Compositionality of emotions

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Abstract

Emotions are signaled by complex arrays of face and body actions. The main point of contention in contemporary treatments is whether these arrays are discrete, holistic constellations reflecting emotion categories, or whether they are compositional -- comprised of smaller components, each of which contributes some aspect of emotion to the complex whole. We address this question by investigating spontaneous face and body displays of athletes, and place it in the wider context of human communicative signals and, in particular, of language. In an experiment, participants interpreted a range of emotions and their strengths in pictures of athletes who had just won or lost a competition. By matching participants' judgements with minutely coded features of face and body, we find evidence for compositionality. The primary bifurcation in this competitive physical context is between Dominance and Submissiveness. The distribution of participants' responses indicates that other features of face and body cluster to reflect more particular emotional components related, for example, to Positive valence or Goal Obstruction. Therefore, the interaction of the broader and more particular components gives rise to more complex emotional states, such as Happy or Angry in the case of Dominance, and Ashamed or Sad in the case of Submissiveness.

Protocol

Step 1.

Step 2.