

1— Two Concepts of Mind

1— What Is Consciousness?

Conscious experience is at once the most familiar thing in the world and the most mysterious. There is nothing we know about more directly than consciousness, but it is far from clear how to reconcile it with everything else we know. Why does it exist? What does it do? How could it possibly arise from lumpy gray matter? We know consciousness far more intimately than we know the rest of the world, but we understand the rest of the world far better than we understand consciousness.

Consciousness can be startlingly intense. It is the most vivid of phenomena; nothing is more real to us. But it can be frustratingly diaphanous: in talking about conscious experience, it is notoriously difficult to pin down the subject matter. *The International Dictionary of Psychology* does not even try to give a straight forward characterization:

Consciousness: 'The having of perceptions, thoughts, and feelings; awareness. The term is impossible to define except in terms that are unintelligible without a grasp of what consciousness means. Many fall into the trap of confusing consciousness with self-consciousness—to be conscious it is only necessary to be aware of the external world. Consciousness is a fascinating but elusive phenomenon: it is impossible to specify what it is, what it does, or why it evolved. Nothing worth reading has been written about it.' (Sutherland 1989)

Almost anyone who has thought hard about consciousness will have some sympathy with these sentiments. Consciousness is so intangible that even this limited attempt at a definition could be disputed: there can arguably be perception and thought that is not conscious, as witnessed by the notions of subliminal perception and unconscious thought. What is central to conscious-

ness, at least in the most interesting sense, is *experience*. But this is not definition. At best, it is clarification.

Trying to define conscious experience in terms of more primitive notions is fruitless. One might as well try to define *matter* or *space* in terms of something more fundamental. The best we can do is to give illustrations and characterizations that lie at the same level. These characterizations cannot qualify as true definitions, due to their implicitly circular nature, but they can help to pin down what is being talked about. I presume that every reader has conscious experiences of his or her own. If all goes well, these characterizations will help establish that it is just *those* that we are talking about.

The subject matter is perhaps best characterized as "the subjective quality of experience." When we perceive, think, and act, there is a whirl of causation and information processing, but this processing does not usually go on in the dark. There is also an internal aspect; there is something it feels like to be a cognitive agent. This internal aspect is conscious experience. Conscious experiences range from vivid color sensations to experiences of the faintest background aromas, from hard-edged pains to the elusive experience of thoughts on the tip of one's tongue; from mundane sounds and smells to the encompassing grandeur of musical experience; from the triviality of a nagging itch to the weight of a deep existential angst; from the specificity of the taste of peppermint to the generality of one's experience of selfhood. All these have a distinct experienced quality. All are prominent parts of the inner life of the mind.

We can say that a being is conscious if there is *something it is like* to be that being, to use a phrase made famous by Thomas Nagel.¹ Similarly, a mental state is conscious if there is something it is like to be in that mental state. To put it another way, we can say that a mental state is conscious if it has a *qualitative feel*—an associated quality of experience. These qualitative feels are also known as phenomenal qualities, or *qualia* for short.² The problem of explaining these phenomenal qualities is just the problem of explaining consciousness. This is the really hard part of the mind-body problem.

Why should there be conscious experience at all? It is central to a subjective viewpoint, but from an objective viewpoint it is utterly unexpected. Taking the objective view, we can tell a story about how fields, waves, and particles in the spatiotemporal manifold interact in subtle ways, leading to the development of complex systems such as brains. In principle, there is no deep philosophical mystery in the fact that these systems can process information in complex ways, react to stimuli with sophisticated behavior, and even exhibit such complex capacities as learning, memory, and language. All this is impressive, but it is not metaphysically baffling. In contrast, the existence of conscious experience seems to be a *new* feature from this viewpoint. It is not something that one would have predicted from the other features alone.

That is, consciousness is *surprising*. If all we knew about were the facts of physics, and even the facts about dynamics and information processing in complex systems, there would be no compelling reason to postulate the existence of conscious experience. If it were not for our direct evidence in the first-person case, the hypothesis would seem unwarranted, almost mystical, perhaps. Yet we know, directly, that there is conscious experience. The question is, how do we reconcile it with everything else we know?

Conscious experience is part of the natural world, and like other natural phenomena it cries out for explanation. There are at least two major targets of explanation here. The first and most central is the very *existence* of consciousness. Why does conscious experience exist? If it arises from physical systems, as seems likely, how does it arise? This leads to some more specific questions. Is consciousness itself physical, or is it merely a concomitant of physical systems? How widespread is consciousness? Do mice, for example, have conscious experience?

A second target is the specific *character* of conscious experiences. Given that conscious experience exists, why do individual experiences have their particular nature? When I open my eyes and look around my office, why do I have *this* sort of complex experience? At a more basic level, why is seeing red like *this*, rather than like *that*? It seems conceivable that when looking at red things, such as roses, one might have had the sort of color experiences that one in fact has when looking at blue things. Why is the experience one way rather than the other? Why, for that matter, do we experience the reddish sensation³ that we do, rather than some entirely different kind of sensation, like the sound of a trumpet?

When someone strikes middle C on the piano, a complex chain of events is set into place. Sound vibrates in the air and a wave travels to my ear. The wave is processed and analyzed into frequencies inside the ear, and a signal is sent to the auditory cortex. Further processing takes place here: isolation of certain aspects of the signal, categorization, and ultimately reaction. All this is not so hard to understand in principle. But why should this be accompanied by an *experience*? And why, in particular, should it be accompanied by *that* experience, with its characteristic rich tone and timbre? These are two central questions that we would like a theory of consciousness to answer.

Ultimately one would like a theory of consciousness to do at least the following: it should give the conditions under which physical processes give rise to consciousness, and for those processes that give rise to consciousness, it should specify just what sort of experience is associated. And we would like the theory to explain *how* it arises, so that the emergence of consciousness seems intelligible rather than magical. In the end, we would like the theory to enable us to see consciousness as an integral part of the natural world. Currently it may be hard to see what such a theory would be like, but without such a theory we could not be said to fully understand consciousness.

Before proceeding, a note on terminology. The term "consciousness" is ambiguous, referring to a number of phenomena. Sometimes it is used to refer to a cognitive capacity, such as the ability to introspect or to report one's mental states. Sometimes it is used synonymously with "awakeness." Sometimes it is closely tied to our ability to focus attention, or to voluntarily control our behavior. Sometimes "to be conscious of something" comes to the same thing as "to know about something." All of these are accepted uses of the term, but all pick out phenomena distinct from the subject I am discussing, and phenomena that are significantly less difficult to explain. I will say more about these alternative notions of consciousness later, but for now, when I talk about consciousness, I am talking only about the subjective quality of experience: what it is like to be a cognitive agent.

A number of alternative terms and phrases pick out approximately the same class of phenomena as "consciousness" in its central sense. These include "experience," "qualia," "phenomenology," "phenomenal," "subjective experience," and "what it is like." Apart from grammatical differences, the differences among these terms are mostly subtle matters of connotation. "To be conscious" in this sense is roughly synonymous with "to have qualia," "to have subjective experience," and so on. Any differences in the class of phenomena picked out are insignificant. Like "consciousness," many of these terms are somewhat ambiguous, but I will never use these terms in the alternative senses. I will use all these phrases in talking about the central phenomenon of this book, but "consciousness" and "experience" are the most straightforward terms, and it is these terms that will recur.

A Catalog of Conscious Experiences

Conscious experience can be fascinating to attend to. Experience comes in an enormous number of varieties, each with its own character. A far-from-complete catalog of the aspects of conscious experience is given in the following pretheoretical, impressionistic list. Nothing here should be taken too seriously as philosophy, but it should help focus attention on the subject matter at hand.

Visual experiences. Among the many varieties of visual experience, color sensations stand out as the paradigm examples of conscious experience, due to their pure, seemingly ineluctable qualitative nature. Some color experiences can seem particularly striking, and so can be particularly good at focusing our attention on the mystery of consciousness. In my environment now, there is a particularly rich shade of deep purple from a book on my shelf; an almost surreal shade of green in a photograph of ferns on my wall; and a sparkling array of bright red, green, orange, and blue lights on a Christmas

tree that I can see through my window. But any color can be awe-provoking if we attend to it, and reflect upon its nature. Why should it feel like *that*? Why should it feel like anything at all? How could I possibly convey the nature of this color experience to someone who has not had such an experience?

Other aspects of visual experience include the experience of shape, of size, of brightness, and of darkness. A particularly subtle aspect is the experience of depth. As a child, one of my eyes had excellent vision, but the other was very poor. Because of my one good eye, the world looked crisp and sharp, and it certainly seemed three-dimensional. One day, I was fitted with glasses, and the change was remarkable. The world was not much sharper than before, but it suddenly looked *more* three-dimensional: things that had depth before somehow got deeper, and the world seemed a richer place. If you cover one eye and then uncover it, you can get an idea of the change. In my previous state, I would have said that there was no way for the depth of my vision to improve; the world already seemed as three-dimensional as it could be. The change was subtle, almost ineffable, but extremely striking. Certainly there is an intellectual story one can tell about how binocular vision allows information from each eye to be consolidated into information about distances, thus enabling more sophisticated control of action, but somehow this causal story does not reveal the way the experience *feels*. Why that change in processing should be accompanied by such a remarking of my experience was mysterious to me as a ten-year-old, and is still a source of wonder today.

Auditory experiences. In some ways, sounds are even stranger than visual images. The structure of images usually corresponds to the structure of the world in a straightforward way, but sounds can seem quite independent. My telephone receives an incoming call, an internal device vibrates, a complex wave is set up in the air and eventually reaches my eardrum, and somehow, almost magically, I hear a *ring*. Nothing about the quality of the ring seems to correspond directly to any structure in the world, although I certainly know that it originated with the speaker, and that it is determined by a waveform. But why should that waveform, or even these neural firings, have given rise to a sound quality like *that*?

Musical experience is perhaps the richest aspect of auditory experience, although the experience of speech must be close. Music is capable of washing over and completely absorbing us, surrounding us in a way that a visual field can surround us but in which auditory experiences usually do not. One can analyze aspects of musical experience by breaking the sounds we perceive into notes and tones with complex interrelationships, but the experience of music somehow goes beyond this. A unified qualitative experience arises

Image not available.

Figure 1.1.
 Effability and ineffability in olfactory
 experience.
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from a chord, but not from randomly selected notes. An old piano and a far-off oboe can combine to produce an unexpectedly haunting experience. As always, when we reflect, we ask the question: why should *that* feel like *this*?

Tactile experiences. Textures provide another of the richest quality spaces that we experience: think of the feel of velvet, and contrast it to the texture of cold metal, or a clammy hand, or a stubbly chin. All of these have their own unique quality. The tactile experiences of water, of cotton candy, or of another person's lips are different again.

Olfactory experiences. Think of the musty smell of an old wardrobe, the stench of rotting garbage, the whiff of newly mown grass, the warm aroma of freshly baked bread. Smell is in some ways the most mysterious of all the senses, due to the rich, intangible, indescribable nature of smell sensations. Ackermann (1990) calls it "the mute sense; the one without words." While there is something ineffable about any sensation, the other senses have properties that facilitate some description. Visual and auditory experiences have a complex combinatorial structure that can be described. Tactile and taste experiences generally arise from direct contact with some object, and a rich descriptive vocabulary has been built up by reference to these objects. Smell has little in the way of apparent structure and often floats free of any apparent object, remaining a primitive presence in our sensory manifold. (Perhaps animals might do better [Figure 1.1].) The primitiveness is perhaps partly due to the slot-and-key process by which our olfactory receptors are sensitive to various kinds of molecules. It seems arbitrary that a given sort of molecule should give rise to *this* sort of sensation, but give rise it does.

Taste experiences. Psychophysical investigations tell us that there are only four independent dimensions of taste perception: sweet, sour, bitter, and salt. But this four-dimensional space combines with our sense of smell to produce a great variety of possible experiences: the taste of Turkish Delight, of curried black-eyed pea salad,⁴ of a peppermint Lifesaver, of a ripe peach.

Experiences of hot and cold. An oppressively hot, humid day and a frosty winter's day produce strikingly different qualitative experiences. Think also of the heat sensations on one's skin from being close to a fire, and the hot-cold sensation that one gets from touching ultra-cold ice.

Pain. Pain is a paradigm example of conscious experience, beloved by philosophers. Perhaps this is because pains form a very distinctive class of qualitative experiences, and are difficult to map directly onto any structure in the world or in the body, although they are usually associated with some part of the body. Because of this, pains can seem even more subjective than most sensory experiences. There are a great variety of pain experiences, from shooting pains and fierce burns through sharp pricks to dull aches.

Other bodily sensations. Pains are only the most salient kind of sensations associated with particular parts of the body. Others include headaches (which are perhaps a class of pain), hunger pangs, itches, tickles, and the experience associated with the need to urinate. Many bodily sensations have an entirely unique quality, different in kind from anything else in our experience: think of orgasms, or the feeling of hitting one's funny bone. There are also experiences associated with proprioception, the sense of where one's body is in space.

Mental imagery. Moving ever inward, toward experiences that are not associated with particular objects in the environment or the body but that are in some sense generated internally, we come to mental images. There is often a rich phenomenology associated with visual images conjured up in one's imagination, though not nearly as detailed as those derived from direct visual perception. There are also the interesting colored patterns that one gets when one closes one's eyes and squints, and the strong after-images that one gets after looking at something bright. One can have similar kinds of auditory "images" conjured up by one's imagination, and even tactile, olfactory, and gustatory images, although these are harder to pin down and their associated qualitative feel is usually fainter.

Conscious thought. Some of the things we think and believe do not have any particular qualitative feel associated with them, but many do. This ap-

plies particularly to explicit, occurrent thoughts that one thinks to oneself, and to various thoughts that affect one's stream of consciousness. It is often hard to pin down just what the qualitative feel of an occurrent thought is, but it is certainly there. There is *so something* it is like to be having such thoughts.

When I think of a lion, for instance, there seems to be a whiff of leonine quality to my phenomenology: what it is like to think of a lion is subtly different from what it is like to think of the Eiffel tower. More obviously, cognitive attitudes such as desire often have a strong phenomenal flavor. Desire seems to exert a phenomenological "bug," and memory often has a qualitative component, as with the experience of nostalgia or regret.

Emotions. Emotions often have distinctive experiences associated with them. The sparkle of a happy mood, the weariness of a deep depression, the red-hot glow of a rush of anger, the melancholy of regret: all of these can affect conscious experience profoundly, although in a much less specific way than localized experiences such as sensations. These emotions pervade and color all of our conscious experiences while they last.

Other more transient feelings lie midway between emotions and the more obviously cognitive aspects of mind. Think of the rush of pleasure one feels when one gets a joke. Another example is the feeling of tension one gets when watching a suspense movie, or when waiting for an important event. The butterflies in one's stomach that can accompany nervousness also fall into this class.

The sense of self. One sometimes feels that there is something to conscious experience that transcends all these specific elements: a kind of background hum, for instance, that is somehow fundamental to consciousness and that is there even when the other components are not. This phenomenology of self is so deep and intangible that it sometimes seems illusory, consisting in nothing over and above specific elements such as those listed above. Still, there seems to be *so something* to the phenomenology of self, even if it is very hard to pin down.

This catalog covers a number of bases, but leaves out as much as it puts in. I have said nothing, for instance, about dreams, arousal and fatigue, intoxication, or the novel character of other drug-induced experiences. There are also rich experiences that derive their character from the combination of two or many of the components described above. I have mentioned the combined effects of smell and taste, but an equally salient example is the combined experience of music and emotion, which interact in a subtle, difficult-to-separate way. I have also left aside the unity of conscious experience—the way that all of these experiences seem to be tied together as the experience of a single experiencer. Like the sense of self, this unity sometimes

seems illusory—it is certainly harder to pin down than any specific experiences—but there is a strong intuition that unity is there.

Sad to say, we will not again be involved this closely with the rich varieties of conscious experience. In addressing the philosophical mysteries associated with conscious experience, a simple color sensation raises the problems as deeply as one's experience of a Bach chorale. The deep issues cut across these varieties in a way that renders consideration of the nature of specific experiences not especially relevant. Still, this brief look at the rich varieties of conscious experience should help focus attention on just what it is that is under discussion, and provides a stock of examples that can be kept in mind during more abstract discussion.⁵

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The Phenomenal and the Psychological Concepts of Mind

Conscious experience is not all there is to the mind. To see this, observe that although modern cognitive science has had almost nothing to say about consciousness, it has had much to say about mind in general. The aspects of mind with which it is concerned are different. Cognitive science deals largely in the explanation of behavior, and insofar as it is concerned with mind at all, it is with mind construed as the internal basis of behavior, and with mental states construed as those states relevant to the causation and explanation of behavior. Such states may or may not be conscious. From the point of view of cognitive science, an internal state responsible for the causation of behavior is equally mental whether it is conscious or not.

At the root of all this lie two quite distinct concepts of mind. The first is the *phenomenal* concept of mind. This is the concept of mind as conscious experience, and of a mental state as a consciously experienced mental state. This is the most perplexing aspect of mind and the aspect on which I will concentrate, but it does not exhaust the mental. The second is the *psychological* concept of mind. This is the concept of mind as the causal or explanatory basis for behavior. A state is mental in this sense if it plays the right sort of causal role in the production of behavior, or at least plays an appropriate role in the explanation of behavior. According to the psychological concept, it matters little whether a mental state has a conscious quality or not. What matters is the role it plays in a cognitive economy.

On the phenomenal concept, mind is characterized by the way it *feels*; on the psychological concept, mind is characterized by what it *does*. There should be no question of competition between these two notions of mind. Neither of them is *the* correct analysis of mind. They cover different phenomena, both of which are quite real.