PLEASE GRADE PASS/FAIL

T H E C O N S T R U C T I O N

O F R E A L I T Y :

A N I N T E R P R E T A T I O N

Johanna Shapiro
Psychology 172
February 12, 1974

Historically, perception was viewed as a passive intermediary through which a fixed reality was communicated to the individual. The philosophical implications of this view were profound. Because perception was regarded less as a process and more as a given, the world could be interpreted in an absolute fashion: the nature of reality was fixed, discoverable, and open to independent confirmation by the senses. Visual data was regarded as irrefutable.

However, scientific investigation into the process of perception has led to the rejection of this model. The discovery of visual paradox, illusion, and distortion has suggested a modern view of perception which is active and constructionist, rather than passive. Instead of merely transmitting information, the visual process is seen as engaging in problem-solving, hypothesis-testing, indeed in a primitive form of thought (cf. the title of Gregory's book).

Certainly the evidence seems to confirm this point of view. While there is a striking discrepancy between the distal object and its proximal representation on the retina, our subjective impression of the world corresponds much more closely to the former than to the latter (see Shepard, lecture #2). Indeed, in direct vision, unlike viewing a picture, we do not simultaneously experience both the pattern and its interpretation. Although the retinal image is the only thing which <u>actually</u> exists on the eye, we do not experience it at all. Instead of perceiving what we see, we perceive only what we believe we see.

This suggests that the brain must form certain object-hypotheses, based on information (possibly innate - as posited by the Gestalt psychologists - or learned) stored in the brain. Although the two-dimensional, partial data we receive is open to countless three-dimensional interpretations, usually we are able to decide in favor of one solution. Decisions are based on the existence of certain perceptual cues (such as linear perspective or gradients of texture) through which we make inferences about the distance, orientation, size, shape,

and color of the object. Paradoxes such as the Necker cube and figure-ground reversal suggest the existence of equally likely problem solutions. That such changes in perception occur spontaneously, independent of eye movement, implies that the decision-making process occurs in the brain, and is not dependent on additional input based on a shift in retinal image.

Thus, far from being an accurate representation of reality, a retinal image is more analogous to words on a page. We rarely see words as simply a pattern; rather, we interpret them automatically as meaningful symbols. Similarly, we tend to see meaningfully. The development of such a skill has obvious survival value. Language and writing are a means of rapidly processing vast quantities of information. Perception operates in much the same way. We are not forced to duplicate the outside world through our visual process. Rather, we can rely on cues, often as ambiguous as word symbols, which we are able to interpret without waiting for more complete information.

The above discussion attempts to justify a view of perception as functioning much like language, in a symbolic rather than an actual fashion. What are the implications of this position? If perception is a form of thought, especially inductive rather than deductive thought (see the Gregory discussion), it must be treated as such. Thought is never perfectly reliable, but is subject to certain fallibilities and rigidities. Some analogous flaws in perceptual "thought" are discussed below.

1) To the extent that perception is learned, i.e., based on the development of a storehouse of object-hypotheses, the experience of reality contains a significant subjective component. Thus, individual perception is an inadequate tool in making generalizations about reality. 2) Our perceptual process encourages us to select the most likely object-hypothesis. This means that we will not necessarily see what is there, but what is most likely to be there (cf. Bruner and Postman, 1951, subject perception of a red ace of spades as a red ace of hearts). Thus vision tends to give us a conventional, probabilistic view of the world. 3) Worse, perception cannot always correct its errors after input from other sensory or cognitive sources. For example, a three-dimensional Necker cube will still reverse