

# Emotion, Cognition, and the Classical Elements of Mind

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## Abstract

The scientific study of emotion faces a potentially serious problem: after over a hundred years of psychological study, we lack consensus regarding the very definition of emotion. We propose that part of the problem may be the tendency to define emotion in contrast to cognition, rather than viewing both “emotion” and “cognition” as being comprised of more elemental processes. We argue that considering emotion as a type of cognition (viewed broadly as information processing) may provide an understanding of the mechanisms underlying domains that are traditionally thought to be qualitatively distinct.

## Keywords

cognition, constructivism, emotion

The scientific study of emotion faces a potentially serious problem: after over a hundred years of psychological study, we lack consensus regarding the very definition of emotion. We agree that without agreement on what is being studied, emotion research will continue to be challenging. Yet we also believe the problem of defining “emotion” or “emotional episode” is even deeper than typically proposed. Whereas much scientific debate concerns which of the current models of emotion is correct, we suggest that a broader reconceptualization of emotion may be necessary. Specifically, definitions of “emotion” often include an implicit (or even explicit) contrast with “cognition.” We propose that by conceptualizing emotion as fundamentally different from cognition, unnecessary conceptual baggage is added. Indeed, this contrast may be at the heart of some of the current disagreement.

In considering why it may be necessary to question the traditional divisions of mind, parallels can be made with the transformation from classical (Aristotelian) physics to modern

physics. Until the 17th century, the basic elements of terrestrial matter were thought to be fire, water, earth, and air. These categories were easily observable and considered to be basic functional units: The essence of fire was entirely different from the essence of water. This model of physics was eventually abandoned in favor of a new approach that allowed for more fundamental units common to a variety of observable phenomena, an approach which gave rise to discoveries that the ancients could not possibly envision (e.g., subatomic particles) and theories that would have previously appeared absurd (e.g., multiple dimensions of space, the Big Bang). As a result, we now understand much more about our physical world. This transformation required abandoning directly observable categories as the basis of scientific inquiry in favor of more sophisticated theories that may not, on their surface, fit intuitive impressions.

Yet although our scientific understanding of the physical world has radically progressed since the time of Aristotle, many of the assumptions that concern the human mind have remained unchanged. Just as the ancients subdivided the physical world into useful common-sense groupings, they also created subjectively meaningful categories of mind that are still the basis for psychological study. For example, the distinction between our “animal natures” (emotional and/or reflexive processes) and our more refined uniquely “human natures” (cognitive and/or reflective processes) remains center stage for most psychological theories (see Ekman & Davidson, 1994, for examples). Even in models that allow cognition to influence emotion, or emotion to influence cognition, the two are still thought to be qualitatively different kinds. Though these mental states may feel subjectively real to us, it is possible that just as the artificial divisions between earth and water had to be discarded in favor of a deeper understanding of physical phenomena, so too should some of our common-sense categories of mind.

In our iterative reprocessing model (Cunningham & Zelazo, 2007), and particularly its affective trajectories hypothesis (Kirkland & Cunningham, 2011), we use a very general definition of cognition informed by cognitive science. Cognition can simply be defined as information processing. On such a view, just as memory or attention have multiple operations (inputs, transformations, and outputs; O'Reilly, 1998), so does emotion. In other words, emotional responses may arise from the same processes that give rise to memory and attention. Rather than questioning how emotion can be defined differently from cognition, it may be more fruitful to consider what sorts of cognitive operations are typically labeled as emotional. For example, as a starting point, "emotional" cognitions likely contain an evaluative component that represents changes in the degree to which things are going well for the individual. We label as emotional episodes both changes in well-being (things getting better [joy] or worse [sadness]) and predictions that imply impending changes in well-being (hope or fear; Kirkland & Cunningham, 2012). Felt emotions are the mobilization of cognitive and physiological resources that are involved in detecting and responding to these changes. In our view, emotions are not physically discrete entities, but reflect our labels for the changing dynamics of valenced cognitive processing (see also Barrett, 2006).

As the target articles in this special section point out, the field of affective science is hindered by an inability to pinpoint the object of its study. Although we agree that definitions are important, we disagree that heterogeneity of current definitions is necessarily a problem. Rather, the current discourse should be viewed as generative in helping the field to uncover the

appropriate level of resolution for more fully understanding affect and emotion. We think it is quite possible, even likely, that none of the current models are fully appropriate. Rather, as we come to a better understanding of the processes involved in the complex and dynamic construction of mental processes, we may need to allow ourselves greater freedom in exploring how the processes of emotion are inherently linked to the rest of our perceptual and cognitive systems. Indeed, it may eventually be necessary to abandon many of the classical conceptions and distinctions that are used to understand the mind, considering instead how various subjectively distinct mental processes have common origins. In other words, considering emotion as a type of cognition may reveal an understanding of the mechanisms that underlie both.

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