Mindmelding

Consciousness, Neuroscience, and the Mind's Privacy

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Chapter 2

An alternative framework

Introduction

It may be that what the mysterians have done is not show that the problem of consciousness is insoluble, but rather that it is insoluble if we adopt the assumption that consciousness is private. Perhaps if you assume privacy, in the end your only real options are to invent a new metaphysical category, as Searle does, or give up, as the mysterians do. But rather than going down that road, we need to consider the possibility that the failure of the defenders of privacy to solve the mind–body problem amounts to an argument against them, in the same way that scientific theories that go too long without being able to solve crucial problems become suspect. I suggest that the problem is a familiar one. Assumptions have been made and gone largely unquestioned, and these assumptions are preventing us from conceptualizing the problem in the way needed to make progress. The alchemists of the Middle Ages also encountered an insoluble problem: How to turn lead, or any other cheap and plentiful metal, into gold. But they were laboring under a deep misapprehension. Their false assumption was that metals have easily mutable natures. We know this today because we know that the different metals are molecularly different and that it is no easy matter to alter these molecular structures on a large scale.

In this chapter I will begin construction of an alternative conception designed to avoid the assumption of privacy. I am offering what Crick and Koch call a framework for understanding consciousness and our minds in general. "A framework is not a detailed hypothesis or a set of hypotheses; rather it is a suggested point of view for an attack on a scientific problem, often suggesting testable hypotheses" (Crick and Koch, 2003, p.119). "A good framework is one that sounds reasonably plausible relative to available scientific data," they continue, but it "is unlikely to be correct in all the details" (Crick and Koch, 2003, p.119). A good framework should give clear and coherent explanations of the phenomena and outline solutions to the known problems. The framework as a whole should be plausible once understood, although it may contain parts that are strongly counter-intuitive and even implausible, at least initially. Passing experimental tests is the theorist's best way to get the attention of her peers. If it does pass, that directs attention toward it, assuming none of its peer frameworks made that prediction. There is another factor here of course, officially irrelevant but powerful: Scientists and the public at large love to hear about experiments that defy commonly-held beliefs.

Here is my hypothesis in a nutshell: There is a perfectly sensible conception of the mind, of consciousness, of the self, of what we mean by "I," of how we perceive and

know, of how we remember, decide, and so on, all of which cohere amongst one another as well as with what we know about the brain, according to which it is possible for one person to directly experience the conscious states of another person. Not only can one person be directly aware of the conscious states of another person, he can be more aware of them than their original owner. He can even be aware of them when their original owner is not aware of them, and will never be aware of them. I intend to use this framework to organize a body of experimental results into a picture of consciousness as a non-private process. In Chapter 4, after presenting a sketch of current brain theory in Chapter 3, I will provide a description of the current state of scientific research on consciousness. There I will also discuss the phenomenon of binding, a type of brain event that allows several different processing streams to unify to form a single, coherent conscious state. There and throughout, on those occasions when I deviate from scientific orthodoxy, either directly, or by venturing into areas where no orthodoxy has been established, I will take care to point that out, either by citing the originators of the hypotheses under discussion, or by explicitly using the language of speculation, i.e., "possibly," "could," "may be," etc. What I have been calling mindmelding involves connecting one person's sense of self to another person's conscious state, so I need to explain what this sense of self is. In Chapters 6–8 I will present evidence that real and effective brain processes underlie our sense of self, our executive processes, and that these processes are separate from the brain processes, described in Chapter 5, that produce, prepare, and embody conscious mental representations. I will describe a hypothesis according to which higher cognition in the human brain is characterized by these self-like executive processes causally interacting with these highly-prepared representations. Finally, using this information, in Chapter 9 I will explain how mindmelding, the direct experience by one person of another's conscious representations, is in fact possible.

The possibility of mindmelding of the sort I will describe here also has larger implications for our understanding of the mind–body problem. Contrary to what most of the defenders of privacy assert, the subject is not something intrinsic to the conscious state itself. One can separate the subject from his conscious state and connect that state with another subject or self. The existence of this possibility also allows us to break the original mind–body problem into two parts: the problem of consciousness and the problem of the self. Consciousness, I will argue in Chapter 4, is the brain's binding process. This is a biological process that links various parts of the brain, each containing part of the conscious state, by way of a synchronizing electrical pulse emanating from a small nucleus deep in the brain. According to this conception, the problem of consciousness is a more "scientific" problem, and has fundamentally been solved by the discovery and elucidation of the binding processes that link portions of the cortex and thalamus. The remaining problem is a more "philosophical" one and involves understanding subjectivity and the self in terms of ordinary physical things, properties, and events. This implies that the change in terminology from "mind–body problem" to "problem of consciousness" was ill-advised. Most likely the change seemed natural because people believed, explicitly or not, that the self or subject is intrinsic to consciousness, so that one could capture both self and consciousness with the term "consciousness." On the other hand, if you do not separate self from

consciousness, you have to accept the sort of novel epistemic-metaphysical simples that for instance Searle does. If that is unsatisfactory, you must accept defeat, as the mysterians do.

The philosophical picture I am framing is intended to be consistent with the scientific picture so that, for instance, several chains of inference of the following form should connect them: If the scientific picture contains hypothesis *p*, then the philosophical picture contains hypothesis *q*. Scientific theories and supported hypotheses can function as the data for philosophical hypotheses, rather like treating philosophy as an inductive discipline, with scientific theories as its data. So that in the end you are employing the following method: Observation leads to scientific hypotheses, which leads to philosophical hypotheses. For instance, consider the observation that removal of a portion of the anterior cingulate cortex relieves not the sensation of pain but its disagreeableness, so that people don't mind pain that was previously unbearable to them, while reporting that the pain itself is the same. This leads to the scientific hypothesis that there are at least these two components to the phenomenon of pain. And this should warn philosophers away from certain hypotheses to the effect that pain is only relieved when the sensation is gone, or that there is nothing more to pain than its conscious character, or that pain is a single, simple phenomenon. Another example closer to our interests begins with the observations of instances of the effects on the mind of head injury, psychoactive drugs, lack of oxygen, and countless other insults. This generates a scientific hypothesis: that physical forces affect the mind. This in turn helps generate the philosophical hypothesis of materialism: The simplest explanation for these effects is that the mind is also physical.

Making mindmelding conceivable

One piece of orthodoxy among cognitive scientists today is the idea that higher-level mental processes—such as conscious thought, planning, and deliberation—take place in the cortex, the wrinkled gray outer layer of the brain. Perceptual processes are located primarily in the back of the cortex, while motor, or at least action-oriented processes are located in its frontal regions. We are always perceiving and acting at the same time, however. Causal flow runs both from bottom to top—from the perceptual processes to the higher levels of cognition and action planning—and from top to bottom at the same time. Witness the way that assumptions, stereotypes, and desires can affect perception. Unlike simpler species, our perceptions and the actions based on them can be far apart in time. Instead of reacting automatically, we make decisions, some of which take seconds, others of which take years, and the actions resulting from those decisions might last a lifetime. There are two basic participants in this decision-making process. First, since correct representations of the world are crucial to good decisions, one participant in decision-making is the huge set of mental representations contained in our brains. But some other brain processes need to employ these representations in cognition, and then direct actions out into the world in an effective way. These processes also need to mix in the effects of emotions, motivations, and memories during the planning and decision-making process. We saw in Chapter 1 that scientists call these other brain processes *executive processes*. They are, I will contend, one

of a set of phenomena that produce our sense of self, including the sense that we are in charge of our thoughts, decisions, and actions. This separation, between those brain processes that embody our conscious representations, and those that manipulate them and produce a sense of self, is crucial to the possibility of mindmelding. If conscious perceptual representations are located toward the back of the brain, specifically, in the temporal and parietal lobes, and sense of self is generated by processes located toward the front, in the prefrontal lobes, what if we imagine connecting person A's temporal lobes to person B's prefrontal lobes? Could this be done in a way that would produce a coherent conscious state for B? Could this produce a case where one person, B, has direct access to another person's, A's, perceptual representations? I think that this is a real possibility.

Sense of self

Our notion that there is something like a self at work in our minds is produced partly by executive processes that manipulate representations, eliciting them, monitoring them, checking them, correcting them, using them to guide actions, or stopping them from leading to actions—a process known as inhibition. These processes create an active presence in the conscious mind, a sense that there is something there doing something with our representations. There are other brain processes that embody other components of the human sense of self, including several different types of self-representations that work together in what I call a self-representation system (see Chapter 8). These provide all the levels and types of self-representation needed to produce effective actions. In general, executive processes produce a sense of self in the present, while self-representations produce a sense of ourselves as existing over time. Here I will focus on our executive processes, because I believe they provide the kind of occurrent, real-time sense of self needed for one person to experience another's conscious representations. In Chapter 8, I will describe the self-representation system in detail, as well as how it interacts with our executive processes.

Executive processes

Executive processes become active when routine behavior fails. We often go through an entire day performing actions we've performed dozens or even hundreds or thousands of times before, expending very little conscious mental effort. But when something important is at stake, or something unexpected, dangerous, or negative happens, we need to break out of our routines and solve problems and make decisions. Neuropsychologists have found that executive processes are required to actively stop routine actions and initiate decision-making or problem-solving processes. Otherwise, a phenomenon known as *perseveration* takes place: We keep doing the same thing, even when we can see that it isn't working. In general, we need to engage executive processes when situations get more complex and our responses need to be more flexible. This includes cases where planning or decision-making is required, cases where we detect errors in our responses that need correcting, and cases where we need to switch between two or more tasks.

What we call thinking, deciding, planning, and remembering is accomplished primarily by the brain's executive processes. The executive processes reside in the prefrontal lobes, including the dorsolateral frontal lobes, on the side of the brain, the ventrolateral frontal lobes below them, the medial prefrontal lobes, hidden on the inner surfaces of the two hemispheres, and the orbitofrontal lobes, located on the undersurface of the brain, just above the eye sockets. One area that is frequently active during effortful processing is the anterior cingulate, which is part of the medial prefrontal cortex, on the inner surface of the two hemispheres, just in front of the corpus callosum, the bundle of fibers that connect the left and right hemispheres. One introspectively accessible measure of the amount of certain types of executive activity is our sense of mental effort. This increased mental effort correlates with increased usage of oxygen by selected executive areas, which is detectable by brain imaging. The anterior cingulate is thought to play a role in resolving conflicts between routine actions that are not relevant to the present task, and novel actions that are relevant. Brain imaging studies show that the prefrontal executive processes become less active during routine actions, while we are dreaming, and during certain meditative states.

Another source of information about executive processes is the study of neurological patients who have lost one or more executive functions due to brain damage. A favorite test of planning ability is the Towers of Hanoi problem, in which several stacked disks of gradually larger sizes must be transferred from one peg to another, obeying the rule that a larger disk may never be put on a smaller one. Patients with damage to the dorsolateral prefrontal cortex are at a loss in this task. Some of these patients will also perseverate, causing them to fail another standard test, the Wisconsin Card Sorting Test. Here the subject must sort cards, each of which contains one or more colored shapes. First the subject is instructed to sort the cards by the shape of their figures. Then the rule is changed, and the subject is told to sort the cards by the color of their figures. The patients will not be able to change, i.e., they will perseverate, even though many of them remark that they know they are sorting incorrectly. They have lost the ability to disengage ongoing behavior.

According to several theorists (e.g., Miller and Cohen, 2001; Petrides, et al., 2002), the prefrontal cortex never contains our conscious mental representations. Rather, the prefrontal lobes contain the processes that monitor and manipulate these representations, which reside in more posterior regions, in the temporal and parietal lobes. This supports the idea that it is possible in principle to separate the executive processes in the prefrontal lobes from the representations they operate on, in the temporal and parietal lobes. Chapters 6, 7, and 8 will contain much more information about executive processes.

Executive processes and sense of self

Together, the executive processes produce the impression of an inner self that interacts with perceptions, contemplates mental images, inhibits certain action plans while initiating others, retrieves and organizes memories, and so on. One way to see how these executive processes produce a sense of self is to see how we identify with them by applying that special word "I" to what they do. We assume ownership for what the executive processes do, by claiming that *we* did it. We typically speak as if the executive

processes are under voluntary control, even when they act automatically. In other cases, the activity of certain executive processes constitutes voluntary control itself. Here are some examples of linguistic constructions in which we use "I" to refer to the actions of the executive processes:

I am aware of x.
I recalled x.
I thought about x.
I analyzed the idea of x.
I stopped myself from doing x.
I decided to x.
I plan to x.
I intend to x.

In general, what makes sentences of the form, "I am aware of my mental image," true is an event in which that mental image enters into certain causal relations with executive processes. Chapter 10 contains a full account of how to tell whether sentences of this form are true, something important for my project, since I am claiming that sentences of the form, "Jan is aware of Jo's mental image," can be true.

Other sorts of mental events, such as impulses and thoughts that simply pop up, are spoken of in a passive rather than an active way. These impulses and thoughts are conscious events generated by posterior brain processes in the temporal and parietal lobes. They are the data that the executive processes operate on. When such mental events occur, that are not the result of executive processes but which causally affect the executive processes, we speak in a passive mode:

My attention was drawn to x.
An image of x flashed in my mind.
It occurred to me that x.
I was distracted by x.

We acknowledge the actions of the executive processes as our actions. We acknowledge our ownership of them, as opposed to other mental events, such as images that sometimes pop into consciousness, which we sometimes disown. A person might disown certain violent, racist, or sexual images, for instance. There are times when executive processes malfunction, and we need to disown them as well, in order to maintain a healthy and coherent sense of self. But the difficulty of doing this supports the idea that normally the workings of our executive processes are acknowledged as ours. Obsessive–compulsive disorder (OCD) occurs when certain processes located in the orbitofrontal lobes are hyperactive. These processes are connected with other prefrontal processes which they work together with to achieve executive functions such as error-checking, alerting, and inhibiting. The ability of alerting processes to interrupt whatever is happening in consciousness is what makes OCD so debilitating. An important therapeutic technique for treating OCD is to train the patient to disown these obsessive alerting thoughts (e.g., My hands are dirty, The front door is unlocked). When the obsessive thought happens, the patient is told, don't think, "I wanted to check the locks again," but rather, "That urge to check the locks came up again" (Schwartz and Begley, 2002).

The homunculus objection

One objection on the minds of many readers at this point will be that I am committing the homunculus fallacy: the idea that vision is like a movie theater in which visual systems present the information coming into the eyes to a little man—a homunculus—watching the incoming visual information on a movie screen. This scenario explains nothing about how we see: How does the little man see? Is there a littler man in his head? According to this objection, I am speaking of the executive processes as if they had all the intelligence and discriminative capacity of full human beings. There are two points to make in an initial response to this. The first is that each executive process is quite limited in its scope and function, nothing at all like a full human being. While the question of how to individuate executive processes is currently a topic of debate among brain scientists, some evidence points toward activity in different brain areas when each function is performed, implying that different brain processes are performing each function. There is also evidence of modality specificity in executive function, that is, different types of representation, e.g., verbal vs. visual, are operated on by different executive processes. The second point is that, once one realizes all of the ways in which representations are prepared prior to their causal interactions with executive processes (which are surveyed in Chapter 5), one arrives not at the conclusion that the executive processes are very intelligent, but rather at its opposite: Representations must be carefully prepared for the executive processes because they are so limited and error-prone. The blind spot in the visual field must be filled in, for instance, to avoid disrupting visual attention, and color is added to the visual processing stream to aid discrimination and action.

Acknowledging the limited scope of individual executive processes appears to create another sort of problem for my view, however. The more executive processes there are, the more this works against the everyday idea of a *single* self that does all these things. Indeed, there does seem to be a tendency for us to exaggerate the unity of the executive processes when we speak to others, lumping them all under the concept *I*. We also tend to claim that behaviors were the result of voluntary decisions, i.e., executive processes, when in fact they were caused by simple impulses. This constitutes an important type of confabulation, in which we own mental events that were not under our control. No doubt one reason why we do this is that it is socially beneficial for us to present ourselves as unified, consistent beings, in charge of and responsible for our actions. Contrary to several other writers (e.g., Dennett, 1991; Block 2007), I will argue that the set of executive processes is a highly integrated ensemble rather than a motley collection of loosely bound processes and states. Even though there are several different executive processes according to all current accounts, there are also real forces working to keep them coherent with one another, so that they can still be considered parts of a unified system. One reason why coherence is needed is that the executive processes might interfere with one another in a way that produces ineffective or dangerous behavior. There are several ways that interference might occur. One executive process might modify a representation while another is still causally interacting with it. (This may be one reason why we cannot voluntarily alter our perceptual qualia.) Another type of interference occurs when executive processes stop mental activity

when they detect an error and stop planning and decision-making processes before their work is complete, as happens in OCD.

The brain's higher-level architecture: a hypothesis

A great deal of processing by the brain's perceptual areas occurs before we are aware of events in our surrounding environment. Perception is a multistage process in which incoming energy in several different forms—chemical, electrical, and mechanical—must be transduced into certain types of electrical impulses, processed, and structured so that the executive processes can causally interact with the resulting representations. My plan is to argue that our perception of the world is complicated and multileveled so that incoming information can be put into the form that the executive processes work best with. Rather than evolving single-level, highly detailed representations, we evolved stratified representations, with each level at a relatively low resolution. For instance, the visual field we experience is a combination of several levels, each of which is constructed by a separate brain process. After the levels are constructed, they are bound together into a coherent and unified representation of our surrounding environment. The colors of objects are bound with their shapes, and these are bound with information about which objects are in front of which. At another level, objects are identified by being associated with concepts. This construction process is for the benefit of the executive processes. For instance, the addition of a level in which color is added to visual representations makes the work of the executive systems much easier. Color differences make stimuli salient that would be extremely difficult to detect with black and white vision. Colors parse the visual field in a clear and simple way, making the projection of actions into that part of the environment easier and more effective. Color properties can also work as *entifying* properties, they delineate the world out there into separate objects. There may be other relatively large-brained mammals that do not have this sort of architecture, and make do instead with a single level of very high-resolution "representations" each of which is coupled to a motor "plan." This sort of system allows for quicker responses, but at a cost in flexibility. Also, as my use of scare quotes indicates, I am not certain that real representations can exist without executive processes.

As I will argue at length in Chapter 5, the brain carefully edits and prepares its representations before they interact with prefrontal executive processes. Perhaps because what the executive processes accomplish is a high-level, highly effective form of thought, which is apparently very rare in the animal kingdom, they need help from other parts of the brain to tailor and adapt their products to compensate for their limits. The layering of levels within representations is only one technique the brain has for preparing representations to interact with executive processes, on this hypothesis. I will focus on a second type of preparation process in Chapter 5, the one responsible for filling in the visual blind spot. In the last 15 years several pieces of evidence have emerged to support the claim that the brain's visual cortices have processes which fill in the blind spot based on what is being perceived in the surrounding area. These processes will complete a line across the blind spot, fill in a corner when perpendicular lines meet in the blind spot, and fill in color to match the surrounding area

(Ramachandran and Churchland, 1994). They can also be "tricked" and "confused" by certain stimuli. For example, a stimulus consisting of a disk, divided in half, colored red on the top, and green on the bottom, situated over the blind spot, so that its outer portion is visible outside the blind spot, causes the filling in processes to vacillate, first filling in the blind spot with red, then with green, then back to red. The visual system fills in so that visual executive processes are not constantly "distracted" by the blind spot. The blind spot would also attract bottom-up attentional processes which would then, needlessly, alert top-down attention.

Binding

Scientists first began to understand the brain by tracing input from the sense organs to what are called unimodal cortical areas—areas devoted to a single sensory modality. They found visual areas, auditory areas, olfactory areas, areas devoted to processing information about the body (called somatosensory areas), and areas devoted to processing different tastes (called gustatory areas) (see Zeki, 1993, for an example in the visual modality). As they traced these causal chains inward, they found that processing in each modality progresses through several different levels. They saw that, once this information has been fully processed, the unimodal areas converge on several interconnected multimodal areas (Macaluso and Driver, 2005). But the scientists then realized they had a difficult question on their hands: How do the multimodal areas combine their inputs into the seamless and normally coherent experience we know? This has become known as *the binding problem* (Crick and Koch, 1990).

There is not one binding problem, but several, since there are apparently many different levels of binding in the brain. Binding occurs not only across modalities, but also within modalities. For instance, as I just noted, a certain area in the brain's visual cortex produces the object shapes we see, while other, connected areas produce the colors of these objects, but in our conscious perception the colors and shapes are combined. Research into how binding is accomplished is just beginning (see Cleermans, 2003). Most theories of binding posit electrical oscillations generated by nerve cells that synchronize the activity of different cortical areas through phase-locking, i.e., all of the bound areas begin resonating together, typically at around 40 Hertz, or 40 times a second (Singer, 1997). These theories have tended to focus on binding occurring within a single perceptual modality. We do not yet know whether these different levels of binding are achieved by one process, or by several different ones.

The conscious mental events we experience involve not merely unified, highly prepared, multimodal conscious representations. They are truly events, happenings, in which things are done with representations. Much of the work of the executive processes seems to occur in the periphery of the conscious state. It is difficult for us to be aware of the executive processes while they are actually working. In fact, attempting to become directly aware of an executive process tends to interfere with it. But by using memory, we can become aware of their acts after they have done their work. For instance, you can become aware that you cued your memory system by imagining the face of the person whose name you are trying to recall, and that you corrected the memory that was elicited.

Mindmelding

We now have all the ideas needed to make a prima facie case for mindmelding. There is something like a self in the brain, and it is separate from the representations it operates on. What we do, then, is hook up one person's self to another person's conscious representations. Here goes: Imagine two normal people, standing side by side. Call them Joe and Jan. With a bit of imagination we can create different mixed nervous systems, made from parts of Joe's and Jan's nervous systems. Imagine shunting the input running up Joe's optic nerves to Jan's optic nerve, for instance. Then Jan would literally see the world through Joe's eyes. As a first thought experiment aimed at producing mindmelding, we might try connecting Joe's temporal lobes to Jan's prefrontal lobes. The temporal lobes and prefrontal lobes are normally connected by several different fiber bundles, known as association bundles (see Chapter 9). What if we branched the bundles in Joe's brain and ran a connection to Jan's brain? We would also need to make many other physical connections required for binding to occur. A start here would be to connect the synchronizing nuclei of Joe and Jan, so that they could coordinate their oscillations. Could this produce a unified and coherent conscious state in Jan's brain?

One thing it means to claim that Jan experiences the conscious states of Joe is that Jan might truly say after the procedure, "I just experienced Joe's conscious visual states, and what he calls 'red' is actually green!" Mindmelding would be a strange and possibly frightening experience for Jan. As we have described it, the conscious states which Jan apprehends would be modified by the executive processes of Joe, and this would give Jan an odd feeling of lack of control over them. To remedy this, we might imagine putting in place the connections that would allow Jan's executive processes to manipulate Joe's conscious representations, then perhaps Joe and Jan could take turns having control over Joe's representations. Jan's experience during mindmelding is interesting, because she would be aware that the conscious representations are in some important sense not hers, but she would nevertheless experiences them in the intimate way normally reserved for one's own conscious representations.

It is important to be clear that mindmelding does not involve one person having access to a copy of another person's conscious representations. Even if we were happy with the fidelity of a copy, experiencing it would still be an indirect way to know about the mental states of another. This would not be true mindmelding. If there was ever disagreement between Joe and Jan about what was being experienced, we would have to give much greater weight to what Joe said. In mindmelding, Jan is in contact with Joe's conscious representations themselves. Joe and Jan are directly aware of the same states and processes, in the same way. The branched fibers are not transmitting copies of the representations to the prefrontal lobes. Rather, they are carrying the causal connections needed to allow the executive processes to interact with the representations.

Person B cannot coherently experience A's *entire* conscious mind—her conscious representations plus her executive processes—but this is not because A's conscious states belong to some special metaphysical category, as in some views. It is a simple fact of how we experience the world, and of the way in which we identify with what the executive processes do. I cannot experience your entire mind without being you.

But if I were you this would not be a case of my experiencing your consciousness, but rather just another case of you experiencing your consciousness. It would not be me knowing you, but rather me becoming you. Thus, your entire mind is not something I can experience. There simply isn't room for two people in anything resembling a normal, full conscious state.

Once we take it seriously, the possibility of mindmelding opens up all sorts of other interesting questions and avenues of research. What if we showed Joe an ambiguous figure, such as the duck/rabbit? How would Jan interpret Joe's conscious visual representation? Could Joe interpret the conscious state as a representation of a duck, while Jan interprets it as a representation of a rabbit? What if we showed Joe and Jan a picture of a lion, knowing that Joe loves lions, while Jan loathes them? Could we cause Jan to have false memories, i.e., could we cause Jan to believe that an autobiographical memory of Joe's is actually one of hers?

Conclusion

As conceived within the alternative view, mindmelding is possible, and this possibility removes much of the force from the mind–body problem by removing the impasse caused by the belief in privacy. It removes what some philosophers saw as a need to posit strange and unheard-of metaphysical categories. The subject's sense of self can be separated from the object of her conscious awareness, usually a representation, and that object can be bound to another's sense of self.