

PRACTICAL PERCEPTION

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Intro to basic distinctions in the field

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Last updated: 2015 Feb 12

Category: Perceiving

Subcategory: Depth & Distance

Summary: Right from the beginning, it is vital to recognize that the science of perception often requires particular attention to the way one uses language. Although the confusion of everyday terms with technical ones can create problems in understanding any science, avoiding such mistakes can be unusually difficult when studying perception.

Perceiving involves the ways in which we *experience* the **physical** world around us and our own place/orientation within it. To be able to discuss the *relationship* of our subjective world to the physical world, we must obviously distinguish these two contexts. However, we may also need to consider an additional distinction if we wish to discuss how we **think** about, or attempt to describe, such relationships themselves.

One of the difficulties in studying perception, as in studying many of the other areas of psychology, is learning to understand and use the specialized terminology correctly. This learning process is often complicated by the seeming familiarity of the words used. The common usage of a term and its technical meaning, however, may not be the same. Hence, it is important to be clear in one's choice of words for describing psychological phenomena and concepts.

A particular problem in the study of perception concerns the absolute necessity of distinguishing between physical variables (dimensions of the real environment such as light intensity, sound level, frequency, physical distance, etc.) and the associated perceptual variables (dimensions of experience such as brightness, loudness, pitch, apparent distance, etc.). Sometimes more than two levels of conceptualization are required, but there are always at least two – the physical and the perceptual.

Physical variables are what you can directly measure or manipulate with the appropriate equipment; perceptual variables involve your *experiences* of the events around you. Perceptual experiences are based upon the activity of your various sensory systems (vision, hearing, etc.) and are often correlated with the changes in the physical world. They are, nevertheless, *conceptually* distinct from those physical events. Before one can talk about perception in a meaningful way, it is necessary to establish a clear distinction between physical and perceptual in one's thinking and one's vocabulary.

As a case in point, take the simple word "color" as it might occur in the context of decorating a room in one's home.

Five ways the term "color" is often used (imprecisely) in describing physical variables relevant for this situation:

1. The initial surface of your wall (sheetrock vs "greenboard," light wood vs dark, etc.), and/or
2. The paint or other finishing materials, and/or
3. The spectral characteristics (wavelengths & strengths) of the light that will illuminate the surface, and/or
4. The spectral characteristics of the light reflected from the surface, and/or
5. The spectral characteristics of the light reaching the eyes and affecting vision.

Two ways the term "color" might be used in describing perceptual variables:

1. The appearance of the illumination, and/or
2. The appearance of the surface.

The enormous variety of names you encounter when you try to select the particular paint you wish to buy indicates a frequently unsatisfactory effort to describe how different physical properties of the paint or finish will affect appearance. The limited usefulness of the names given to various paints is reflected in the wide-spread use of actual samples, so that one may ignore the names and simply say "This is the color I want."

Now.....consider two descriptive alternatives:

"If illuminated by daylight, this wall will reflect more of the mid-wavelengths of the visible spectrum. Such light will cause a particular pattern of activity in the cone receptors of my eyes and the surface will appear green to a person with normal color vision."

Or perhaps you'd prefer.

"The wall is green, because it's covered with green paint. Such a surface reflects green light to my eyes and makes the surface appear green."

Which of these descriptions is at least *potentially* more informative? Which would allow a student to build upon it, to reach a fuller understanding of vision?

The preceding discussion should not be taken to indicate that uniformly correct usage is always easy. Sometimes even people well practiced in the language of perception use a word in its common (non-discriminating) manner, rather than with technical precision. Sometimes the English language itself simply does not provide enough convenient

alternatives to allow the exclusive use of separate terms for physical and perceptual variables.

These limitations in our language, however, in no way relieve one from striving toward a clear distinction for any context in which a failure to make the distinction can lead to ambiguity. Sometimes we can achieve our goal by being more precise (e.g., saying "wavelength," when we mean wavelength, rather than suggesting that light – of whatever wavelength – physically possesses an actual color of any sort). Sometimes, we must simply fall back on appropriate adjectives, e.g., "apparent or perceived color," if we wish to emphasize that we are talking about how a surface appears. It's not easy, but it is arguably crucial.

See the article [*What are the three domains of discussion?*](#) for further examination and extension of this issue.

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