Comment: A General "Theory of Emotion" Is Neither Necessary nor Possible

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filter (appraisal mechanism) to decide what is threatening. Where things get fuzzy is in the role of "mental" states in appraisal. I prefer an expression like "threat detector" than "fear appraisal" to break with the folk psychological implications. My global organismic state idea was influenced by Scherer's (2014) idea that emotions play a coordinating role in organizing component processes. Moors' (2014) idea that conscious experience is determined by components is compatible with my idea that feelings are amalgams assembled from nonemotional ingredients.

As my previous comments indicate, I believe that evolutionary-based functions contribute to emotions, but not in the way that basic emotions or other evolutionary-based theories assume. I argue that evolution has not given us emotions, but instead behavioral survival tools built into circuits. So I disagree with ideas such as those by Tracy (2014) that emphasize innate modules for fear and other emotions. This may in part be a semantic difference, but that is why we need a different language for circuits that give rise to felt experiences as opposed to circuits that control bodily responses in the face of threats or other significant experiences. However, Tracy's idea about processes that provide contingent control of behavior is compatible with the global organismic idea. I view these states as permissive rather than causal. When a threat occurs, resources are marshaled in an effort to stay alive, raising the likelihood that defensive motivational states will be expressed and decreasing the likelihood of behaviors related to other forms of motivation.

Some may be surprised that I also find my views to be compatible with the sociodynamic model of Mesquita and Boiger (2014). We obviously work at different levels of analysis—I deal with the role of neurons, synapses, and molecules in animal behavior, and they with social factors in human behavior and experience. But like them, I agree that emotions do not always have rigidly fixed expressions, and that expressions are tailored to situations—that the way you act when you are afraid varies depending on the context in which you find yourself. But I believe this applies more to the second wave of behavior (the instrumental responses) than to the initial and fairly automatic responses that are more or less hard-wired (though the latter may be regulated to some extent by preexisting context before they are expressed, or short-circuited in a top-down fashion as they are being expressed).

As psychologists we all know the power of biases that can arise from implicit or explicit presuppositions. I hope psychologists who have supposed that I think that fear is burned into the brain will see my work in a new light.

References

Barrett, L. F. (2014). The conceptual act theory: A précis. *Emotion Review*, *6*, 292–297.

LeDoux, J. E. (1996). *The emotional brain*. New York, NY: Simon and Schuster.

LeDoux, J. E. (2002). *Synaptic self: How our brains become who we are*. New York, NY: Viking.

LeDoux, J. E. (2008). Emotional colouration of consciousness: How feelings come about. In L. Weiskrantz & M. Davies (Eds.), *Frontiers of consciousness: Chichele Lectures* (pp. 69–130). Oxford, UK: Oxford University Press.

LeDoux, J. E. (2012). Rethinking the emotional brain. *Neuron*, *73*(4), 653–676.

LeDoux, J. E. (2014). Coming to terms with fear. *Proceedings of the National Academy of Sciences USA*, *111*, 2871–2878.

Mesquita, B., & Boiger, M. (2014). Emotions in context: A sociodynamic model of emotions. *Emotion Review*, *6*, 298–302.

Moors, A. (2014). Flavors of appraisal theories of emotion. *Emotion Review*, *6*, 303–307.

Tracy, J. (2014). An evolutionary approach to understanding distinct emotions. *Emotion Review*, *6*, 308–312.

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Abstract

Progress in emotions research requires understanding why debate about the general nature of emotions remains intractable. Much confusion arises from proposals that offer one of the four different kinds of biological explanation, without recognizing the need for other three. More arises from tacitly thinking of emotions as products of design, when they are actually organically complex products of natural selection. Finally, debate persists because of categorizing emotions by functions, instead of recognizing that each emotion was shaped by the adaptive challenges posed by a recurring situation. No general explanation of the kind usually sought for emotions exists, however progress is possible if we study emotions as organically complex partially differentiated constellations of changes that have been useful in certain situations.

Keywords

adaptation, emotion, evolution, natural selection

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Decades of work by scores of smart scientists leave us far from agreement on "a theory of emotion." The current special section of *Emotion Review* is a fine attempt to move forward. It invites multiple perspectives, and asks specific questions, in an attempt to get closer to consensus. Are we nearly there? The diversity of these four perspectives suggests not. Now what?

Instead of just creating and comparing yet more theories of emotion, it is worth asking why agreement has been so elusive. As demonstrated by the four articles in this section, the problem is not lack of effort or sophistication. It is much deeper, and threefold. First, most theories of emotion address only one of the four different kinds of questions that need answers. Second, many theories of emotion are not about the whole, but only about one aspect of emotion. Finally, there is the assumption that emotion can be explained by a general theory.

Fifty years ago, Niko Tinbergen framed four questions that need to be answered to fully explain any biological trait (Nesse, 2013; Tinbergen, 1963). What is the mechanism? What is its ontology? What is its phylogeny? And, how have variations in the trait interacted with environments in ways that influenced fitness and thus helped to shape the trait? Tinbergen's huge contribution was recognizing that answers to these questions are not alternative explanations, they are complementary essential parts of a complete explanation.

The article by Tracy (2014) answers the fourth question. It notes that emotions exist because they have given selective advantages when expressed in certain situations (Nesse, 1990). This is inescapably correct; only natural selection can explain complex biological traits whose expression is regulated. She proceeds to say that each emotion has a function. This is generally correct, but it could incorrectly imply that different emotions have different functions, while most serve multiple functions, such as communication and arousal, that are shared with other emotions. Differences among emotions are explained, not by different functions, but by the different adaptive challenges of the situations that shaped them. Thus, emotions are only somewhat differentiated from each other, a conclusion inconsistent with theories of emotions as distinct basic kinds, or positions on dimensions (Nesse & Ellsworth, 2009). Tracy also says that aspects of an emotion must each have a function. This too is a fair generalization, although some aspects are epiphenomena, such as turning white when frightened, while others are useful only in certain environments, some of which no longer exist.

The article by Moors (2014) addresses the question about mechanisms. It emphasizes those that regulate emotional expression based on an appraisal of the meaning of information for an individual's ability to reach personal goals. Appraisal is important, but it is, as she notes, only one part of the larger mechanism that regulates emotional responses. Further investigation of how appraisal mechanisms work, and their neural underpinnings, is, as Moors suggests, important.

The article by Mesquita and Boiger (2014) argues that emotions are most often aroused by social situations, and that the interplay of social emotions and behavior in relationships leads to recursive causal chains of enormous complexity. This too is certainly correct, but it is only part of the picture; other kinds of situations also arouse emotions, as she notes. There is a great opportunity for exploring the phylogeny of social emotions, how they were shaped by social selection, and how they make possible kinds of relationships that are impossible for other species.

The article by Barrett (2014) is about the classification of emotions, and how these classifications, and our descriptions of them, influence the meaning and functions of emotions. Again, there is no need to argue with the thesis. It is not incompatible with the other perspectives, but it also is not well connected with them. For instance, the deep structure of emotions maps onto the situations that shaped them; it is this deep structure that interacts with social and other situations to give rise to the states that we observe, experience, and classify, using socially constructed understandings that change our experiences and behavior.

In short, each article says something true and important about emotion, but none is a theory about emotion in general. Each addresses one of Tinbergen's four questions, at most, and each emphasizes one aspect of emotions at the expense of others.

A natural next step would seem to be to construct a comprehensive theory of emotion using all four questions, and focusing on the whole instead of the parts. It seems to me, however, that a general theory of emotion is neither necessary nor possible. Emotions have no essence that makes them susceptible to a general explanation. They are like physiological responses. No one seeks a general theory of physiology. Instead, scientists propose theories about the mechanisms, ontogenies, phylogenies, and functions of physiological responses. Efforts to create a general theory *of emotion*, are distracting from the work of creating specific theories *about emotions*—their mechanisms, ontogeny, phylogeny, and functional significance.

We already have many theories about emotions, but some are unappreciated because they are framed as general theories of emotion. Extracting them into a larger framework is an important project. However, the result will never fully satisfy the human lust for order and simplicity. The emotions were not designed, they were shaped by natural selection, so their structure is organically complex in ways not susceptible to simple categorization and description. Worse yet, substantial genetic variation that influences emotion mechanisms interacts with vast developmental and cultural variation to result in dramatic variations in emotional responses among individuals. Just as there is no such thing as "the normal genome," there is no such thing as "the normal emotional system." Giving up the search for the essence of emotion, and the notion that there is one normal emotion regulation mechanism, should not arouse hopelessness. Instead, it should arouse relief at giving up an impossible quest, and excitement about moving on to address the several questions whose answers will explain emotions.

References

Barrett, L. F. (2014). The conceptual act theory: A précis. *Emotion Review*, *6*, 292–297.

Mesquita, B., & Boiger, M. (2014). Emotions in context: A socio-dynamic model of emotions. *Emotion Review*, *6*, 298–302.

Moors, A. (2014). Flavors of appraisal theories of emotion. *Emotion Review*, *6*, 303–307.

Nesse, R. M. (1990). Evolutionary explanations of emotions. *Human Nature*, *1*, 261–289.

Nesse, R. M. (2013). Tinbergen's four questions, organized: A response to Bateson and Laland. *Trends in Ecology & Evolution*, *28*, 681–682.
Nesse, R. M., & Ellsworth, P. C. (2009). Evolution, emotions, and emotional disorders. *American Psychologist*, *64*, 129–139.
Tinbergen, N. (1963). On aims and methods of ethology. *Zeitschrift fur Tierpsychologie*, *20*, 410–433.
Tracy, J. (2014). An evolutionary approach to understanding distinct emotions. *Emotion Review*, *6*, 308–312.

Comment: The Tower of Appraisals: Trying to Make Sense of the One Big Thing

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Abstract

This commentary on four theoretical articles published in this issue of *Emotion Review* discusses the one big thing that links them all and raises some questions about the ontological status of the appraisal part of appraisal theories of emotion.

Keywords
Appraisal theory, emotions, mind/body problem

Until I read Agnes Moors' (2014) article I had not realized I might qualify as a "second flavor" appraisal theorist; perhaps on the grounds that I subscribe to the view that the study of what individuals think, feel, want, value, and do ought to take precedence over the study of emotions in the cross-cultural study of variations in human psychologies. That was the easy insight (see Shweder, 2004).[1] Finding a way to comment on the full set of these articles however turned out to be challenging. All four are so thick in theory laden abstractions and metaphysical assumptions about psycho-biological processes and mind–brain connections that I began to wonder: what is the common ground upon which these theorists stand? Are they really writing about the same object of investigation? Can one discern a singular territory underneath the alternative ways they position themselves and map the terrain called "emotion"? Aside from simply pointing to the English word "emotion" (a lexical object whose vernacular meaning is certainly not their shared interest) how is one to identify the domain about which they are all theorizing? Upon first encounter the four voices seemed cacophonous. My initial impression was of a grand theoretical deliberation conducted in the Tower of Babel. Then I tried to relax and detect some points of resonance in the apparent discord.

Jessica Tracy (2014) offers a useful hint about how one might actually coordinate, or at least line up, the various theoretical reflections. She does so in a revealing endnote. There she clarifies (and qualifies) her evolutionary convictions about how things went in the distant past for members of our species. Tracy invites us to imagine the existence of original "recurrent situations" whose rather consequential selection pressures (adapt or die!) resulted in the evolution of a universal set of distinct biologically preprogrammed and once functional (although not necessarily still functional) survival promoting human emotions (indexed by English words such as fear, anger, sadness, and shame). With reference to those original recurrent situations, she offers this rather significant caveat:

> By evolutionary recurrent situation, I mean the *appraised*, or interpreted situation, which is more predictive of the emotion experienced than the specific situation itself … It is the appraisal of threat, and not the potentially threatening object itself, that elicits the fear. It is noteworthy that this emphasis on appraisal results in a good deal of common ground between evolutionary approaches to emotion and many appraisal theories of emotion. (Tracy, 2014, p. 312)

Compare that statement with the "psychobiological principle" articulated by the grand master of appraisal theory Richard Lazarus in his book *Emotion and Adaptation* (1991) where he writes:

> *If* a person appraises his or her relationship to the environment in a particular way [for example, as a threat], then a particular emotion [for example, fear] which is tied to the appraisal pattern, always follows. A corollary is that *if* two individuals make the same appraisal they will experience the same emotion, regardless of the actual circumstances. (p.191)

Lazarus (1991) goes on to say "we are constructed in such a way that certain appraisal patterns and their core relational themes

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