PERCEPTION

THE BIOLOGICAL FUNCTION OF CONSCIOUSNESS IS TO GUIDE ACTION, and the basic source of guidance is *cognition*. A cognitive process is one devoted to gaining information about reality. Cognitive activities range from an animal's perception of the entities in its immediate environment to man's complex processes of scientific investigation. However primitive or advanced, the cognitive functions of consciousness are directed toward providing awareness of what things *are*, of their *identities*.

(Some phenomena of consciousness, such as emotion and imagination, are not cognitive. E.g., to feel fear is to have an *experience*,¹⁹ not to acquire information. Fear is a reaction to content acquired by other means. Cognitive acts — acts of awareness — are the faculty's base, making possible the rest.)

Sensory perception is an animal's or man's primary form of cognitive contact with the world. Knowledge begins with, develops out of, and is tested against sensory observation. This point is not self-evident, nor is it the view of cognition with which mankind began. Perception's fundamentality was

¹⁹ To Gregory Salmieri I owe the idea of using the term "experiences" to cover both cognitive and noncognitive mental states — e.g., seeing, fearing, and dreaming are all *experiences*, but fearing and dreaming are not acts of *awareness*. In the same vein, it is generally better to use the term "content" instead of "object" in discussing certain noncognitive states. Dreams have contents, but it is misleading to say they have objects (see pp. 282–83).

first identified by Aristotle, but that identification did not become widely accepted until almost 1500 years later, after the long night of the anti-senses Dark and Medieval ages. Even at the dawn of the scientific era, perceptual observation was attacked and derided. How could men like Copernicus and Galileo cast aside the revealed word of God? How could they trust "observations" that were the product of debased bodily senses, or imagine that their limited, finite intellects, without aid from God, could produce anything other than confused, conflicting opinions?

Over a span of centuries, through the writings of Thomas Aquinas (c. 1250), Francis Bacon (1620), and John Locke (1690), the Aristotelian view won out, and mankind entered the Enlightenment era, the Age of Reason. But a counter-attack was soon launched by — of all people — philosophers. Starting with Descartes and bottoming out with Kant, a prominent line of philosophers peddled a secularized version of the old religious notions. "I have therefore found it necessary to deny *knowledge* in order to make room for *faith*," Kant wrote. [CRITIQUE, B, XXXI, Kant's emphasis]

For the open mysticism of the medievals, these philosophers substituted Rationalism — the idea that the intellect can spin out truths on its own, without needing sensory data. For the authority of sacred texts, they substituted the equally baseless notion of innate ideas or innate "categories." Instead of attacking the senses as "of the flesh," they attacked the senses on other grounds, to be discussed below.

Fully liberating the intellect requires rejecting both open mysticism and the secularized form of it, which is Rationalism. One must uphold the efficacy of the unaided individual mind. This means defending both the senses and reason. The remainder of this book is devoted to doing just that. I establish two fundamental points: 1) perception is the base of all knowledge; 2) valid concepts are formed from perception by an *objective* process. The present chapter presents a thoroughly naturalistic, biological view of sensory perception; the remaining chapters present the equivalent for conceptual activities.

Perception as Axiomatic

Sensory perception is the primary and basic form of cognitive contact with the world. An organism born entirely without sense organs would be unconscious. Accordingly, the fact that the senses provide awareness of reality is axiomatic. The issue of the "validity" of the senses does not even arise: sensory awareness is *awareness* — which means that it has the status of a corollary of the axiom of consciousness.

The axiomatic nature of sensory awareness is confirmed by the argument of re-affirmation through denial, the test of axiomaticity. To make any statement denying the senses, one has to understand the terms the statement uses — "senses," "invalid," etc. But the meaning of these terms is learned, directly or indirectly, on the basis of perception. Without the senses' basic cognitive contact with reality, we could not have any concepts, including those used to claim that the senses are invalid. Thus, the attack on the senses constitutes concept-stealing on an unparalleled scale. Without perception, we would be unconscious, like vegetables; vegetables cannot ponder the validity of perception.

Because sensory awareness is axiomatic, philosophy, as distinguished from science, has very little of a positive nature to say about it. Much, however, has to be said to correct misunderstandings created by wrong philosophic theories of sense-perception, theories that have led philosophers down innumerable blind alleys.

The major source of error in this regard comes from confusing perception with lower or higher levels of awareness—i.e., confusing perception with sensation or with conceptual cognition.

PERCEPTION VS. SENSATION

Surveying the range of animal life on the planet, one cannot say with any confidence where on the evolutionary scale consciousness first appears. We know that we ourselves are conscious, and it would be bizarre to question the existence of consciousness in the higher animals, such as dogs and cats. But what about jellyfish, which have a "neural net," or flatworms, which have a primitive brain?²⁰ Perhaps neuroscience will someday provide a better understanding of the physical factors that give rise to consciousness, and that understanding will settle the question of which of the lower organisms are conscious and which are not. But for now such questions remain open and are for science, not philosophy, to investigate.

²⁰ On what distinguishes a brain from a less developed group of neurons, see Sarnat, 2002. In another article, Sarnat notes that the flatworm, *planaria*, is "the simplest living animal having a body plan of bilateral symmetry and cephalization." [SARNAT, 1985]

As intriguing as these scientific questions are, they have zero import for and impact upon philosophy, which is concerned with *man's* consciousness. Non-human consciousness has philosophic significance only insofar as it illuminates, by contrast, the nature of man's consciousness.

(The scientist does, however, need the right philosophic base from which to proceed in studying sensory awareness and for investigating the mind-brain relationship. Scientists work from a philosophic base, and much of the research that scientists have done on sense-perception has been distorted by wrong philosophic premises. For example, the premise of materialism has led researchers to attempt to reduce perception to brain events and overt behavior, as if *awareness* did not exist. Yet these scientists claim to be aware of the people they study, the data they collect, and the content of their own theories.)

Among animals with sensory awareness, the simplest possess only the faculty of sensation.

A "sensation," as I use that term, is the most primitive form of conscious response, the response to energy impinging on receptors, not to objects in a perceived world.

The crayfish, for example, has light-sensitive cells near the end of its tail. Crayfish need to hide themselves from predators by moving into crevices or under rocks. By detecting light hitting the end of its tail, the animal can ensure that not just its head but its whole body is hidden: when its head is in darkness but its tail is still receiving light, the crayfish will crawl forward. The crayfish does not *see* any objects with its tail receptors — the sensory equipment is too primitive for that — but it responds to light vs. darkness, and if that response is a conscious one, it is as sensations not percepts that it experiences the illumination level.

A sensation is a conscious response to stimulation at the receptors, and that response lasts only as long as the stimulus is applied. A sensation is thus stimulus-bound: it is a sense or feeling, in response to what is currently stimulating the receptors.

The higher animals have evolved a much more potent form of awareness: *perception*. There are a number of features that distinguish perception from mere sensations.

1. Perception is awareness of entities — of things (including their characteristics). Whereas the crayfish's tail-spot only discriminates brightness from darkness, human vision provides man with awareness not of stimuli but of the objects in the world, the objects that are responsible for the patterns

in the light received by the eye. We see trees, dogs, books, clouds — rather than just discriminating a general level of illumination. Human eyes, like the crayfish's tail spot, respond to light, but the human visual system is able to detect and exploit patterns in the light. The nature of these patterns is determined by the layout of the objects that reflected the light. Detecting these patterns enables the visual system to discriminate entities from each other. Thus, the content of visual perception is a world of entities. Vision contrasts not light with darkness but a lighter and/or differently colored *thing* against the other things in its background.

The same is true of hearing and touch. We hear the actions of *things*. Despite some marginal cases, as when one is aware of a background hum whose location and source are not apprehended, the normal case is hearing things that make sounds, not just the sounds: a slamming door, a barking dog, the click of keys on the computer keyboard.

Touch also discriminates entities, unless the conditions of perception are impoverished. We feel the table, the spoon in our hands, the keyboard under our fingers — all of which is quite different from simply feeling pressure on our skin. Even with eyes closed, we can explore by touch the objects within reach. Touch perception, as opposed to mere feelings on the skin, is an active, exploratory process, one that presents us with *entities*.

Taste and smell are more primitive, closer to the level of sensations. But they occur in a *perceptual context*: when we bite into a peach and taste it, we are already aware by sight and touch of the peach as an entity in the world and of the peach morsel as an entity in our mouth. Similarly, when we smell something, it is part of a perception of things emitting odors in a perceptuallevel world. (Animals with a keen sense of smell, such as dogs, seem to have not just smell sensations but some form of perceptual awareness of a scent trail as an entity.) What perception provides is awareness of *entities*.

2. A point essential to understanding perception is that *perception is spatial;* it presents a world of entities *arrayed in space* — i.e., in their relative positions. We do not perceive one isolated entity at a time, but *a spread-out world of entities*, each entity being discriminated from the others that are next to it. Philosophers are apt to take as their example the perception of a single object: we see "an apple," for example. But there is no solitary apple floating in a void. In reality, apples exist as part of the spatially extended world given in perception. (See the two illustrations on the following page.)

The three-dimensional spatial array given in perception is what fundamentally distinguishes perception from sensation. It is not merely that perception (especially vision) gives entities, but also that perception provides the co-presence of all the entities that the animal can act on or be affected by. We see in one spread the entire scene of entities.

Contrast discriminating spatially arrayed entities with discriminating the



taste of one flavor element, say cinnamon, from others in what one is tasting. Such discrimination does not rise to the level of *perceiving* the cinnamon, precisely because the cinnamon is not given as *spatially* discriminated from the other flavors that one is also tasting. The perceptual world is spatially arrayed.

The space given in perception is not the abstract space of the geometer, with its three Cartesian axes, but the *relative position of entities*.

As psychologist J. J. Gibson stresses, "visual space, unlike abstract geometrical space, is perceived only by virtue of what fills it." [GIBSON 1950, 5]

