account for the fact that in our own case we don’t experience consciousness as a thing or a process composed of innumerable “little consciousnesses”?

Here's the problem: If we ignore the relativity of time in Einsteinian physics, then it is plausible to imagine billions of tiny events in the brain or body all occurring at the same moment we identify as "now." In panpsychism each of these events has its own micro-consciousness. So at this moment "now" there are billions of little "consciousnesses" happening in our bodies (this was James's point). But somehow, in addition to all these micro-consciousnesses there is also the dominant, *unitary* consciousness of the host organism composed of those billions of consciousness-events. *How?*

Panpsychism offers a "bottom-up" solution: At "bottom" we have innumerable cells (or microtubules, or quanta, or whatever) and each of these is sentient—each has its own "little consciousness." Each "bottom-level" entity is an event—it is fundamentally a process. That is, it comes into being as a result of the causal efficacy (or "prehension," as Whitehead called it) of prior completed events. (An event in Whiteheadian metaphysics always consists of both physical and experiential components; that is, of both physical and mental "poles.") An event is "completed" when its mental pole (its intrinsic subjectivity) expires. When its moment of duration ("now") is over, the completed subject (a unit of expired experience) becomes an "object"—the raw material for a subsequent subject. Thus objects exist in the past, subjects exist in the present, in the "now." And since each now-subject is *constituted* by antecedent objects (via prehension—the taking account of prior actualities), each subject is composed of "many."

But this is only part of the story. Each subject is not exhaustively constituted by past actualities (call them cells or microtubules); it is intrinsically a *creative* entity. It is not wholly determined. It has freedom, self-agency, an ability to choose. It chooses or "reaches out to" or "prehends" those aspects of past actualities it will incorporate. It is selective (based on its intrinsic specific aims or values). This creative agency draws together into a unity the various past actualities that constitute it. Picture a number of small bubbles being incorporated into a single, larger, dominant bubble; or picture a number of small ripples on a pond conjoining to form a larger ripple. The "many become the one." Except in this case, the one is not merely a passive recipient of its constituent members; it actively selects them.

Even more important for process philosophy, as Whitehead said, "the many become the one *and are increased by one*." The "one" now adds to the multiplicity by becoming itself an object for subsequent subject(s). And so on for different levels in the hierarchy of an organism. At each level, the "now-subject" is the dominant creative agent, drawing into a unity all its constituent member-events. A cell is the dominant "monad" (with its own subjectivity and physical embodiment) for its constituent object-organelles; an organism as a whole is the dominant monad (with its own subjectivity or consciousness) for all its constituent organs, and their constituents all the way down.

Process, Hierarchy, and Creativity

This is a "bottom-up" solution *par excellence* to the binding problem. The "creative" aspect is the subject's injection of novelty into the process by unifying aspects of the past (via prehension/causal efficacy, i.e., efficient causation) in the present (via self-agency, i.e., first cause or final cause), and thereby adding something new to the process (the many becoming the one and being increased by one).

In response to James's question, David Ray Griffin points out: "The fatal assumption was that [consciousness has] to be both 'many' and 'one' *at the same time*."

Let's sum up the steps in the panpsychist solution to the binding problem:

(1) **Unit Binding (successive — like beads on a string)**. Billions of sentient events are happening in an organism's hierarchy of cells, molecules, atoms, subatomic particles. And at each level, each unit (or "monad") endures through the process of subject-becoming-object for the next subject (e.g., a neuron prehends its own past "neuronic occasions" and unites them; it is constituted by them). This is "unit binding," where *successive* moments or occasions of experience are formed into a new unity at each new moment. Each event or monad, then, is unified in each new moment of experience (its subjective pole) and includes all relevant past or expired moments of experience (the event-monad's objective pole). Each event-trajectory or serial time-line is unified as a phased moment of experience (MoE).

(2) **Horizontal Binding (simultaneous — like strings in a net)**. No unit monad exists in isolation. Not only does it contain or unify its own past history, it is also simultaneously in relationship with innumerable other monads. Again, through acts of *prehension*, each monad draws into itself aspects of many other monads (which includes their histories). Each monad, then, is potentially infinitely complex.

Monads connect with other monads (e.g., atoms and molecules connect with other atoms and molecules) to form networks on the same hierarchical level. When multiple units or monads on the same hierarchical level prehend each other (e.g., billions of neurons in a human brain), "*horizontal binding*" occurs.

(3) **Hierarchical Binding (asynchronous — like layered nets)**. When multiple units from one level are prehended as objects by a subject on the next higher level they contribute to the physical constitution of the monad at that higher level.

But because, as objects, the prehended monads are in the past they no longer have *at that moment, for that subject*, any experience/subjectivity (it has expired).

Thus, the actualities that inform and contribute to the subject at the next level up are *not* "little consciousnesses" any longer. Therefore, there is no problem of many little consciousnesses becoming one consciousness/subject *in the same moment*, as Griffin says in response to James. This is "*hierarchical binding*"—between different levels in the hierarchy of the organism.

(4) **Object Binding (unifying embodiment)**. Now, it is also true that at that "same time" lower-level cells, molecules, etc., are in continual process and possess their own "now-subjectivity" (on the unit level (1) and the horizontal level—(2)). *But it is not the contemporary subjectivity of the cells that the organism as a whole is prehending. It is their previous "incarnations" from just a moment ago* (which in this moment "now" are expired experience). In short, hierarchical prehension binds together, or unifies, *objects*—the physical constituents of the higher-level monad.

It might help to think of each lower level of the organismic hierarchy being just a slight moment in the past with respect to the next level above it. So that at the level of the dominant monad (say, the human self), “binding” of little consciousnesses is not a problem because what is being “bound” are just-past objects (expired subjects) not billions of contemporaneous little subjects. Horizontal binding is going on “down below” while hierarchical binding is going on “up here.”

(5) **Dominant Monad (the coordinating subject).** Hierarchical binding between different levels of an organism—cells, molecules, atoms, subatomic particles—accounts for the unity of the organism’s *objective physical* body. Meanwhile, that organism as a whole constitutes a higher-level dominant monad with its own unit subjectivity (as a unified actual occasion it has its own “mental pole”). The subjectivity of the dominant monad coordinates the multifarious aims and trajectories of the multiplicity of components that constitute the monad.

At every moment, each monad at each level in the hierarchy has its own *unit consciousness* (as well as its own integrated unified physical embodiment). For example, while each molecule has its own present unit consciousness (its subjective pole), it contributes its physical pole (expired moments of experience) *as an object* to be experienced by the subjective pole of the unitary cell of which it is a part. Past objects are *passive* and *acted on* to form the body of the cell; but the present subjectivity or consciousness of the cell is *actively self-creative*—it unifies the physical poles of its constituents. It does not unify or bind the subjective poles or consciousness of its constituents. Consciousness (the subjective pole) of every monad at every level in the organism’s hierarchy is *autonomous*.

Every monad has some degree of freedom to exercise choice or self-agency. Mental anarchy is avoided because each dominant monad coordinates or “persuades” the subjective poles in its constituent hierarchy of monads to cohere toward a collective, mutually shared purpose (e.g., biological survival).

A dominant monad coordinates and aligns the choices enacted by its constituent monads. This intersubjective alignment is achieved by *sharing intention* (where “intention” is defined as the creative, spontaneous expression of an aim or purpose) and by *sharing meaning* (where “meaning” is defined as *experienced fit between self and its environment*”).

It’s a two-way process. Lesser monads also relay their intentions and meaning up the hierarchy to inform the dominant monad. The higher a monad is on the organismic hierarchy, the more potent its self-agency is, and the more influence it has over its constituents. For example, I can choose to walk across the room, and all my cells, molecules, and atoms cohere with this decision. However, none of my cells or molecules has sufficient agency to move my body.

Panpsychism, thus, aims to present a coherent account of how the multiplicity of consciousness that exists (per hypothesis) at low levels can result in the unity of consciousness we know empirically in our own case. Whitehead and Griffin describe the process nature of the relationship between objects (expired subjects) and “live” subjects, and how such process can account for the hierarchical constituency of subjective wholes from multiple object-“parts” (especially when the part-whole relationship involves *internal* relatedness), and how the “wholeness” or unity is the result of the creative agency of the emergent whole.

The panpsychist solution involves both quantum-like “units” of duration and ongoing continuity. There are no discrete timeless “instants” in Whiteheadian process metaphysics. Everything endures for at least a minimal period, but almost as soon as a low-level unit comes into being, it perishes. (This is the “quantum-like” component.) And, as soon as an MoE has perished it is prehendend by a subsequent subject and contributes to the constituency of the new monad with its own subject and its own moment of experience. (This is the process component.) In addition, this “epochal process,” as Whitehead called it, is completed by the creative component—the subject, having experience, therefore has freedom, self-agency, and this creative agency is what draws into a unity the multiple objects from its immediate past. The hierarchical component is accounted for by the fact that larger entities, or wholes, are constituted by nested systems of lower-level wholes.

Now, all three of these—process, hierarchy, and creativity—are empirical phenomena. They are not merely theoretical or speculative. We know from our own experiences that duration is an inescapable fact of experience. There are no “frozen” experiences. (Mystical experience is a whole other discussion.) We know from both quantum and relativity physics that process-events are the “stuff” of the world. We know from biology that evolution (in some form) is also a fact. Process is empirical. And from basic physics, biology, and ecology we know that the “stuff” of the world is ordered hierarchically (electrons + protons within atoms; atoms within molecules; molecules within cells, etc.). Hierarchy is empirical. We know, too, from our own case that freedom is something we all (without exception) presuppose in practice (even if we verbally deny it—one of Griffin’s hard-core common sense “regulative principles”). Freedom or creativity is empirical.

Free Will All The Way Down

A standard, and expected, objection to this solution runs something like this: “Free will even in humans is a difficult enough concept; attributing it to microtubules, molecules or atoms just compounds the difficulty.”

True, we cannot understand how even human freedom could exist in a world governed by the mechanical, deterministic laws of standard physics. Free will is impossible if we assume materialism/mechanism. In fact, the emergence of free will from wholly mechanistic units is another aspect of the hard problem that requires a miracle for a solution. But it is precisely such a materialist worldview that is in question in panpsychism.

If free will exists in our own case, then just like experience, it must go all the way down. Griffin maintains that the only coherent way to account for the experience of freedom in our own case is to adopt the panpsychist view that even microtubules and electrons have some degree of freedom. (The intrinsic ontological indeterminacy of quantum events supports this possibility. To an observer, total randomness is indistinguishable from the exercise of free choice. But to an entity with self-agency, there is a world of difference between randomness and the experience of choice.)

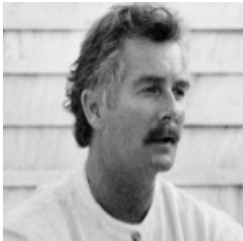
The solution to the binding problem, then, according to panpsychism, is to be found in a combination of three key concepts: *process*, *hierarchy*, and *creativity*. The body-brain is a hierarchy of events, each unit event having its own degree of subjectivity relative to its role in the

hierarchy. Mind is that singular, momentary experiential *now* event that creatively unifies physical aspects of just-past brain events. Each unit event, through the process of experiencing-subject becoming experienced-object, contributes itself to the larger whole—the organism in which it is a constituent. Mind, then, is the unifying process of the whole hierarchy of events.

Through evolution and ontogenesis, occasions of experience group together and relate to each other to form hierarchies of experiencing individuals. Each community of individuals experiences itself as a unified entity, and derives this unified experience from the felt experiences of its multiple sub-individuals *by actively and spontaneously exercising a multi-tiered “conrescence” of past objects, guided by the aims of the current subject.* Thus, the dominant monad is formed and informed by its constituent hierarchy of monads. It is always a *process involving unit, horizontal, and hierarchical binding.*

Thus a human being can experience him- or herself as a whole individual, a “dominant occasion of experience,” or “regnant monad,” by feeling or prehending the component organs and cells, which themselves are experienced as individuals. At a higher level, the collective consciousness of a (suitably attuned) group can derive its “individuality” and character from the felt experiences shared by the individual members of the group (Bohm, 1991).

Christian de Quincey, Ph.D., is Professor of Philosophy and Consciousness Studies at John F. Kennedy University; Dean of Consciousness Studies at the University of Philosophical Research; adjunct faculty with Wisdom University. He is also founder of The Wisdom Academy, offering private mentorships in consciousness. Dr. de Quincey is author of the award-winning book *Radical Nature: The Soul of Matter* and *Radical Knowing: Understanding Consciousness through Relationship*. His latest books are *Consciousness from Zombies to Angels* and *Deep Spirit: Cracking the Noetic Code*. Samples of his writings on consciousness and cosmology are available at



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