Pretty much everyone agrees that emotions play a role in virtually all aspects of mental life. What remains a puzzle, however, is how to define emotions in scientific terms as psychological and natural phenomena. Current research is, ironically, guided by a scientific paradigm that is grounded in human experience. People experience fear and see it in others, so scientists assume there must be a literal (modular) neural circuit for fear in the mammalian brain. Rats freeze when they hear a tone paired with a foot shock, so they are presumed to be in a state of fear (versus surprise, anger, or even a general state of alarm) and undergoing “fear learning.” Scientists also presume that a map of the neural circuitry of freezing behavior will yield a neural mechanism for fear that is largely preserved in humans, and a decade of neuroimaging studies have focused on locating a homologous neural circuit in the human brain. In the last five years, I have traced the roots of this “natural kind” model, conducted a comprehensive review of the literature to examine its veracity, and found it wanting. In response, I have fashioned a new systems-level model, called the Conceptual Act Model. In this model, fear, sadness, happiness, and in fact all the mental events that people name with emotion words are not basic building blocks in the mind or in the brain. Instead, these mental events result from the interplay of at least two more basic psychological ingredients, or psychological primitives: core affect (hedonic states with some degree of arousal) and categorization (using conceptual knowledge about emotion). Individual and cultural differences in emotion can be understood in terms of variation in these ingredients or their interaction. This model parsimoniously incorporates neuroscience findings from rats, primates, and humans, as well as the psychological findings, and outlines the mechanisms that produce the range and variety of behavioral and introspective instances that people call “emotion.” It also provides a general framework for mapping mind to brain.

Review Article:

Further references: see http://www2.bc.edu/~barretli/


