


MOTIVATION & EMOTION

Aspects of emotion



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Image source

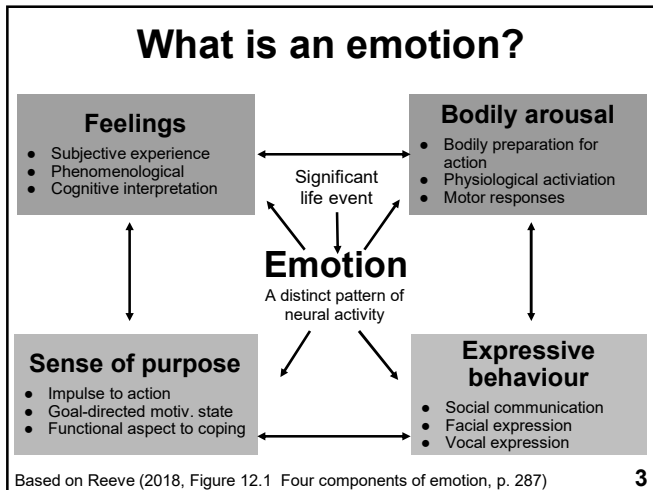
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Lecture 07 recap:

Nature of emotion (Ch 12)

(Reeve, 2018)

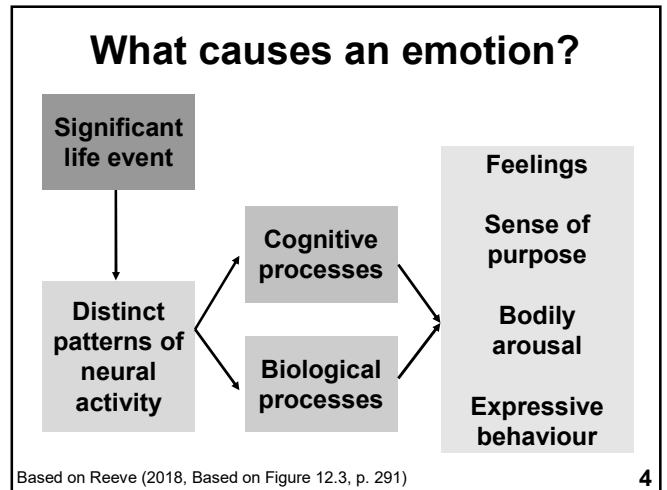
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Based on Reeve (2018, Figure 12.1 Four components of emotion, p. 287)

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Based on Reeve (2018, Based on Figure 12.3, p. 291)

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Basic emotions

Responses to significant life events

Fear	Anger	Dis-gust	Sad-ness	Inter-est	Joy
potential of threat and harm	fighting off threat and harm	rejecting threat and harm	after threat and harm	motive involvement	satis-faction

Response to threat and harm

Response to involvement and satisfaction

Based on Reeve (2018, pp. 294-295)

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What good are the emotions?

Utility of emotion:

Coping functions
→ adapt better to life event

Social functions
→ make social interactions better

Based on Reeve (2019, pp. 299-301)

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Emotion regulation strategies

1. Situation selection
2. Situation modification
3. Attentional focus
4. Reappraisal
5. Suppression

Based on Reeve (2018, pp. 304-306)

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What is the difference between emotion & mood?

Criteria	<u>Emotions</u>	<u>Moods</u>
Antecedents	Significant life events	Ill-defined
Action-Specificity	Specific	Influence cognition
Time course	Short-lived	Long-lived

Based on Reeve (2018, p. 306)

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Aspects of emotion

Biological, cognitive & social aspects

Reading:
Reeve (2018)
Ch 13
 (pp. 313-338)

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Outline – Aspects of emotion

- Biological
 - James-Lange theory
 - Contemporary perspective
 - Brain activity
 - Facial feedback hypothesis
 - Cross-cultural expression
- Cognitive
 - Appraisal
 - Emotion knowledge
 - Attribution
- Social
 - Social interaction (mimicry, feedback, contagion)
 - Social sharing of emotion
- Affective computing
 - Robots that show emotion

Based on Reeve (2018, p. 313) 10

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Biological aspects of emotion

Image: https://commons.wikimedia.org/wiki/File:Bipolar_Dyptych_1_365.jpg

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James-Lange theory of emotion

What is the role of the body in emotion?

Stimulus → Emotion → Bodily reaction

OR

Stimulus → Bodily reaction → Emotion
 James-Lange theory of emotion
 (the first but not the best theory of emotion)

Based on Reeve (2018, pp. 314-315)

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James-Lange theory of emotion

Example

sudden cold shower
↓
increased heart-rate
↓
surprise? shock? fear?

Based on Reeve (2018, pp. 314-315)

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James-Lange theory of emotion

Assumptions

Emotional experience is a way of making sense of bodily changes.

The body:

- reacts uniquely to different emotion-eliciting events
Different patterns of activity → different emotions
- does not react to non-emotion-eliciting events
No body changes → no emotions

Based on Reeve (2018, pp. 314-315)

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James-Lange theory of emotion

Criticisms

- Body reactions are part of the fight-or-flight response that does not vary between emotions.
- Emotional experience is quicker than the physiological reaction.
- Physiological arousal augments, rather than causes, emotion.

Based on Reeve (2018, pp. 314-315)

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James-Lange theory of emotion

Contemporary perspective

- Distinct physiological differences (e.g., heart rate and skin temperature) are evident for some emotions (e.g., anger, fear, sadness, and disgust). But only a few emotions have distinct ANS patterns (ones with survival value).
- Emotions recruit biological and physiological support to enable adaptive behaviours such as fighting, fleeing, and nurturing.

Based on Reeve (2018, pp. 316-317)

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Brain activity for specific emotions

Distinct neural circuits (Gray)

- Fight or flight system
 - Behavioural inhibition system
 - Behavioural approach system
- Joy, Fear, Rage and Anxiety

Based on Reeve (2018, pp. 317-318)

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Brain activity for specific emotions

- **Happiness:** Superior temporal gyrus + rostral anterior cingulate cortex
- **Sadness:** Medial frontal gyrus + caudate anterior cingulate cortex
- **Anger:** Inferior frontal gyrus + parahippocampal gyrus
- **Fear:** Amygdala + insula
- **Disgust:** Anterior insula + right inferior frontal gyrus
- **Interest:** Anterior insula + right inferior frontal gyrus

Based on Reeve (2018, pp. 317-318)

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Facial feedback hypothesis

Does smiling make you happy?

Does scowling make you angry?

Based on Reeve (2018, pp. 318-324)

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Facial feedback hypothesis

Emotion stems from arousal of feelings by:

- Facial muscle movements
- Facial temperature changes
- Glandular activity in the facial skin

Based on Reeve (2018, pp. 318-324)

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Facial musculature

80 facial muscles, 36 in facial expression.
8 differentiate basic emotions:

- ◆ **Upper:** frontalis (forehead), corrugator (eyebrows), orbicularis (around eyes)
- ◆ **Middle:** zygomaticus (corners of mouth to cheekbone), nasalis (wrinkles nose)
- ◆ **Lower:** depressor (corners of mouth down), orbicularis oris (circular muscle around mouth), quadratus labii (draws corners of mouth backwards)

Based on Reeve (2018, pp. 318-324)

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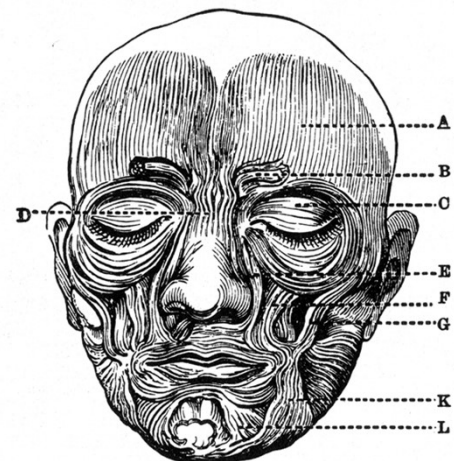


Image source: https://commons.wikimedia.org/wiki/File:Expression_of_the_Emotions_Figure_1.png

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Facial feedback hypothesis

- Strong: FF causes emotion
- Weak: FF modifies emotion intensity i.e., 2-way relation between feeling and expression.
- Critics: FF effect is small

Based on Reeve (2018, pp. 318-324)

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Cross-cultural facial expression of emotion

- Ekman tested cross-cultural recognition of facial expressions in the 1970s.
- Very high agreement across cultures.
- Evidence that facial expression of emotion is cross-culturally universal and has an innate, unlearned component.

Based on Reeve (2018, pp. 318-324)

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Ekman's work on basic emotions



Video (11:24 mins):

<http://www.youtube.com/watch?v=-PFqzYoKkCc>

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Cognitive aspects of emotion

Image: https://commons.wikimedia.org/wiki/File:Bipolar_Dyptych_1_365.jpg

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Cognitive perspective

- Agrees that basic emotions have biological origins, to some extent.
- But argues that biology cannot explain “complex” emotions (e.g., hope, pride, envy, gratitude, and pity).
- Cognitive and sociocultural perspectives are needed.

Based on Reeve (2018, p. 324)

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Cognitive aspects of emotion

- **Appraisal:**
Evaluating the significance of an event in terms of one’s well-being
(“Is this situation significant to me?”)
- **Emotion knowledge:**
Capacity to discriminate different types and shades of the same emotion
(anger → irritation, frustration, rage, etc.)
- **Attribution:**
Reason used to explain why an outcome to a life event occurred
(e.g., pride, gratitude)

Based on Reeve (2018, p. 324)

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Appraisals

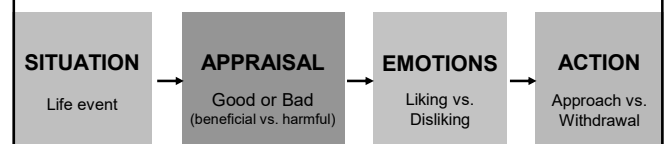
- Estimate the significance of an event for well-being, which elicits emotional reaction:
 - Is there potential benefit/gain or harm/loss from the event?
 - Can I cope with this situation?
- Without appraisal, emotions do not occur
- Appraisal, not the event, causes emotion
- If appraisal changes, emotion changes

Based on Reeve (2018, p. 324)

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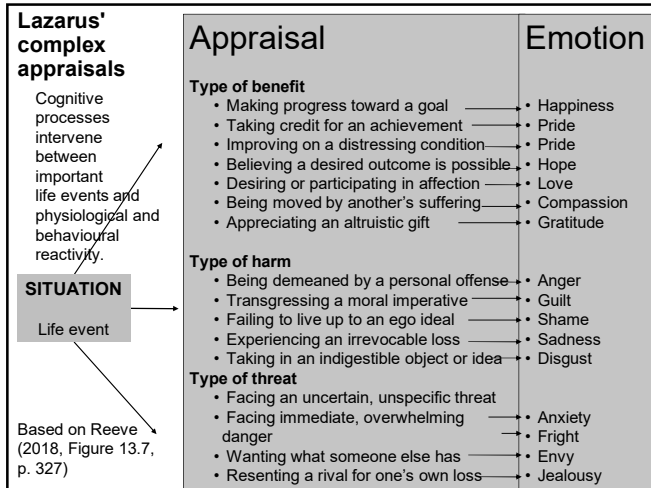
Appraisal theory of emotion Arnold



Based on Reeve (2018, Figure 13.6, p. 325, based on Arnold, 1960, 1970)

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Appraisal theory of emotion

- Complex appraisal theories are 65-70% accurate in predicting emotion - why not 100%?
- Other processes contribute e.g., biology
- Appraisals intensify rather than cause emotion
- Patterns of appraisal for many emotions overlap
- Also consider emotion knowledge and attributions

Based on Reeve (2018, p. 330)

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Emotion knowledge

- As we develop, we learn to distinguish finer shades of emotion.
- Emotion knowledge is the ability to differentiate emotional experience into discrete categories and to differentiate basic emotions into their various shades.
- A component of emotional intelligence.

Based on Reeve (2018, pp. 330-332)

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Attributions

Attribution = causal explanation (reason) a person uses for an important life outcome e.g.,

- Why did you win?*
- Why were you fired from your job?*

Based on Reeve (2018, pp. 332-334)

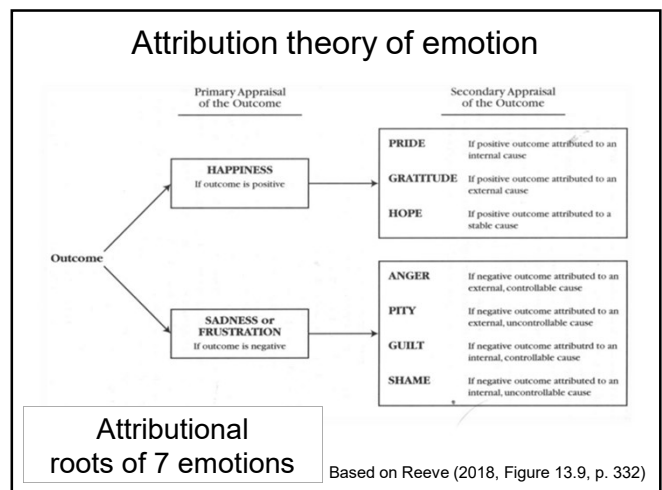
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Attributions

- Primary attribution – good or bad
- Secondary attribution – cause
- Primary + secondary attributions → emotion
- Changing the attribution will change the emotion.

Based on Reeve (2018, pp. 332-334)

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Social aspects of emotion

Image: https://commons.wikimedia.org/wiki/File:Just_love.jpg

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Mimicry

- Exposed to emotional expressions of others, we mimic their facial expression, voice, posture, movement, and behaviour.
- FFH illustrates how mimicry can affect the observer's emotional experience, and hence lead to a contagion effect.

Based on Reeve (2018, pp. 332-334)

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Contagion

Mimicry → convergence on the same emotional experience. People unconsciously:

- mimic other's facial expressions, voice, posture, movements, etc.
- experience emotion-related feedback from such facial, vocal, etc., movements.
- thus, tend to "catch" other's emotion.

Based on Reeve (2018, pp. 332-334)

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Why We Can't Not Smile

- Epic Science #66



Video: (2:47 mins)

<https://www.youtube.com/watch?v=TdsFGqhoAEo>

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Emotional sharing

Conversational context in which we put ourselves in position to re-experience and re-live emotional experiences. People:

- recount what happened
- recount how they felt
- solicit others' assistance with coping, making sense, and reconfirming self-concept (esp. after negative emotions)
- build and maintain relationships that are central to their lives

Based on Reeve (2018, pp. 335-336)

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Social sharing of emotion

- Recounting an emotional episode in conversation - what happened, what it meant, how person felt, etc.
- Ways of sharing:
 - **Social-affective sharing**
 - listening; understanding; unconditional positive regard;
 - comforting; offering consolidation; caring; reassuring;
 - perspective taking/empathy; revalidating self-esteem;
 - providing social and concrete help and assistance.
 - **Cognitive sharing**
 - reframing; reappraising the emotional episode;
 - creating meaning; encouraging the abandonment of failed goals;
 - reprioritising one's goals and motives.

Based on Reeve (2018, pp. 335-336)

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Affective computing

Image: [https://commons.wikimedia.org/wiki/File:Sophia_\(robot\).jpg](https://commons.wikimedia.org/wiki/File:Sophia_(robot).jpg)

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Affective computing

- AI that recognises and responds to human emotion.
- Aim is to give AI emotional intelligence, including ability to simulate empathy.
- Affective AI should interpret emotional state of humans and adapt its behaviour, giving appropriate response to those emotions.

Based on Wikipedia: https://en.wikipedia.org/wiki/Affective_computing

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Affective computing

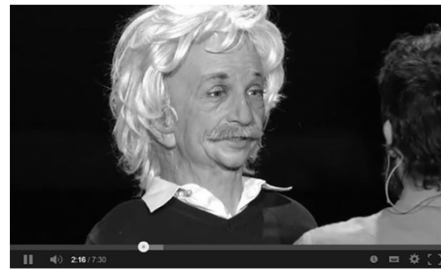
- Emotions show ANS specificity (e.g., anger, fear, sadness, joy, and disgust → distinct changes in blood pressure and skin temperature)
- Sensors built into mobile devices, equipment, clothing, entertainment, etc. can monitor our emotion and adjust their programming accordingly.

Based on Reeve (2018, p. 316)

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Robots that “show emotion” David Hanson



Video (4 mins 58 secs):

http://www.ted.com/talks/lang/en/david_hanson_robots_that_relate_to_you.html

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Meet Sophia, World's first AI humanoid robot Tony Robbins



Video (9 mins 55 secs):

<https://www.youtube.com/watch?v=Sq36J9pNaEo>

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Summary

- **Biological:** Events trigger bodily actions via the ANS, neural brain circuits, and facial feedback, which are interpreted as emotion.
- **Cognitive:** Appraisal evaluates significance of events. Attribution explains cause of events. Different appraisals/attributions lead to different emotions.
- **Social:** Other people are rich sources of emotion e.g., through mimicry, feedback, contagion, and social sharing of emotion.

Based on Reeve (2018, p. 336-338)

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Upcoming lectures



- **Emotions**
 - Individual emotions (Ch14)
- **Applied concerns**
 - Unconscious motivation (Ch 15)
 - Growth psychology (Ch 16)
- **Interventions & review** (Ch 17)

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References

- Reeve, J. (2018). *Understanding motivation and emotion* (7th ed.). Hoboken, NJ: Wiley.

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