Nature of emotion

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Outline – Nature of emotion

- What is an emotion?
  - Questions
  - Definition
  - Emotion & motivation
- What causes an emotion?
  - Two-systems view
  - Chicken-&-egg problem
  - What ends an emotion?
- How many emotions?
  - Biological perspective
  - Cognitive perspective
  - Reconciliation of #5

Based on Reeve (2015, pp. 337-338)

Some more questions

1. How can emotion be measured?
2. What are the consequences of emotions?
3. How can emotion be changed?
4. How and why did emotions evolve?
5. How are the emotions of animals & humans similar and how do they vary?

Feeling All the Feels:
Crash Course Psychology #25

Youtube (2:00 / 10:50 mins)

https://www.youtube.com/watch?v=gAMbkJk6gnE

Key questions

1. What is an emotion?
2. What causes an emotion?
3. How many emotions are there?
4. What good are the emotions?
5. Can we control our emotions?
6. What is the diff. between emotion & mood?

Based on Reeve (2015, p. 339)
What is an emotion?

Feelings
- Subjective experience
- Phenomenological awareness
- Cognitive interpretation

Bodily arousal
- Bodily preparation for action
- Physiological activation
- Motor responses

Sense of purpose
- Impulse to action
- Goal-directed motivational state
- Functional aspect to coping

Social-expressive
- Social communication
- Facial expression
- Vocal expression

Emotion
A distinct pattern of neural activity

Definition of emotion

“Emotions are ... short-lived, feeling-purposive-expressive-bodily responses that help us adapt to the opportunities and challenges we face during important life events.”

Definition of emotion

“Emotions are ... the synchronised brain-based systems that coordinate feeling, bodily response, purpose, and expression so as to ready the individual to adapt successfully to life circumstances.”

Definition of emotion

“Emotions are ... short-lived psychological-physiological phenomena that represent efficient modes of adaptation to changing environmental demands.”

- Levenson (1994, p. 123)

Relationship between motivation & emotion

- **Emotion as motivation**: Emotions are one type of motive which energises and directs behaviour.
- **Emotion as readout**: Instead, self-esteem provides a “dashboard” indicator of how one’s life is going i.e., it is an outcome of having one’s needs fulfilled.

Based on Reeve (2015, pp. 340)

Based on Reeve (2015, pp. 342)

Based on Reeve (2015, pp. 342)

Based on Reeve (2015, p. 343)
What causes an emotion?

Based on Reeve (2015, Figure 12.3, Causes of the emotion experience, p. 344)

Biological perspectives

Biology lies at the causal core of emotion (e.g., neurotransmitters)
- Izard (1989)
  - infants
- Ekman (1992)
  - emotions happen to us
- Panksepp (1982, 1994)
  - genetically-endowed neural circuits

Cognitive activity is a necessary prerequisite to emotion
  - appraisal needed
- Scherer (1994a, 1994b, 1997)
  - specific appraisals (good/bad, cope, morality)
- Weiner (1986)
  - attribution

Based on Reeve (2015, pp. 344-346)

Two-systems view (Buck, 1984)

Based on Reeve (2015, Figure 12.4, Two systems view of emotion, p. 345)

Two-systems views

- Levenson (1994)
  - the two systems influence one another
- Panksepp (1994)
  - some emotions are primarily from the biological system (e.g., fear and anger), whilst
  - other emotions arise from experience, modeling and culture (e.g., gratitude and hope).

Based on Reeve (2015, pp. 344-345)

Feedback loop in emotion

Emotion is a chain of events that aggregate into a complex feedback system.

Based on Reeve (2015, Figure 12.5, Feedback loop in emotion, p. 345)

How many emotions are there?

Biological perspective
- Small # (2 to 10) of primary, universal emotions
- Emotion is a bi-product of biology & evolution.
- Downplays secondary or acquired emotions.

Cognitive perspective
- Many, varied emotions which arise in response to different meaning structures
- Acknowledges importance of the primary emotions, but stresses the complex (secondary, acquired) emotions

Based on Reeve (2009, pp. 308-312)
Reconciliation of the numbers issue

Emotion families
Each basic emotion represents a family of emotions that revolve around a particular theme (biologically rooted, but cognitively nuanced).

Basic emotions
Basic emotions each have a sub-cortical brain circuit that is rooted in evolutionary adaptation to major life tasks and that has automatic connections with feelings, expressions, bodily preparations, and motivational action tendencies.

Based on Reeve (2015, pp. 350-351)

Basic emotions criteria
(Ekman)
1. Distinct facial expression
2. Distinct pattern of physiology
3. Automatic (unlearned) appraisal
4. Distinct antecedent cause
5. Inescapable (inevitable) activation
6. Presence in other primates
7. Rapid onset
8. Brief duration
9. Distinctive subjective experience (feeling state)
10. Distinctive cognition (thoughts, images, memories)

Based on Reeve (2015, p. 351)

Basic emotion exclusion reasons
(Ekman)
1. Experience-based derivative of a basic emotion (e.g., anxiety is a derivative of fear)
2. Mood (e.g., irritation)
3. Attitudes (e.g., hatred)
4. Personality traits (e.g., hostile)
5. Disorders (e.g., depression)
6. Blends (e.g., romantic love blends interest, joy, and the sex drive)
7. Aspect of emotion (e.g., cause (homesickness) or consequence (avoidance))

Based on Reeve (2015, p. 351)

Basic emotions
<table>
<thead>
<tr>
<th>Fear</th>
<th>Anger</th>
<th>Disgust</th>
<th>Sadness</th>
<th>Interest</th>
<th>Joy</th>
</tr>
</thead>
<tbody>
<tr>
<td>potential of threat and harm</td>
<td>fighting off threat and harm</td>
<td>rejecting threat and harm</td>
<td>after threat and harm</td>
<td>motive involvement</td>
<td>satisfaction</td>
</tr>
</tbody>
</table>

Response to threat and harm

Based on Reeve (2015, pp. 347-349)

What good are the emotions?

Coping functions

Social functions

Based on Reeve (2015, pp. 352-353)
Functional views of emotional behaviour

<table>
<thead>
<tr>
<th>Fundamental Life Task</th>
<th>Emotion</th>
<th>Coping Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>Goal progress, attainment</td>
<td>Joy</td>
<td>Soothe, play</td>
</tr>
<tr>
<td>Separation or failure</td>
<td>Sadness</td>
<td>Reverse the separation or failure</td>
</tr>
<tr>
<td>Interference with goal pursuits</td>
<td>Anger</td>
<td>Overcome barriers and restrictions</td>
</tr>
<tr>
<td>Threat or change present</td>
<td>Fear</td>
<td>Protect, avoid</td>
</tr>
<tr>
<td>Stressed object</td>
<td>Disgust</td>
<td>Regulation</td>
</tr>
<tr>
<td>Novelty, novel involvement</td>
<td>Interest</td>
<td>Explore, take in information</td>
</tr>
<tr>
<td>Accomplishment</td>
<td>Pride</td>
<td>Acquire skills, persit</td>
</tr>
<tr>
<td>Judging another as inferior</td>
<td>Contempt</td>
<td>Maintain the social hierarchy</td>
</tr>
<tr>
<td>Feelings of inferiority</td>
<td>Shame</td>
<td>Protect, rescue the self</td>
</tr>
<tr>
<td>Behaving inadequately</td>
<td>Guilt</td>
<td>Reconsider and change behavior</td>
</tr>
</tbody>
</table>

Based on Reeve (2015, Table 12.2, p. 353)

Social functions of emotion

1. Communicate our feelings to others.
2. Influence how others interact with us.
3. Invite, smooth, & facilitate social interaction.
4. Create, maintain, & dissolve relationships.

Based on Reeve (2015, pp. 354-356)

Why do we have emotion?

- Do emotions help us to adapt and function?
- Or are they distracting and dysfunctional?
- Both are true - emotion is a masterpiece of evolutionary design but it also provide us with excess baggage
- How well emotions serve us depends on our emotional self-regulation

Based on Reeve (2015, p. 356)

Emotion regulation strategies

1. Situation selection: taking action to make one emotional experience more or less likely.
2. Situation modification: problem-focused coping, efforts to establish control, and searching for social support.
3. Attentional focus: redirecting attention within the situation.
4. Reappraisal: changing the way one thinks about the situation to modify the emotional impact.
5. Suppression: down-regulating one or more of the four aspects of emotion (bodily arousal, cognitive, purposive, expressive).

Based on Reeve (2015, pp. 357-361)

Can we voluntarily control our emotions?

- Controlling emotions is a challenge given their four aspects: feelings, arousal, purpose, and expression.
- Emotions are largely reactions to life events, so they are difficult to conjure without a trigger.
- If emotions are biologically-caused, then we may have little control.
- But if emotions are governed by cognition then a good deal of emotional experience could be voluntarily controlled.

Based on Reeve (2015, pp. 341-342)

Emotions and the brain

Video: (~2 mins)

https://www.youtube.com/watch?v=xNY0AAuHjHg
What is an emotion? (Ekman)

Video: (~7 mins)
https://www.youtube.com/watch?v=gaZDLOAg_Po

Lie detection – Lie to me trailer

Video: (~2 mins)
http://www.youtube.com/watch?v=GVG5AwZph-s

What is the difference between emotion & mood?

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Emotions</th>
<th>Moods</th>
</tr>
</thead>
<tbody>
<tr>
<td>Antecedents</td>
<td>Significant life events</td>
<td>Ill-defined</td>
</tr>
<tr>
<td>Action-Specificity</td>
<td>Specific</td>
<td>Influence cognition</td>
</tr>
<tr>
<td>Time course</td>
<td>Short-lived</td>
<td>Long-lived</td>
</tr>
</tbody>
</table>

Everyday mood
Positive affect and negative affect are independent ways of feeling.

Positive affect
- Pleasurable engagement
- Reward-driven, appetitive motivational system
- Approach behaviour
- Dopaminergic pathways

Negative affect
- Unpleasant engagement
- Punishment-driven, aversive motivational system
- Withdrawal behaviour
- Serotonergic & noradrenergic pathways

Diurnal variation in positive and negative affect

![Graph showing levels of positive and negative affect over time](https://example.com/graph.png)

Positive affect
Everyday, low-level, general state of feeling good.
Benefits of feeling good
- Prosocial behaviour
- Creativity
- Decision-making efficiency
- Sociability
- Persistence in the face of failure

Based on Reeve (2015, pp. 363-364)
Summary

- Emotions have 4 key components – feeling, body, motivational, expressive
- Emotions arise from activation of neural circuits in the sub-cortical brain
- From a biological POV, there is a small set of core emotions; from a cognitive POV there are many more emotions
- Emotions help us to cope, communicate, and survive
- Emotions are often automatic, but we can learn to self-regulate
- Emotion is short-lasting; mood is longer-lasting

References


Next lecture

Aspects of emotion (Ch 13)
- Biological
- Cognitive
- Social and cultural