

likely become more complex, particularly in view of these interactions.

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Basic tastes and basic emotions: Basic problems and perspectives for a nonbasic solution

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Abstract: Contemporary behavioral and brain scientists consider the existence of so-called basic emotions in a similar way to the one described by Erickson for so-called basic tastes. Commenting on this analogy, I argue that similar basic problems are encountered in both perspectives, and I suggest a potential nonbasic solution that is tested in emotion research (i.e., the appraisal model of emotion).

Basic tastes and basic emotions. Similar to the fact that the dominant model in taste science is the basic tastes model, the dominant model of emotion during the last century, and which is probably still the most influential in current emotion research, is the so-called basic emotions model (see Ekman 1992; 1999; Izard 2007). The contemporary version of the model is largely based on the interpretation made by Tomkins (1963) of the evolutionary perspective on emotion developed by Darwin (1872) concerning the functions of emotional expressions. The adjective “basic” is used in emotion research to express three postulates (see Ekman 1992). First, it is used to convey the notion that “there are a number of separate emotions which differ one from another in important ways” (Ekman 1992). Second, it is used to indicate that “evolution played an important role in shaping both the unique and the common features which these emotions display as well as their current function” (Ekman 1992). Finally, the term is also often used in reference to the notion that the existence of nonbasic emotions can be explained by combinations of the basic emotions (e.g., Tomkins 1963). Theorists differ on the number and nature of basic emotions that they propose, but the six following ones are often included: anger, joy, sadness, fear, and disgust (see Ortony & Turner 1990). These basic emotions, which are also sometimes called *primary* or *fundamental* emotions (see Ortony & Turner 1990) are often conceptualized as affect programs that are triggered by specific eliciting conditions to produce emotion-specific response patterns such as prototypical facial expressions, physiological reactions, and action tendencies, and for which specific neural systems exist in the brain (for discussion, see Grandjean et al., in press; Ortony & Turner 1990). Basic emotions are typically being characterized in this tradition as innate, easy, categorical, and immediate (see Russell et al. 2003). Interestingly, the notion of fundamental or basic emotions can first be found in the philosophical history of psychology; for example, Descartes (1649/1998, Art. 69) already distinguished between six primary emotions (admiration, love, hatred, desire, joy, and sadness) and assumed that all other emotions either belong to these families or are blends of these primary emotions.

It is striking that a very influential representative of the basic emotions model made the explicit analogy between basic emotions and basic tastes as an argument for the existence of basic emotions (Izard 2007). Indeed, Izard (2007) argued that “It is possible to argue by analogy that the capacity to

discriminate among basic-emotion feeling states, like discriminating among basic tastes, is innate and invariant across the life-span,” and importantly that “the data relating to the underlying neural and behavioral processes suggest that the emergence of discriminable basic emotion feelings is analogous to that for basic tastes (...).” So, if Erickson is right in his criticism of the postulates concerning basic tastes, it means that Izard’s (2007) analogy is strongly misleading for emotion researchers.

Basic problems. In their analysis of basic emotions, Ortony and Turner (1990) achieve a conclusion that is conceptually close to the one achieved by Erickson, namely that the basic emotions perspective is “an article of faith rather than an empirically or theoretically defensible basis.” Recently, Grandjean et al. (in press) argued that the major drawbacks of basic emotion models concern (a) the lack of clear predictions on the eliciting conditions for basic emotions; (b) the absence of specific hypotheses for the expected prototypical patterning of emotion-specific responses; (c) the unclear criteria for defining basic and nonbasic emotions; and, (d) the unspecified central mechanisms, or affect programs leading to basic emotions. In terms of brain mechanisms involved, it is critical to notice that most of the recent cognitive neuroscience research on emotion has attempted to identify specific brain regions implementing these distinct basic emotions, with the view, for example, that signals of fear and disgust are processed by distinct neural substrates, namely, the amygdala and the insula, respectively (see Calder et al. 2001). Given the central importance of finding specific neuronal processes for basic emotions as evidence for the existence of basic emotions – just like it is the case for basic tastes – it is interesting to notice that, for example, Mineka and Öhman (2002) proposed that “the amygdala seems to be the central brain area dedicated to the fear module.” However, an analysis of the literature concerning the brain mechanisms in emotion suggests that emotions are instead represented in a distributed way in the brain, and in particular that the amygdala is not specific to fear, but would be in fact critically involved in the processing of all events that are appraised as being self-relevant for the organism (Sander et al. 2003; 2005).

Towards a nonbasic solution. An alternative to the notion of the existence of independent discreet emotions is the view that there is a continuum for emotions, as argued by Erickson for tastes. The current emotion theory that, by analogy, corresponds closely to the view supported by Erickson as an alternative to the basic tastes model is the so-called appraisal model of emotion (see Ellsworth & Scherer 2003; Scherer 2001; Sander et al. 2005). It would take too much space to detail this model, but it is worth mentioning that a key aspect of appraisal is that the elicitation and the differentiation of an emotion depends on a multifactorial evaluation of the meaning and consequences of an event, given the individual’s goals, needs, and values, as well as the current context. Such evaluation is central to componential appraisal theories of emotion, and allows us to conceptualize emotions along a continuum driven by the appraisal mechanisms, rather than along discreet categories of basic emotions. Such an approach conceptualizes the behavioral meaning of an event for the individual, and thus the resulting emotion, on the basis of multiple complementary criteria including novelty, agreeableness, goal conduciveness, coping potential, and norm compatibility (see Scherer 2001).

Conclusion. Although its origin remains to be understood, the analogy between the scientific conceptualizations of so-called basic tastes and so-called basic emotions is striking (see e.g., Izard 2007), and has even led to empirical research investigating which basic emotions are elicited by basic tastes (e.g., Robin et al. 2003). If neither the basic tastes model nor the basic emotions model were to be relevant theories to guide research, one can hope that mutual exchanges between the taste and emotion sciences would allow us to avoid the use of one to support the other.