

What are the three domains of discussion?

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Summary: A separate article on this Site ([Intro to basic distinctions in the field](#)) introduced the fundamental requirement that one must take care to use the language of perception carefully. I noted that in the science of perception, it is crucial to separate precise, technical meanings of terms from similar (but often ambiguous) everyday meanings. The current article expands on this concern. Additionally, two separate articles discuss how such distinctions clarify the study of spatial perception (see [What are the domains of distance?](#) and [What are the domains of size?](#)).

One may argue that any serious discussion in the field of perception (and, often, in psychology in general) must begin with the recognition that there are always distinctions among *at least three domains*: the physical world, the world of experience, and the world of thinking.

Where we exist

To begin, we shall assume the existence of an external physical world with properties and organization that exist independent of how people perceive or think. This may seem obvious to the typical person on the street, but there are those who argue alternative viewpoints. Currently, some philosophers may take the position that *reality* is itself a creation – a construct whose properties and history are subject to the beliefs, desires and culture of each inhabitant. (An earlier position, seldom espoused today, but known as *solipsism*, proposed the view that everything was – in effect – within your own imagination; there was neither an external environment, nor indeed any way to prove that other people or objects were indeed outside yourself.)

For practical purposes, we shall nevertheless assume that we exist in an external reality that we'll refer to as the **Physical World**. Certainly, if one drives off a cliff in any vehicle that does not include wings, one should expect that arrival at the bottom would provide a very stern reminder of the reality of physical existence.

Where we seem to be

There is also a world that includes all of our *experiences* of reality. Such experiences may be reasonably correct. Some scientists have argued that experience must commonly provide enough correct information to allow us to behave effectively and to live long enough to successfully reproduce. Others may generally agree, despite emphasizing the numerous sorts of perceptual errors that do occur.

We can call our second domain of discussion the **Perceived World** or the **Apparent World**. Whether particular percepts are true or false, this world describes our *subjective* reality as we experience it. (At the Practical Perception website, we will consider the above terms to be synonyms – to each other, and to such variations as the Subjective World, the World of Appearance, the World of Experience, the Perceptual World, etc.)

What we may think about

The third domain of discussion is a bit more difficult to define. For want of a better term, I shall call it the **Cognitive World**. It encompasses most of what we consider under such topics as thinking, memory, belief, expectation, communication, etc. This obviously includes a lot of our mental activities – other than our immediate subjective experience. Although many scientists like to consider perception as a sub-topic in the field of cognition, I will argue that one must keep these domains *conceptually* separate.

This does not mean that what we perceive is independent of the ways we think or remember or of any other specific neurological event. Indeed, my argument is that we cannot even consider how conscious and unconscious *cognitive* processes affect our perceptual experiences, *unless* such experiences are conceptually distinct from other cognitive processes.

Arguments for separation of the three domains

To discuss the phenomena that make up the fields of perception and cognition, it is crucial that these domains be conceptually separate. Let's use the well-known Müller-Lyer illusion as a reference.

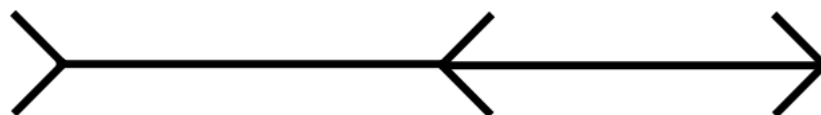


Figure 1

Suppose we are interested in discussing this phenomenon. We might begin by assuring ourselves that the physical length of the left-hand and the right-hand horizontal lines are equal. (Regardless of their overall size on your display, you may measure each with an ordinary ruler, to confirm their *physical* equality.)

Suppose now that you are asked the question, "Do the two horizontal lines *appear* to be the same length?" If your perceptual systems are like those of most people, you will probably answer, "No. The left-hand line *seems* longer than the right-hand one." Regardless of anything else, we need to distinguish this perceptual experience from the physical reality, if we are to talk about the illusion at any level. We cannot proceed unless we keep notions of the physical and the apparent conceptually distinct.

So, why isn't this sufficient? What else do we need?

We need at least one further domain - the Cognitive World. Consider some possible issue that might arise, if one wanted to investigate the Müller-Lyer illusion.

Is it possible that a student observer might *know* the true state of the lines and reply falsely that the lines look equal, despite perceiving otherwise? Or perhaps a disgruntled observer decides to throw us off the track by purposely lying. How shall we discuss such answers, in relation to the well-known illusion? One answer is that we must recognize that not all descriptions of percepts reflect how an observer is actually experiencing them. Verbal reports may, of course, be influenced by non-perceptual processes. However, this simply confirms that we *must* have a way to consider these reports by reference to something other than either the Physical World or the Perceptual World.

As another example, suppose that we asked one random group of observers to describe the apparent difference in length as a percentage (e.g., the left line appears 20% longer than the right line). We take a second random group of observers, have them look briefly at the same display, and then to look away. Perhaps 30-40 seconds later, we ask these observers to make the same sort of estimate. If the average results differ, how are we to discuss them?

Note that the basis for any differences is not the point. For simplicity, and because there are data that may support the notion, let's suppose that the length judgments occur differently when one is directly observing the stimuli vs trying to compare the memories of the two lines.

In another experimental example, suppose we present *a priori* information to some observers that there really isn't as strong an illusion as the textbooks usually suggest. Might a convincing argument alter either the observers' percepts or perhaps what observers will report?

If the judgments differ in any of the foregoing examples, we would certainly wish to talk about the reason(s). But how can we do so, without a domain of discussion that includes more than the physical reality and more than the immediate percept of the two lines in our Figure 1?

And, finally, might we ask the broader question of "Why are people often so intrigued by optical illusions, including the Müller-Lyer and so many others?" (Note that the

fascination is itself beyond the mere existence of the error; it is instead the basis for the profound interest by both scientists and the general public in such phenomena.)

Basically, to keep from getting confused in the above scenarios, it would be a great aid if we could refer to conscious decisions, to remembered lines and to the effects of beliefs and expectations upon perception. Although these sorts of factors could affect appearance, they represent a domain of phenomena that is different than the immediate experience itself.

For example, how can we consider intentional fabrications, if there isn't any difference between experience and report? How can we talk about the comparison of memories vs the comparison of visible lines, if a perceived line and a remembered line are the same thing? How can the influence of expectation be considered, if the expected length and the apparent length are not conceptually separate? Why should a correct percept not be exactly as interesting as a false one?

Using the three Domains

In summary, the study of perception is difficult. It only becomes more so, if we allow the different domains to be used interchangeably. Among some of the questions that people have asked about perceptual phenomena are:

- | | |
|---|--------------------------|
| 1. How accurate are our perceptions? | (physical vs perceptual) |
| 2. Why are people often intrigued by illusions? | (perceived vs cognitive) |
| 3. Can expectation/belief affect appearance? | (cognitive → perception) |
| 4. Can appearances alter beliefs? | (perception → cognition) |

Concern with the accuracy of our percepts, of course, has had a very long history in the field of psychophysics. In practical situations, it can be urgently important whether we or not we correctly respond to the physical reality. (Whether we would simply behave automatically, based upon the information gained through our sensory systems, or might be able to accurately describe our environment, if asked, is immaterial to my present point.)

With respect to item #2, I would argue that people often find illusions of many sorts to be interesting, because what they perceive can differ so radically from what they may know to be physically true – from academic learning or from personal measurement.

Item #3 was the basis for the hypothesized Müller-Lyer experiment, but one could extend it in many directions, even into social psychology and the effects of stereotypes on the perception of other people, their personalities and motivations.

Ultimately, the point is that many (most?) of the interesting questions in perception, and in psychology as a whole, cannot be asked – let alone answered – unless we make an effort to maintain the conceptual distinctions among the three Domains of Discussion. We cannot afford to muddy the waters by inadvertently talking about topics from one

domain that properly belong in another. If we do so, our discussion may confuse, rather than enlighten.

Note: I have argued for maintaining conceptual distinctions among the physical, perceptual and cognitive worlds. Others, such as Professor Irvin Rock, in his book on *The Nature of Perceptual Adaptation* (1966, Basic Books, New York, NY), argued that we need yet a fourth domain – a distinction that one would logically locate between what I've labeled "physical" and "perceptual." He described this fourth domain as "registered" – a *domain* involving the initial steps through which our perceptual (sensory) systems acknowledge some portion of the external patterns of energy arriving at our eyes, ears, etc.. These events would thus fall between the physical world of the energy itself and the full-blown world of subjective experience.

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