

Emotions

Definition: An emotion is a transitory, valenced experience that is felt with some intensity as happening to the self, is generated in part by a cognitive appraisal of a situation, and is accompanied by both learned and reflexive responses.

Emotions are characterized by six features:

- Emotions are transitory states:
 - emotions are not overt behaviors nor specific states, they are experiences
 - emotions are often mixed and even contradictory, assigning specific labels to them may be difficult
- Emotional experiences has valence
 - emotions are either positive or negative
 - changes in emotions can change your motivation:
 - people tend to act in ways that bring about happiness or satisfaction
 - people avoid doing things that cause pain, anxiety or sadness
- Emotions are passions, not actions
 - actions are initiated by the actor, whereas passions happen to the actor
 - eating for example is an action but hunger is a passion – you eat, but hunger happens to you
- Emotions arise in part from a cognitive appraisal of a situation
 - your interpretation of the situation can alter your emotional reaction to it – seeing a lion elicits different emotions depending on whether you think the animal is a tame pet or a wild, hungry beast
 - although you cannot consciously determine emotions, part of the situation you interpret is your own emotions as they develop

- Emotions are accompanied by bodily responses
 - o for example when you are surprised you will show a “wide-eye” and “open-mouth” expression
- Emotions vary in intensity
 - o an extreme lack of emotion may make it difficult or impossible to hold a job or to function normally in other ways
 - o too much emotional arousal can also cause problems: it may make you unable to concentrate or to coordinate thoughts

Where is emotion, in the heart or in the head?

Emotions and the autonomic nervous system

The visceral responses that are part of emotional experiences are produced by the *autonomic nervous system* (ANS).

This system modulates the activity of all body's organs, allowing the body to respond to demands from the environment in a coordinative fashion.

The autonomic nervous system has two divisions:

- *the sympathetic nervous system*
- *the parasympathetic nervous system*

The parasympathetic nervous system is involved mainly in the protection, nourishment, and growth of the body.

The sympathetic nervous system usually prepares the body for vigorous action. The *adrenal glands*, acting as specialized cells of the sympathetic nervous system, contribute to the *fight-and-flight syndrome* by releasing adrenaline into the bloodstream.

Activity of the autonomic nervous system does not reach consciousness directly but can be detected indirectly, such as through biofeedback. Because of the involuntary nature of the autonomic responses which often accompany feelings of guilt, polygraphs (instruments that measure the responses) have been used as lie detectors. However, there is no specific psychological response pattern that reliably accompanies lying.

The James-Lange theory:

The James-Lange theory of emotions holds that peripheral responses are the primary source of emotions and that self-observation of these responses contributes to the emotional experience.

The theory is supported by evidence that, at least for several basic emotions, the psychological responses are distinguishable enough for emotions to be generated this way. These facial expressions are linked to these patterns of psychological change.

Studies of people with spinal cord damage do not support an important role of autonomic activity in parts of the body beyond the face, except in affecting the intensity of some emotions.

The Cannon-Bard theory

The Cannon-Bard theory of emotion proposes that emotional experience occurs independently of peripheral responses and that there is a direct experience of emotion based on activity of the central nervous system.

Updated versions of this theory suggest that various parts of the central nervous system may be involved in different emotions and different aspects of emotional experience. Some pathways in the brain, such as from the thalamus to amygdala, allow strong emotions to occur before conscious thought can take place. Specific parts of the brain appear to be responsible for the feelings of pleasure or pain in emotions.

One updated version of the Cannon-Bard theory suggests that emotion depends on pathways in the brain, including those from the *locus coeruleus*, which constitute a kind of “autonomic nervous system” within the brain, modulating the activity of other areas of the brain.

The Schachter-Singer theory

The Schachter-Singer theory of emotion suggests that peripheral responses are primary sources of emotion but that cognitive interpretations of the eliciting situation are required to label the emotion, a process that depends on attribution. Attributing arousal from one situation to stimuli in another situation can produce transferred excitation, intensifying the emotion experienced in the second situation.

How do people communicate emotions?

In humans, facial movement and expression play the primary role in communicating emotions.

Innate expressions of emotions

Darwin suggested that certain facial expressions of emotion are innate and universal and that these expressions evolved because they communicate an animal's emotional condition to other animals.

Some facial expressions of basic emotions do appear to be innate. Even blind infants smile when happy and cry when in discomfort.

Certain facial movements are universally associated with certain emotions. A slackened face and sadness is an example.

Social aspects of emotional expression

Many expressions of emotion are learned. As a result, the same emotion may be expressed facially in different ways in different cultures.

Especially in ambiguous situations, other people's facial expressions of emotion may be vital sources of information about what to do or what not to do, a phenomenon called social referencing.

As children grow up, they learn the rules of emotional expression appropriate to their culture. These rules are called one's emotion culture.

Even in adulthood, a change in social or professional role may require learning new ways of expressing emotion.

Facial expression and the brain

Voluntary facial movements and involuntary facial expressions are controlled by different parts of the brain. The right and left cerebral hemispheres play somewhat different roles in emotional expression:

- the right frontal areas are activated in negative emotions
- left frontal areas are activated in positive emotional expressions

However, the right hemisphere seems to play the dominant role in both facial expressions of emotion (the left side of the face shows more expressiveness in adults) and the perception of emotion.

Suppression of emotion in adults may involve reduced communication between the cerebral hemispheres.