

## PSYCO 354 "Foundations Of Cognitive Science" Quiz 10

Define 'problem of underdetermination'. Why is the problem of underdetermination important to cognitive science?

Name:

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The problem of underdetermination (in vision) is also known as the poverty of the stimulus. It is the situation that arises when the information reaching the eye (the proximal stimulus) is not sufficient to uniquely determine visual experience. In other words, the problem of underdetermination means that any single proximal stimulus is consistent with many different possible interpretations, only one of which is correct.

This problem is of serious concern to cognitive scientists concerned with vision or visual cognition because human subjects do not appear to experience this problem. That is, in spite of the poverty of the stimulus, we generally have unique (and correct) visual experiences of the world. This means that there must be additional processes that add information to the proximal stimulus to enable a unique interpretation to be achieved. Cognitive science is interested in proposing theories about these additional processes, which might range from performing unconscious inference to exploiting natural constraints. The kinds of theories proposed shed light upon the approaches taken by different schools of thought in cognitive science.