

Situated Conceptualization

Barrett, Wilson-Mendenhall, & Barsalou (2014)

For the last several centuries, philosophers, and later, psychologists, have assumed that the mind works like a machine – a printing press, a switchboard, a computer. According to the machine metaphor, the mind consists of a number of functionally distinct processes (mental “modules” or “faculties”) that interact with one another; if separated, these processes would still retain their identity and function. The machine metaphor dictates a particular view of mental causation: “psychological process A” localized in one swath of brain tissue (a region or a network) causes a change in a separate and distinct “psychological process B” localized in another swath of tissue (see Figure 1). A good example of the machine metaphor at work can be found in the science of emotion regulation. It is largely assumed, for example, that an emotion, like fear, is created by one process that is computed in one part of the brain (usually in subcortical limbic or paralimbic cortex) that is regulated by executive or other cognitive processes located elsewhere in the brain (typically somewhere in prefrontal cortex). In the process model of emotion regulation (Gross, this volume), an emotion can be triggered first and then is subsequently regulated (e.g., you are walking in the woods, and a fuzzy bee buzzing around your head triggers a state of fear, which you then regulate by suppressing the urge to run and by distracting yourself with a close examination of the local scenery, such as an interestingly shaped rock or tree). Regulation might also occur before the response occurs, preempting the emotion from ever taking place (e.g., before you start your walk, you might remind yourself that bees are a part of nature, pollinate beautiful flowers, and make delicious honey). Regardless of which comes first, the emotion is separate from its regulation.

In the last several years, scientists have come to question whether the mind and brain work like a machine with separate, interacting bits and pieces (e.g. Barrett, 2009) and assumptions about modularity, even in sensory cortices, is strongly in question. As a consequence, other working metaphors for the mind and the brain are more apt – say, molecules that are constructed of atoms, chamber music emerging from the interplay of instruments, or recipes from a well-stocked pantry full of ingredients. These metaphor begins with a deceptively simple observation: during every moment of waking life, the brain takes in sensory input captured from the world outside the skin (light, vibrations, odors, etc.) and sensations captured from within the body that holds the brain (the internal “milieu”), and uses knowledge from prior experience (also variously called concepts, memories, associations, beliefs, predictions, etc.) -stored in association cortex and in sensory neurons and subcortical regions – and makes those sensory inputs meaningful. This occurs by creating situated conceptualizations (Barrett, 2006, 2012; Barsalou, 2003, 2009; Barsalou, Niedenthal, Barbey, & Ruppert, 2003; Wilson-Mendenhall, Barrett, Simmons, & Barsalou, 2011). **A situated conceptualization** *initially is like a prediction of what sensory input stands for in the world (i.e., object or event identification), which properties are salient (i.e., are deserving of attention), what to do about that sensory input (i.e., a predicted action) and what the homeostatic and*

metabolic consequences will be (i.e., affective changes). From our perspective, **the brain's architecture can be thought of as a situated conceptualization generator producing the individual brain states that correspond to each individual mental state**, such as an individual instance of fear or an instance of regulation.

Building on the kitchen metaphor (in Barrett, 2009), we have proposed that each brain state, each situated conceptualization, can be understood in terms of more core systems (i.e., the ingredients), which can themselves be characterized both at the psychological level (e.g., Barrett, 2006, 2012) and at the level of brain networks (e.g., Barrett & Satpute, 2013; Lindquist & Barrett, 2012). These core systems are like the “mental state variables” (see Salzman & Fusi, 2010), facets or core systems that describe the brain state. As basic “ingredients” of the mind, they are necessary for but not specific to emotion generation or to emotion regulation per se, just as flour and salt are necessary to for but not specific to bread. As the brain transitions from one state to another, mental states ebb and flow, and people give special names to these different states. We refer to this as a psychological constructionist, or merely a constructionist, approach to the mind and brain. From this constructionist point of view, emotions are not unique mental states that are caused by dedicated mechanisms, to modified by another set of dedicated regulatory mechanisms. Instead, emotions emerge, and regulation occurs, as the consequence of an ongoing, continually modified constructive process that makes sensory inputs meaningful. Every mental state, including an emotion both before and after regulation is said to have occurred, is a situated conceptualization, constructed from assemblies of neurons that perform sensory, conceptual, attentional and action functions.

In this chapter, we will examine in more detail the concept of emotion regulation as resulting from the never ending sequence of situated conceptualizations that occur as the brain transitions from one state to another. First, we introduce the general idea that knowledge (as reactivation and recombination of prior experience) gives meaning to incoming sensory input and is itself enactive (i.e., adds novel features via perceptual inference). Next, we link these notions to the idea of situated conceptualizations from the literature on concepts and categories, and discuss how we have broadened it into a general proposal of constructed mental states that involve making meaning of sensory input and even modifying sensations during the process. We then discuss how emotions might be understood as arising from situated conceptualizations, and how emotion regulation might be reconceptualized as changing shifting from one situated conceptualization to another. Finally, we use this framework to consider how emotional dysregulation might be understood in terms of the situated conceptualizations that are constructed.

Source:

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