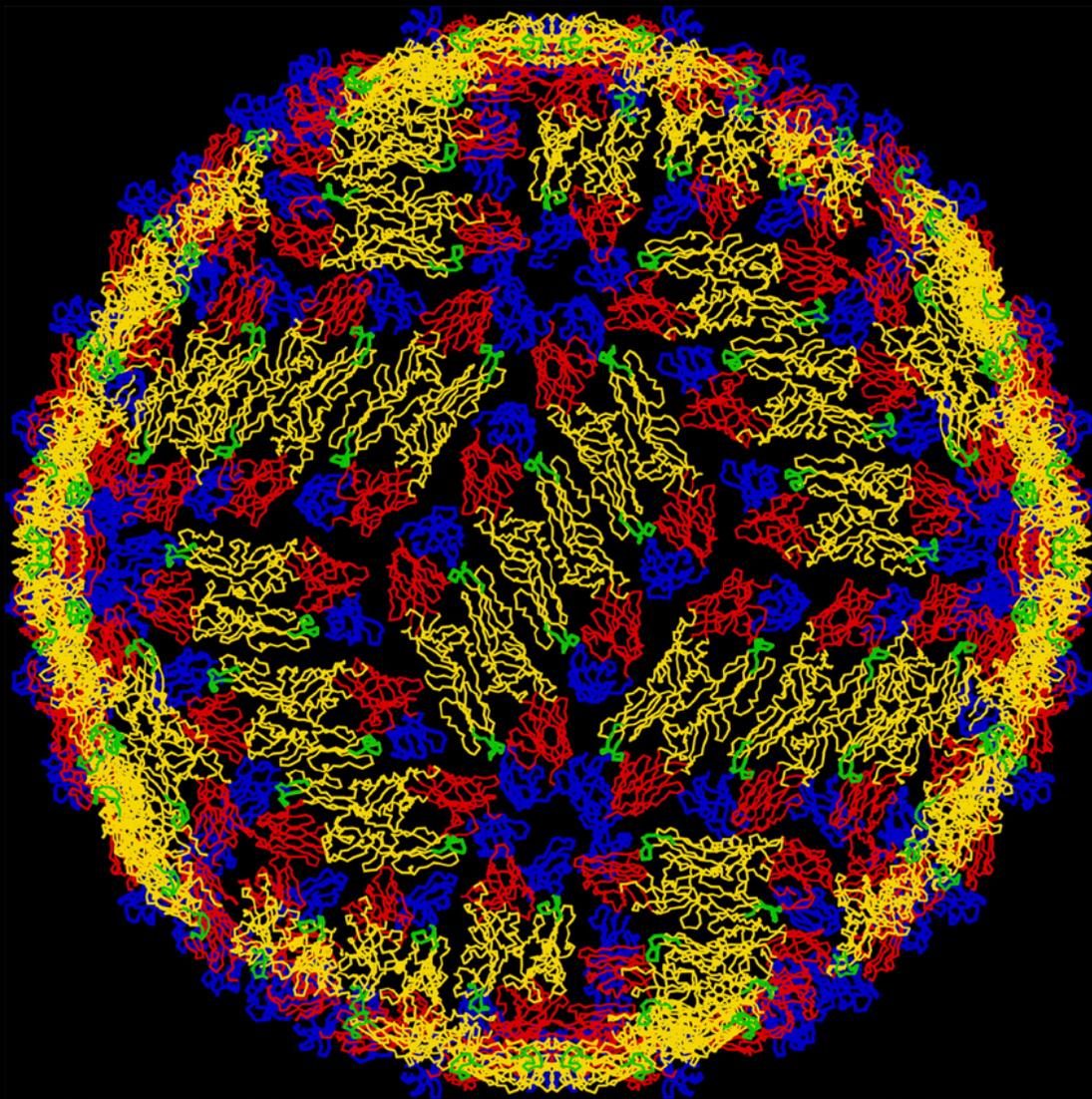


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Infection with the Dengue virus is a leading cause of death and infection in the tropics and subtropics. Full story on page 24.

The Psychological Constructionist Model

An Approach to Understanding the Perception and Experience of Emotions

By Cameron Doyle

Most of us can probably recall an instance where we have asked someone about their emotional state based on their facial expression only to find that they are not feeling the way we thought they were. Despite such experiences, it is commonly believed that emotions are discrete categories (e.g., anger, fear) that are associated with specific facial expressions. Growing evidence in the field of social psychology, however, suggests that this is not the case; our ability to experience and perceive emotions does not appear to be innate. According to UNC-Chapel Hill psychologist Kristen Lindquist, Ph.D., our perceptions of emotions are based on our knowledge of emotion words that we use to make meaning of general bodily feelings. This view is referred to as the psychological constructionist model of emotions.

Dr. Lindquist's hypothesis is that "emotions are products of more general psychological causes, which are constructed out of basic processes such as the ability to feel positive and negative sensations." She is interested in "the human ability to make meaning of these more general sensations and to categorize them as emotions."¹ Notably, Dr. Lindquist and her colleagues have been the first to demonstrate that knowledge about emotion categories encoded in language helps people to make sense of their emotions. Prior to the development of the constructionist model, it was generally accepted

that emotions were universal, meaning that they existed as discrete categories in all humans; however, it has been determined that emotional states are not clearly defined across cultures, which supports the hypothesis that emotions may be linked to associations that we create based on language.

Dr. Lindquist's lab takes multiple approaches to testing her hypothesis about the construction of human emotions.

She uses behavioral methods to understand how we act when we experience positive and negative sensations and how we make meaning of these sensations in terms of the emotion concepts that are available to us. The lab also takes psychophysiological measurements, which are used to determine how our bodily responses contribute to our categorization of emotional experiences. Dr. Lindquist uses neuroimaging techniques to measure brain activity during the experience of emotions to determine whether these activations reflect the involvement of affective processes and more general conceptual processes linked to language.

In a study conducted at Boston College in 2006, Dr. Lindquist and her colleagues found that it is possible to temporarily reduce access to an emotion word by repeating it numerous times, making it difficult to perceive emotions that are associated with that particular word. This process is known as semantic satiation, and it was used in this context to provide evidence that emotion perceptions are supported by the words that we attach to them. The experiment involved a study phase where participants were primed with images of faces. These faces depicted configurations that are commonly associated with a particular emotion (e.g., anger). In the test phase, participants repeated the target emotion word (e.g., "anger") 30 times for the satiation condition and three times for the control condition. As expected, in the satiation condition, participants experienced a temporary reduction in their ability to mentally access



Kristen Lindquist, Ph.D.

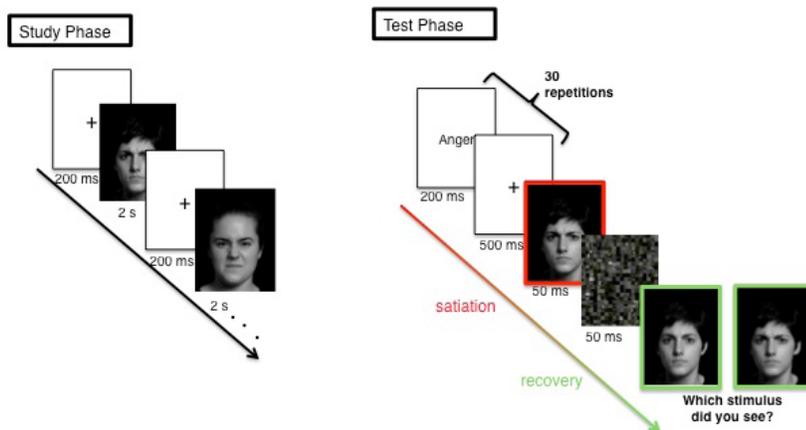


Figure 1. In the study phase of the procedure, participants were shown faces to prime them for the test phase. Participants underwent either the semantic satiation condition or the control condition. They were then asked to indicate which face they had seen previously. Researchers were interested in participants' response latency in the test phase. Image courtesy of Dr. Kristen Lindquist.

the emotion word. During this period of limited access to the word (e.g., anger), participants were shown two images of a person's face depicting the emotion (e.g., anger) either weakly or intensely. Participants were then asked to determine which face they had seen in the previous phase (Figure 1).

The results showed that participants in the satiation condition took longer to elicit a response (Figure 2), indicating that along with a temporary reduction in access to the emotion word, the time it took them to perceive the emotion actually increased. Dr. Lindquist and her colleagues' findings "constituted evidence consistent with the construction hypothesis: Satiating an emotion word appeared to change basic perceptual encoding of emotional faces . . . the fact that the task did not explicitly require conceptual knowledge implies that this knowledge is routinely active during emotion perception."² Dr. Lindquist has since completed additional studies assessing the relationship between language and emotion perception and is conducting some of these follow-up studies here at UNC. She hopes this research will expand on her findings related to the effect of language on emotion perception.

It could be possible to teach people how to make better distinctions between their states of affect and to thus better categorize their feelings.

To further support the psychological constructionist model of emotions, Dr. Lindquist and Lisa Feldman Barrett, Ph.D. of Northeastern University analyzed existing research to find evidence of brain activity that corresponds with their "constructionist" hypothesis of emotion. Through the most extensive meta-analysis (an analysis of existing research) that has been conducted on this topic, they found that brain areas that are activated during emotion experiences and perceptions are many of the same areas that are associated with other psychological processes such as memory, attention, moral reasoning, and language (Figure 3). According to the report, "these findings are consistent with the hypothesis that brain

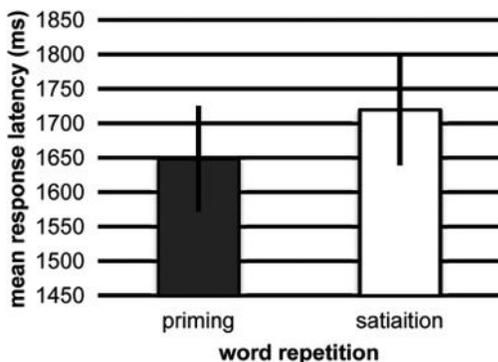


Figure 2. The results of the semantic satiation study show that participants who were in the satiation condition exhibited greater response latency than those in the priming condition $F(1, 59) = 8.166, p = .006, X^2 = .112$. This constitutes the first evidence that emotion perceptions are constructed based on conceptual knowledge of emotion words. Image courtesy of Dr. Kristen Lindquist.

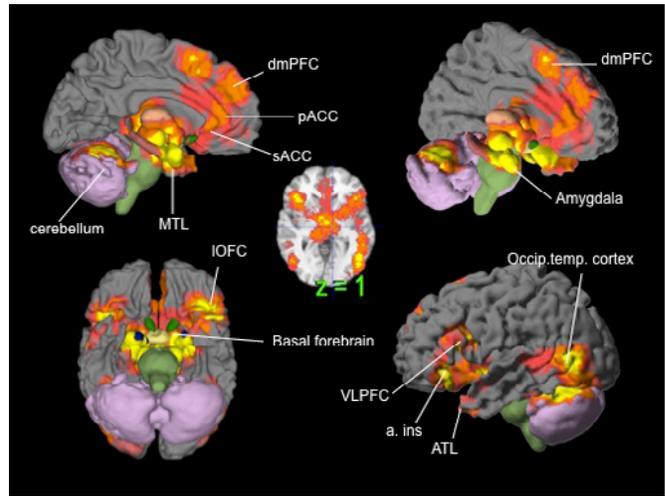


Figure 3. Areas of brain activation that are associated with emotion perceptions and experiences correspond to areas that are associated with other processes. This indicates that emotions are constructed as a result of brain activations for more basic psychological processes, not emotions specifically. Image courtesy of Dr. Kristen Lindquist.

regions are implementing basic psychological operations that are not specific to any emotion per se, or even to the category 'emotion.'³ This information provides evidence that emotions are constructed in the mind as a result of basic feelings of affect (i.e., generally positive or negative feelings) and knowledge about emotions.

Dr. Lindquist's findings based on the psychological constructionist model of emotions have implications outside the laboratory. This information can help us to find ways to treat emotional disorders through the use of psychotherapy. It could be possible to teach people how to make better distinctions between their states of affect and to thus better categorize their feelings. Presumably, this knowledge would allow people with emotional disorders to properly regulate their emotions. Dr. Lindquist's research also has important implications for learning about how the human mind functions in general. Constructionist models have been developed to explain many psychological processes, including memory and psychopathology.^{4,5} Interestingly, this implies that our minds could be responsible for constructing much more than just our emotions. Furthermore, these constructionist approaches have allowed psychologists such as Dr. Lindquist to make excellent use of modern technology to better understand the human mind.

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