

Experience, Understanding and Creativity

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1 Experience and Creativity

We outline a framework of cognition and perception that makes a distinction between experience, understanding and explanation, as shown in Fig. 1. Experience refers to immediate perceptual awareness. Understanding occurs when the experience is incorporated into some internal model, by relating to past experiences etc. Experiences and understanding are largely subjective. We get to the explanation level when the experience and the understanding are formulated in a language or some other communication medium so that it can be shared. Thus, experience is understood, and understanding is communicated through explanation.

The key point of the model is that the flow of information between these three levels proceeds in both directions. So though experience leads to understanding, prior understanding effects experience. Similarly, though understanding leads to explanation, prior explanation effects understanding. Often, the influence of experience on understanding, and the influence of understanding on explanation, is referred to as bottom-up processing, and the influence of explanation on understanding, and the influence of understanding on experience, is referred to as top-down processing.

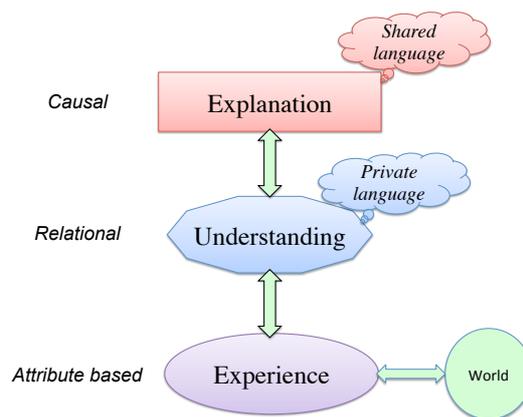


Fig. 1: A model of perception and cognition

This is known as the interaction model of cognition in that the conceptual understanding of the world (or the environment) is seen to arise as a result of interaction between concepts and percepts. The origin of this view can be traced to Kant, who argued against purely empirical accounts (purely bottom-up processing), such as John Locke, and also against purely conceptual accounts (purely top-down processing), such as Plato, to conclude that concepts without percepts are empty, and percepts without concepts are blind. Later on, Cassirer argued that a multiplicity of symbolic systems (or worlds) is possible, and that they might not be reducible to one another. (See also Goodman 1978.) Gestalt psychologists showed that mind imposes its own organization on the perceptual stimuli. Piaget provided further evidence that cognition is a constructive process in which a cognitive agent structures the world based on its actual and potential actions. (See also Indurkha 1992; O'Regan 2001).

More and more evidence has emerged to show that one's beliefs and expectations have a remarkable influence on one's perception. For example, Lang *et al.* (1975) showed that the aggressive behavior of participants after drinking was affected by what they thought they were drinking rather than what they actually drank. Brochet (2001) found similar effect with wine tasting: the participants' perception of taste depended on the bottle from which the wine was poured, even though it was the same wine. All this points to the fact that our expectations, past experience, and understanding influences our perception.

2. Conceptualization and loss of information

As we go from experience to understanding to explanation, there is invariably a loss of information. This is because an experience can be understood in many ways, and an understanding can be explained in different ways. So once a particular understanding is chosen, and a particular explanation is chosen, the alternative ways for understanding and explanation are lost. This loss of information can be understood in the following way. When an object is described as a 'chair', many specific properties of that chair, like its color, style, kind of material etc. are lost. Of course, we could make our conceptualization of the object more specific — it is a red chair, made of teak, with a high back, and so on — but no matter how detailed the conceptual representation is made, there is always some aspects of the object that are excluded, and it is these excluded aspects that constitute the *information lost in the conceptualization*. (This precisely is the theme of a short story *Del Rigor en la Ciencia (On Exactitude in Science)*, by Jorge Luis Borges and Adolfo Casares.)

3. Crux of Creativity: Re-conceptualization

In the model of cognition we have sketched above, we can say that most of the time when we have an experience, we habitually understand in a certain way; and given an understanding, we habitually explain it in a certain way. This comes from the top-down influences that reflect cultural and habitual conditioning. This is graphically shown in Fig. 2.

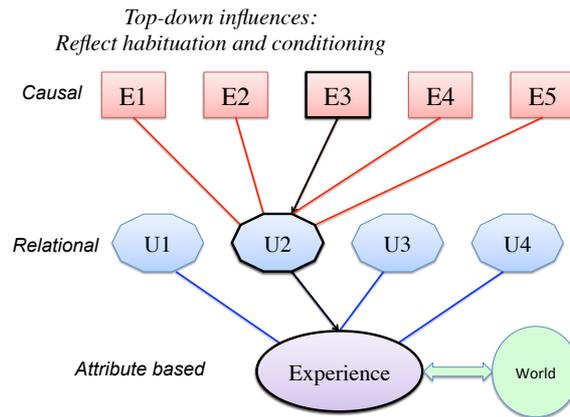


Fig. 2: Top-down influences: Reflect habituation and conditioning

The information that is lost in this habitual conceptualization is something that was perhaps not relevant to the cognitive agent (or to the society of the cognitive agents) in their past interactions. However, this information may become crucial to solve a new problem, and then the habitual understanding and explanations become hopelessly inadequate. Creativity, then, lies in alternate ways to understand an experience; and alternate ways to explain an understanding. In order to succeed, it must undo the effects of top-down conditioning, move closer to perception, and focus on the experience (Fig. 3). Needless to say, this is a cognitively difficult task, for we are strongly conditioned by our culture and habits, and it is not so easy to break away from it. Approaches such as meditation that focus on sensation, art lessons that focus on seeing or listening, metaphors that focus on inter-domain or cross-modal connections, are all designed to help overcome this bias and conditioning.

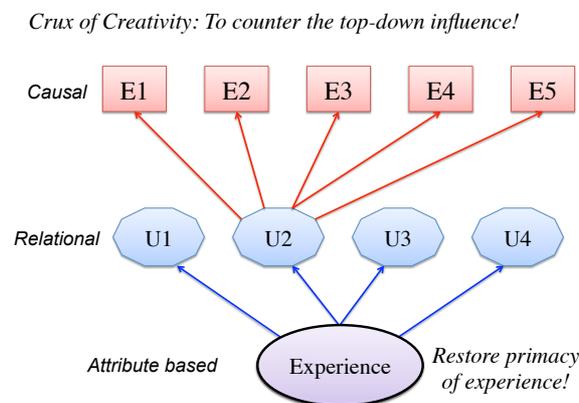


Fig. 3: Crux of Creativity: To counter the top-down influence!

This process of re-conceptualization allows one to recover some of the information that was lost in the habitual understanding and explanation. This can be useful for aesthetic pleasure, in art and poetry; for making new artifacts, in science and technology; or for achieving some desired situation, in problem solving. This, in the

model we are proposing here, is the crux of creativity. (See also Indurkha 1999; 2006; 2010.)

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