Kognitionspsychologie II: Session 1

What is an emotion?

Rui Mata, FS 2025

Version: February 18, 2025

Learning Objectives for the Semester

- learn about central theories and models concerning the psychology of emotion and motivation
- become familiarized with common methods used in the psychology of emotion and motivation
- learn about examples of applications of the psychology of emotion and motivation to real-world contexts

Instructors

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Learning Objectives for this Session

- Discuss the importance of understanding affective processes
- Be aware of the lack of consensus regarding some characteristics of affective processes and become familiar with working definitions of affect, emotion, mood, and feelings
- Be aware of different perspectives on emotions: basic emotions, appraisal, psychological construction, social construction

The rise of affectivism

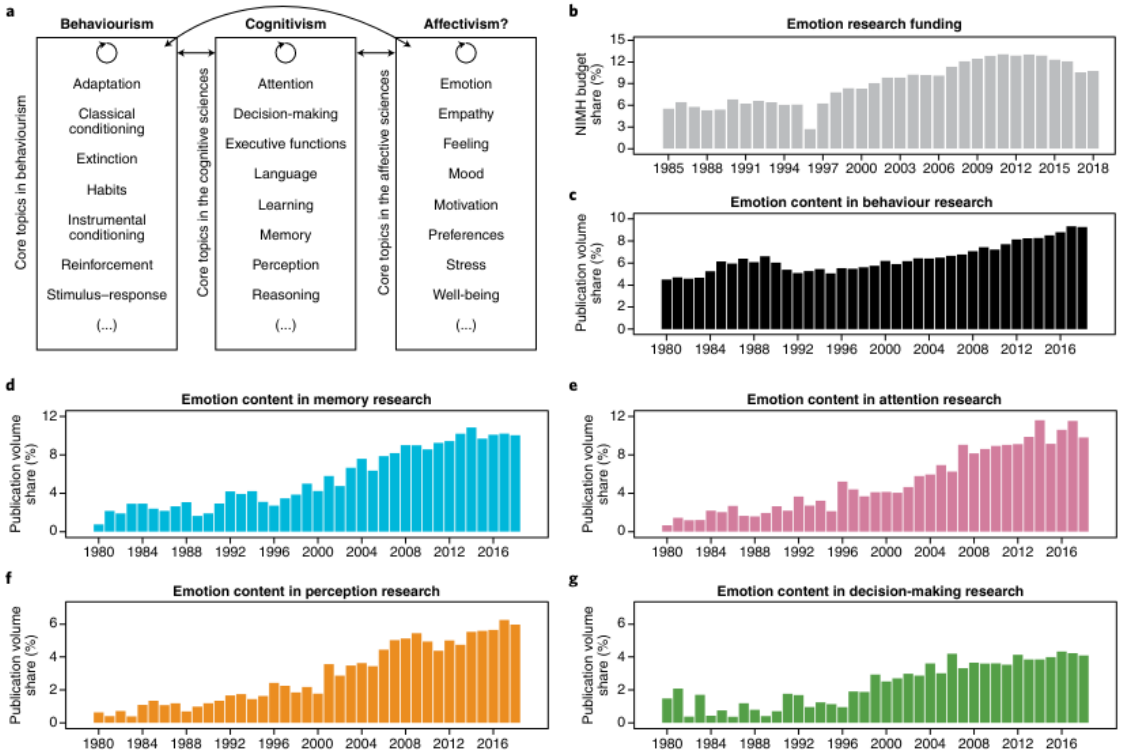
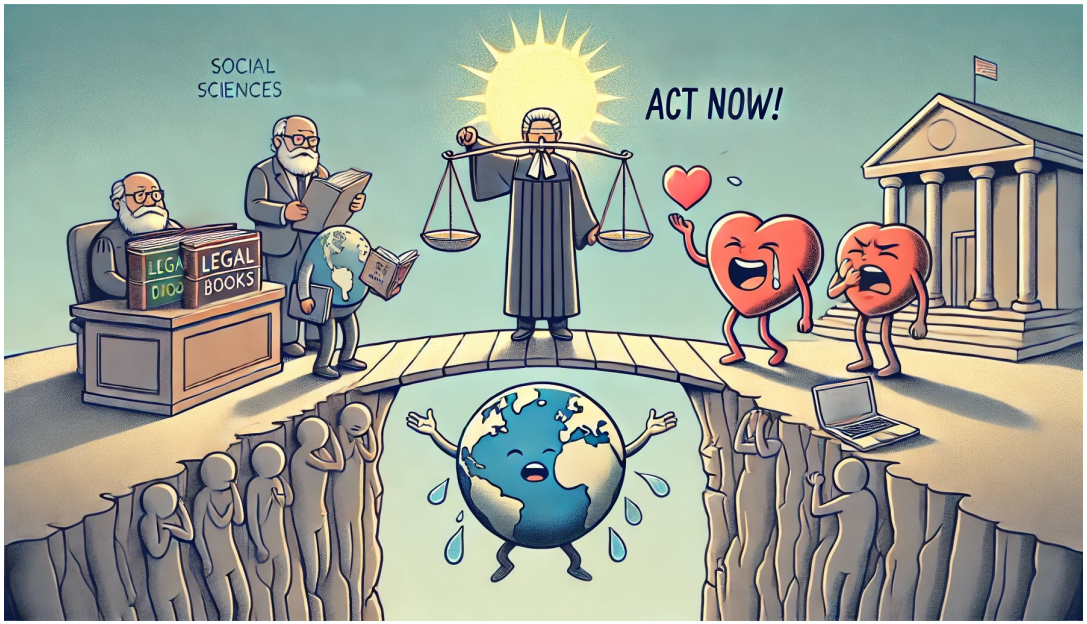


Fig. 1 | The scope and increasing impact of the affective sciences. a, Does the increasing research focus on affective processes and on their explanatory power mean we are now in the era of affectivism? The circular arrows represent how the study of the processes within each box improves our understanding of the core mechanisms typically investigated in behaviourism and in the cognitive and affective sciences, respectively. The bidirectional arrows between the boxes represent the idea that the mechanisms described in one box are important to understanding those described in the other boxes. **b**, The relative increase of NIMH funding spent on research on emotion since 1985. **c**, The extent to which publications with considerable emotion content grew faster than those concerning behaviour without emotion content since 1980. **d**–**g**, The increasing prominence of publications involving emotion as a percentage of publications in the respective area of inquiry on core cognitive mechanisms such as (**d**) memory, (**e**) attention, (**f**) perception, and (**g**) decision-making. The reference list focuses on Handbook-type publications to represent the depth and breadth of the affective sciences across many academic fields. For a list containing some books and papers that have either helped shape the field in many disciplines in the affective sciences or that have the potential to do so, please see the suggested reading list in the Supplementary Information.

Dukes, D., Abrams, K., Adolphs, R., Ahmed, M. E., Beatty, A., Berridge, K. C., Broomhall, S., Brosch, T., Campos, J. J., Clay, Z., Clément, F., Cunningham, W. A., Damasio, A., Damasio, H., D'Arms, J., Davidson, J. W., De Gelder, B., Deonna, J., De Sousa, R., … Sander, D. (2021). The rise of affectivism. *Nature Human Behaviour, 5*(7), 816–820. https://doi.org/10.1038/s41562-021-01130-8

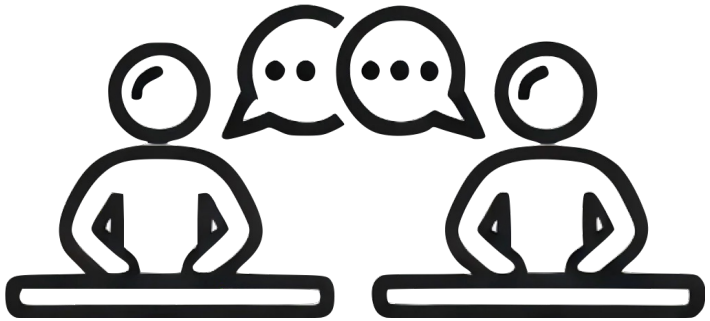
The rise of affectivism



Dukes et al. suggest that the affective sciences are reshaping key societal domains by highlighting the role of emotions in several areas. For example, legal scholars recognize how emotions influence legal decisions, while education research links emotional well-being to learning. In climate action, researchers increasingly recognize that emotions drive urgency and motivate change, and in conflict studies, emotions are seen as key forces shaping political and group behavior.

Dukes, D., Abrams, K., Adolphs, R., Ahmed, M. E., Beatty, A., Berridge, K. C., Broomhall, S., Brosch, T., Campos, J. J., Clay, Z., Clément, F., Cunningham, W. A., Damasio, A., Damasio, H., D'Arms, J., Davidson, J. W., De Gelder, B., Deonna, J., De Sousa, R., … Sander, D. (2021). The rise of affectivism. *Nature Human Behaviour, 5*(7), 816–820. https://doi.org/10.1038/s41562-021-01130-8

HOW WOULD YOU DEFINE AFFECT, EMOTION, MOOD, AND FEELINGS?



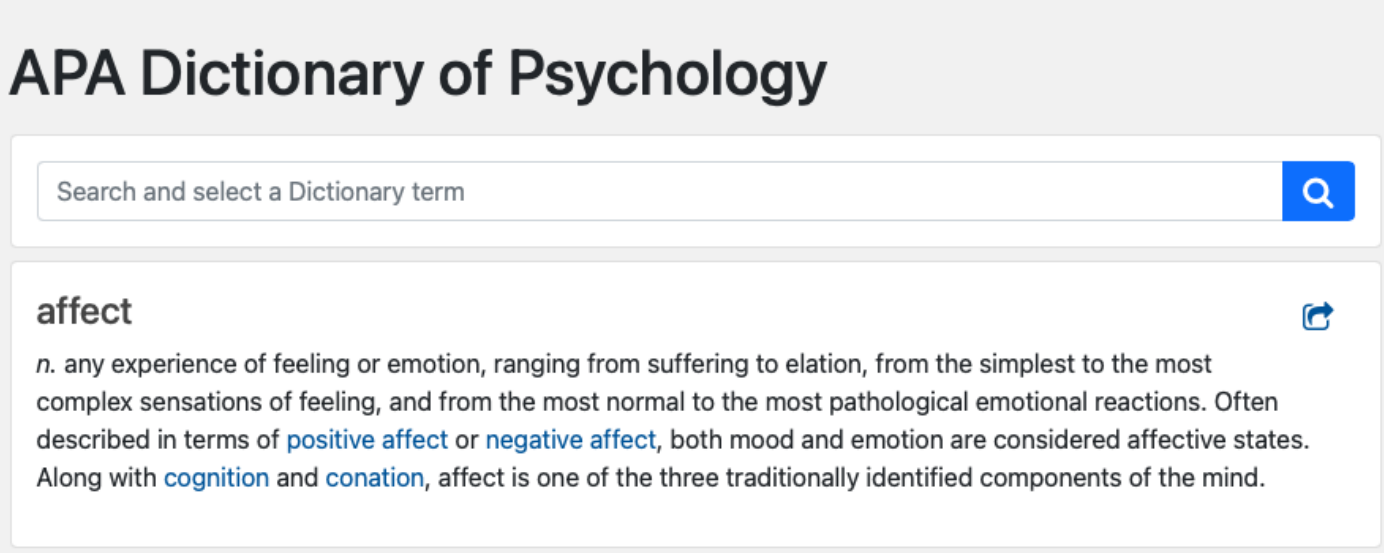
Lack of consensus concerning definitions

"Many psychological scientists and behavioral neuroscientists affirm that "emotion" influences thinking, decision-making, actions, social relationships, well-being, and physical and mental health. Yet there is no consensus on a definition of the word "emotion," and the present data suggest that it cannot be defined as a unitary concept. Theorists and researchers attribute quite different yet heuristic meanings to "emotion."

Izard, C. E. (2010). The many meanings/aspects of emotion: Definitions, functions, activation, and regulation. *Emotion Review, 2*(4), 363–370. https://doi.org/10.1177/1754073910374661

Affect

«Affect» or «affective experience» are typically general terms used to refer to mental states that can include emotions, moods, and feelings. The latter terms typically have more specific meanings/usages in the psychological literature (see next slides).

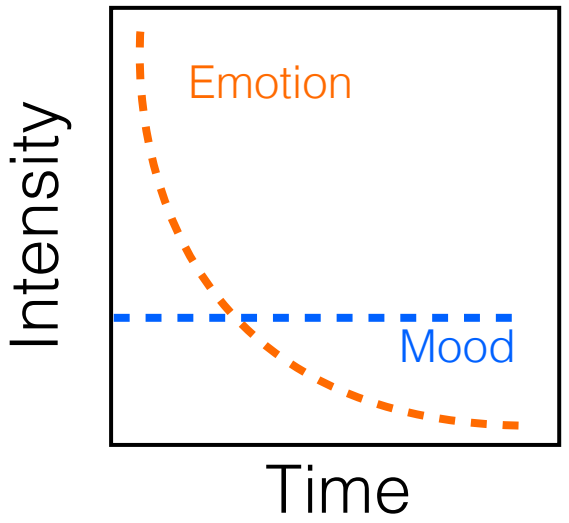


https://dictionary.apa.org/

Emotion and Mood

Summary of distinctions between emotion and mood

Criterion	*Emotion*	*Mood*
Anatomy	Related to the heart	Related to the mind
Awareness of cause	Individual is aware of cause	Individual may be unaware of cause
Cause	Caused by a specific event or object	Cause is less well defined
Clarity	Clearly defined	Nebulous
Consequences	Largely behavioural and expressive	Largely cognitive
Control	Not controllable	Controllable
Display	Displayed	Not displayed
Duration	Brief	Enduring
Experience	Felt	Thought
Intensity	Intense	Mild
Intentionality	About something	Not about anything in particular
Physiology	Distinct physiological patterning	No distinct physiological patterning
Stability	Fleeting and volatile	Stable
Timing	Rises and dissipates quickly	Rises and dissipates slowly



Emotions have episodic nature, are triggered by specific (internal or external) stimuli - hence, have intentionality (i.e., are about something) and have high(er) intensity and more limited temporal course relative to moods.

Beedie, C., Terry, P., & Lane, A. (2005). Distinctions between emotion and mood. ***Cognition & Emotion, 19***(6), 847–878. doi:10.1080/02699930541000057

Feelings

"(…) most affective scientists have settled on a distinction between feelings and emotions. Feelings are private conscious states that are not publicly observable and hence are inaccessible to science, whereas the emotions are measurable physiological and/or neural states that are often reflected in behavior."

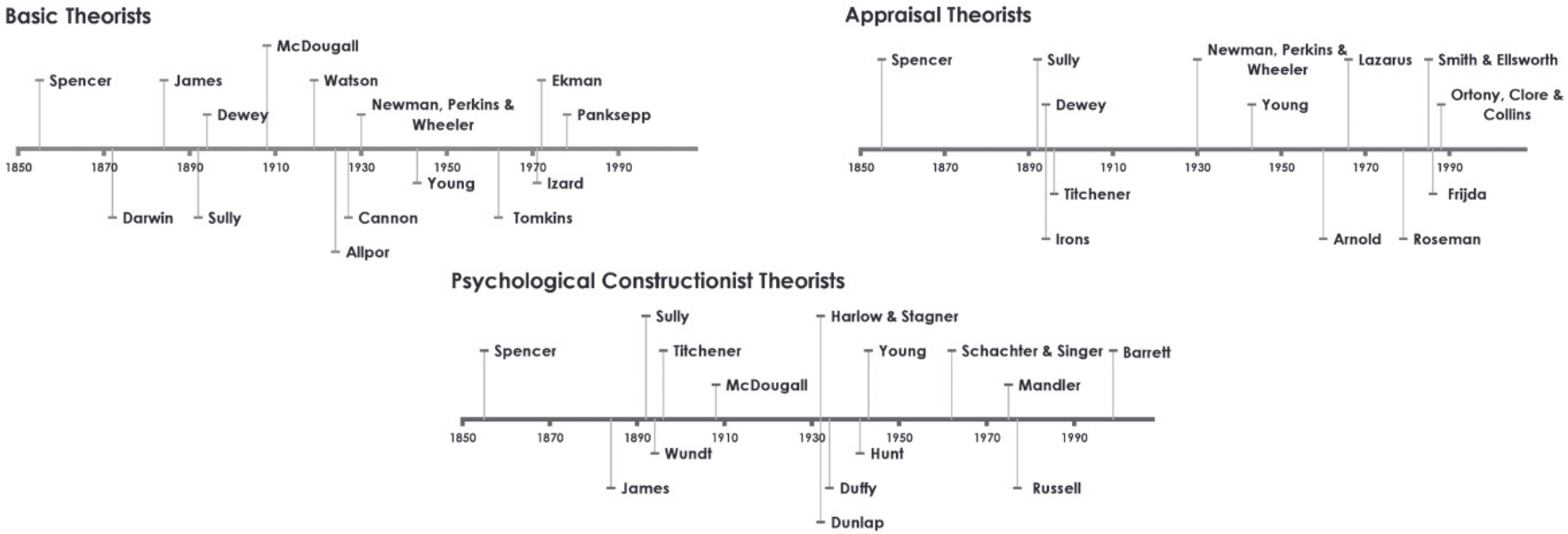
De Waal, F. B. M., & Andrews, K. (2022). The question of animal emotions. *Science, 375*(6587), 1351–1352. https://doi.org/10.1126/science.abo2378

An historical perspective

It is possible to document historical shifts on the perspectives concerning emotions, from Darwin's evolutionary perspective as adaptive and automatic survival mechanisms to more recent theories that emphasize cognitive dimensions as well as individual and cultural differences. The timeline of emotion research is sometimes divided into different eras:

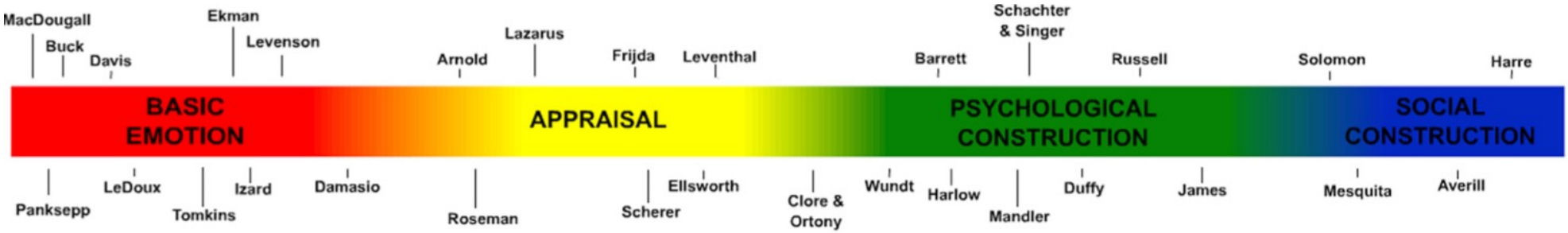
- The Golden Years (1855–1899): Emergence of early theories, including Darwin's work on emotional expressions.
- The Dark Ages (1900–1959): Decline in emotion research due to behaviorism's focus on observable behavior over internal states.
- The Renaissance to Present (1960–2008): Resurgence of emotion studies with cognitive and neuroscientific advancements, leading to competing models of emotion generation and regulation.

However, many of the ingredients of modern theories can be traced back to old(er) ideas (cf. Gendron & Feldman Barrett, 2009).



Gendron, M., & Feldman Barrett, L. (2009). Reconstructing the past: A century of ideas about emotion in psychology. *Emotion Review, 1*(4), 316–339. https://doi.org/10.1177/1754073909338877

Four perspectives on emotion



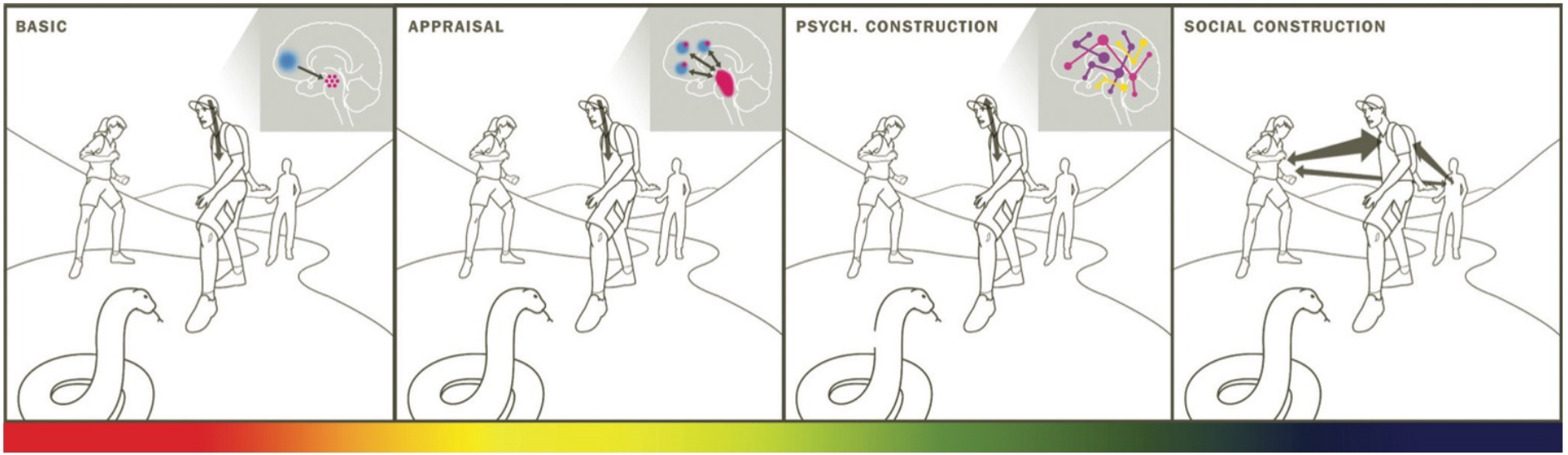


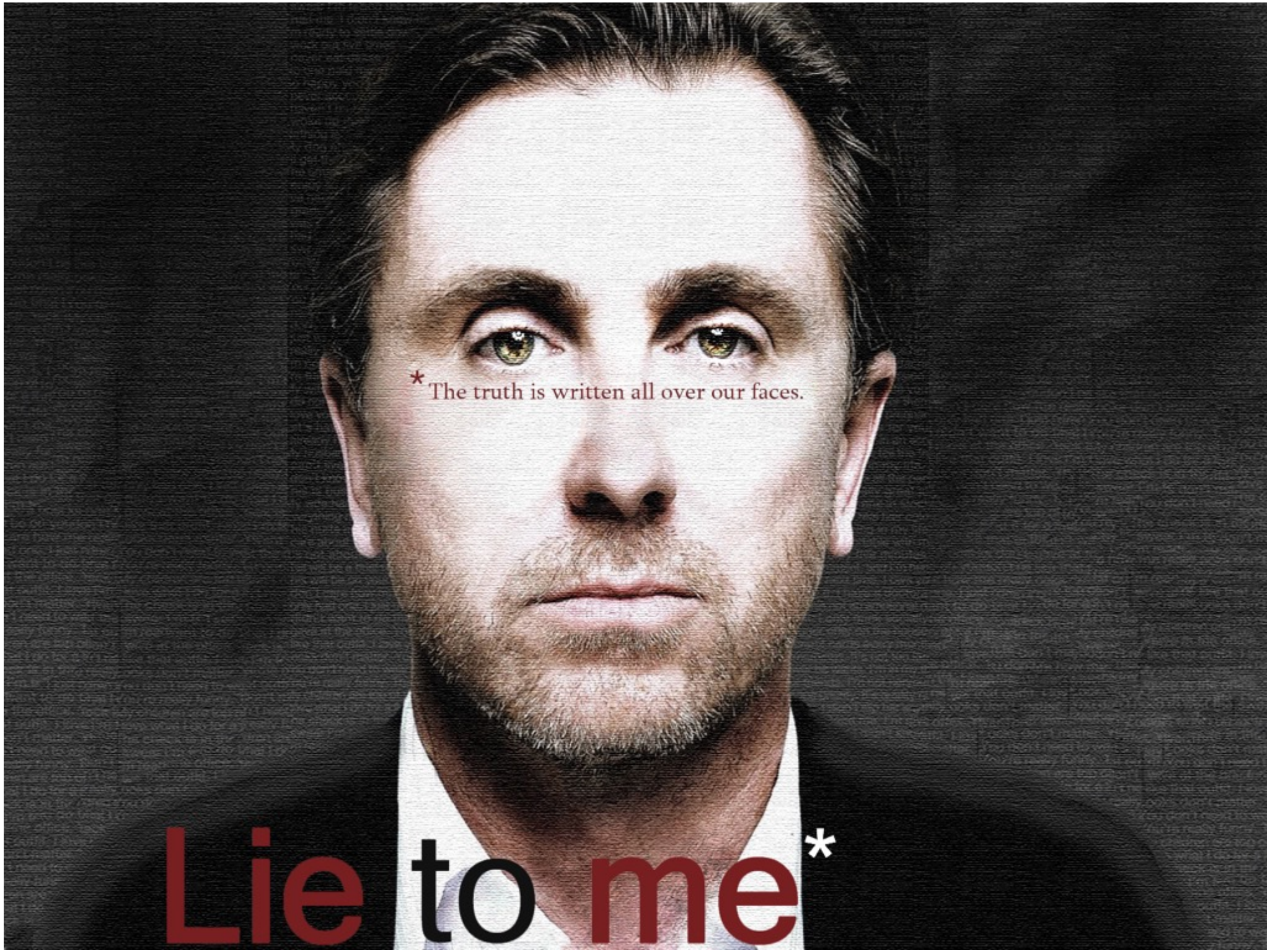
Figure 2. Schematic representations of four different perspectives on emotion generation and emotion regulation. Panels A and B: red represents emotion generation and blue represents emotion regulation. Panel C: different colors represent distributed networks for basic ingredients of the mind. Arrows depict the flow of information.

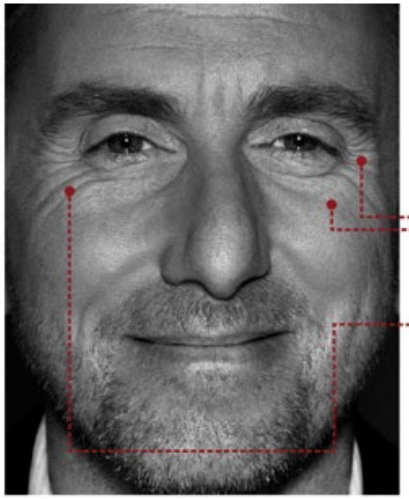
Gross, J.J, & Barrett, L.F. (2011). Emotion generation and emotion regulation: One or two depends on your point of view. *Emotion Review, 3*, 8–16.

Four perspectives on emotion

"It is widely agreed that emotion refers to a collection of psychological states that include subjective experience, expressive behavior (e.g., facial, bodily, verbal), and peripheral physiological responses (e.g., heart rate, respiration). It is also widely agreed that emotions are a central feature in any psychological model of the human mind. Beyond these two points of agreement, however, almost everything else seems to be subject to debate."

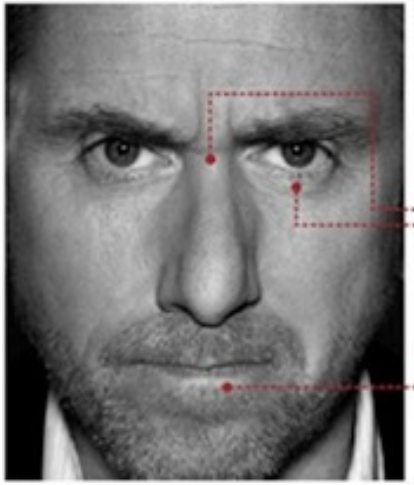
Gross, J.J, & Barrett, L.F. (2011). Emotion generation and emotion regulation: One or two depends on your point of view. *Emotion Review, 3*, 8–16.


*The truth is written all over our faces.
Lie to me*



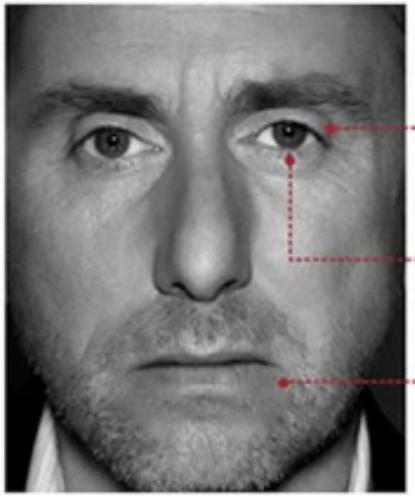
Enjoyment

1. crow's feet wrinkles
2. pushed up cheeks
3. movement from muscle that orbits the eye



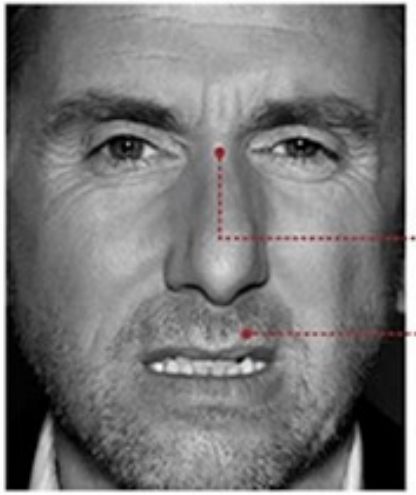
Anger

1. eyebrows down and together
2. eyes glare
3. narrowing of the lips



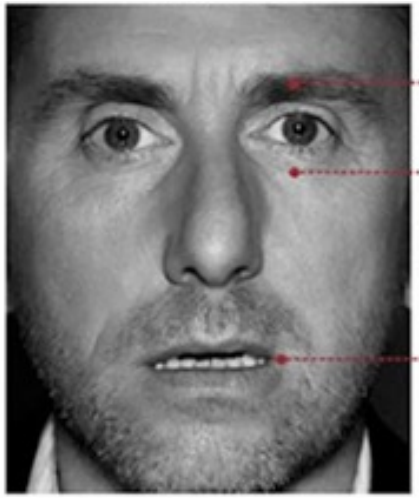
Sadness

1. drooping upper eyelids
2. losing focus in eyes
3. slight pulling down of lip corners



Disgust

1. nose wrinkling
2. upper lip raised



Surprise

Lasts for only one second:

1. eyebrows raised
2. eyes widened
3. mouth open

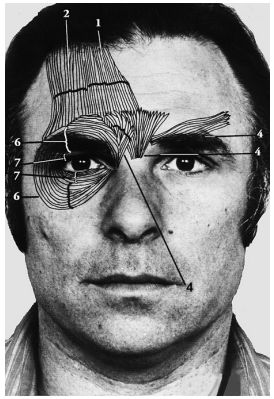
Fear

1. eyebrows raised and pulled together
2. raised upper eyelids
3. tensed lower eyelids
4. lips slightly stretched horizontally back to ears

Basic Emotions

"Emotions are viewed as having evolved through their adaptive value in dealing with fundamental life-tasks. Each emotion has unique features: signal, physiology, and antecedent events. Each emotion also has characteristics in common with other emotions: rapid onset, short duration, unbidden occurrence, automatic appraisal, and coherence among responses. These shared and unique characteristics are the product of our evolution, and distinguish emotions from other affective phenomena."

"Most of my presentation will describe nine characteristics of the emotions of **anger, fear, sadness**, **enjoyment**, **disgust**, and **surprise**. I will also raise the possibility that contempt, shame, guilt, embarrassment, and awe may also be found to share these nine characteristics."



Paul Ekman

Characteristics which Distinguish Basic Emotions from One Another and from Other Affective Phenomena

	Basic with regard to:	
	Distinctive States	*Biological Contribution*
1. Distinctive universal signals	x	x
2. Presence in other primates		x
3. Distinctive physiology	x	x
4. Distinctive universals in antecedent events	x	x
5. Coherence among emotional response		x
6. Quick onset		x
7. Brief duration		x
8. Automatic appraisal		x
9. Unbidden occurrence		x

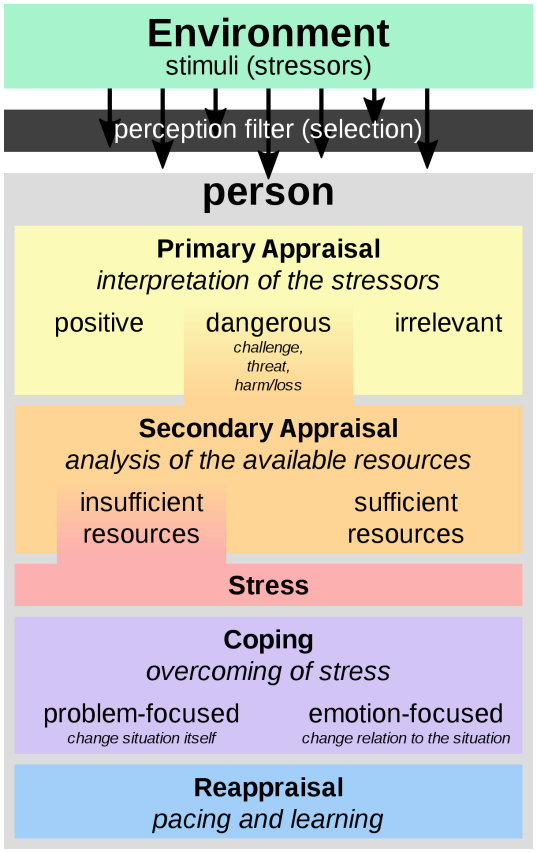
Ekman, P. (1992). An argument for basic emotions. ***Cognition & Emotion, 6***(3/4), 169-200. doi:10.1080/02699939208411068

Appraisals

Richard S. Lazarus

Susan Folkman

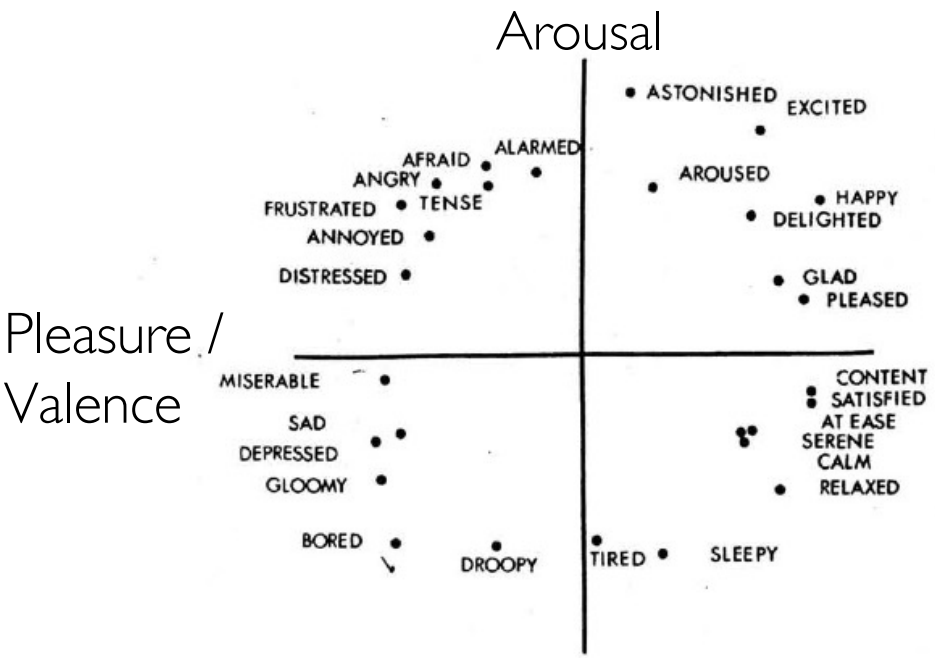
Lazarus and Folkman (1984) conducted a number of experiments in which they used movies to produce emotional reactions and stress (e.g., genital mutilation). A number of manipulations were used to change cognitive interpretation (e.g., narrator comments). Lazarus and Folkman found that participants' interpretations had a crucial role in the emotional experience and behaviour leading Lazarus and Folkman to propose a theory of "cognitive appraisal" which is based on the importance of individuals' appraisals (cognitive interpretations of the environment). This theory has had many uses in clinical and educational practice, particularly in the form of reappraisal interventions (see figure on the right).



According to such approaches, appraisals are cognitive phenomena (i.e., "part of the cloud of associates that each perceived or thought of informational element stirs") and respective "action tendencies" may have adaptive/maladaptive character depending on either universal (anger -> fight) or individually learned patterns.

Lazarus, R.S., & Folkman, S. (1984). Stress, appraisal and coping. New York: Springer.

Psychological Construction



The circumplex model of affect proposes that all affective states arise from cognitive interpretations of core neural sensations that are the product of two independent (neurophysiological) systems. This model stands in contrast to theories of basic emotions, which posit that a discrete and independent (neural) system subserves every emotion.

"At the heart of emotion, mood, and any other emotionally charged event are states experienced as simply feeling good or bad, energized or enervated. These states—called core affect—influence reflexes, perception, cognition, and behavior and are influenced by many causes internal and external, but people have no direct access to these causal connections. Core affect can therefore be experienced as free-floating (mood) or can be attributed to some cause (and thereby begin an emotional episode). These basic processes spawn a broad framework that includes perception of the core-affect-altering properties of stimuli, motives, empathy, emotional meta-experience, and affect versus emotion regulation; it accounts for prototypical emotional episodes, such as fear and anger, as core affect attributed to something plus various nonemotional processes."

Russell, J.A. (1980). A circumplex model of affect. ***Journal of Personality and Social Psychology, 39***, 1161–1178.

Social Construction

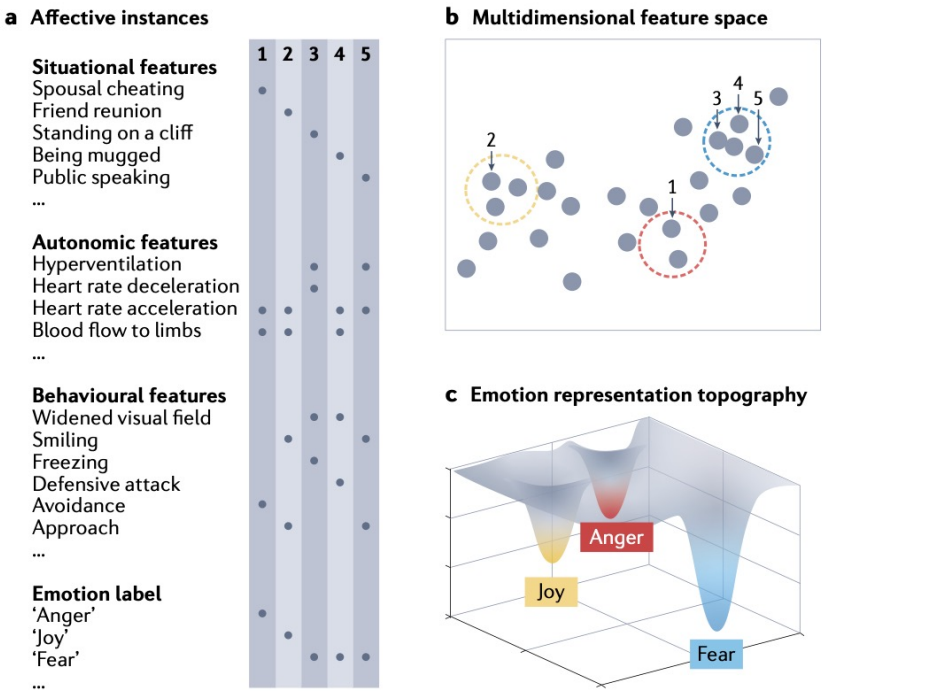


Fig. 1 | **A constructionist framework of emotion representation. a** | Emotion categories name populations of situated instances with features that vary between categories (anger, joy and fear) and within categories (different instances of fear). For example, an instance of anger at spousal cheating (column 1) shares some features with joy at a reunion with a friend (column 2) and fear while being mugged (column 3). Instances of fear evoked by different situations also differ in their features (columns 3, 4 and 5). **b** | Emotions emerge from multidimensional feature space, and the similarity between emotional instances can be represented as the distance between grey circles in that feature space. **c** | Emotion feature space is warped by experience and concept use. Experience of many similar instances and socially learned categories creates a mnemonic category, which are visualized as shaded attractor-basins. Attractor-basins guide how people interpret future situated instances and warps people's perceptions of similarity between these instances.

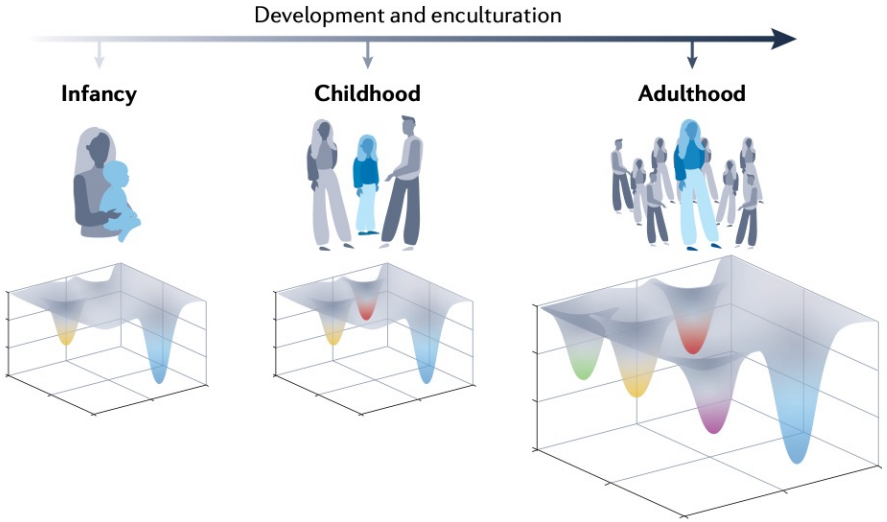


Fig. 2 | **The impact of social learning on emotion across development.** Across development, social learning opportunities influence people's exposure to situated instances and the social categories that people use to make meaning of and communicate these instances. The figure depicts representations of valence in infancy (where the source of social learning is the primary caregivers), the development of emotion concepts in early childhood (when sources of social learning might expand to multiple caregivers, teachers and peers), and an adult emotion concept topography which varies by individual (where sources of social learning are the many other adults in one's own and other cultural groups).

The social construction view on emotion posits that emotions are cultural artifacts that are transmitted through social learning within and between cultural groups. This view suggests that emotions emerge from the confluence of biology and culture, and that they can be modeled as psychological phenomena that build on basic human abilities but evolve under local cultural and ecological pressures.

Lindquist, K.A., Jackson, J.C., Leshin, J., Satpute, A.B. & Gendron, M. (2022). The cultural evolution of emotion. *Nature Reviews Psychology*, 1, 669–681 (2022). https://doi.org/10.1038/s44159-022-00105-4

Core assumptions of the four emotion perspectives

		Basic	*Appraisal*	*Psychological construction*	*Social construction*
1.	Are emotions unique mental states?	Yes	Yes	No	Varies by model
2.	Are emotions caused by special mechanisms?	Yes (e.g., affect programs)	Varies by model	No (basic ingredients vary by specific model)	No
3.	Is each emotion caused by a specific brain circuit?	Yes (subcortical circuit for each emotion)	No	No (distributed brain network for each ingredient)	No
4.	Do emotions have unique manifestations (in face, voice, body state)?	Yes	Varies by model	No	No
5.	Does each emotion have a unique response tendency?	Yes	In most models	No	No
6.	Is experience a necessary feature of emotion?	Varies by model	Yes	Yes	No
7.	What is universal?	Emotions are universal	Appraisals are universal	Psychological ingredients are universal	Influence of social context is universal
8.	How important is variability in emotions?	Epiphenomenal	Varies by model	Emphasized	Present, but not central
9.	Are emotions shared with non-human animals?	Yes	Some appraisals are shared	Affect is shared	No
10.	How did the evolution shape emotions?	Specific emotions evolved	Cognitive appraisals evolved	Basic ingredients evolved	Cultural and social structure evolved

Gross, J.J, & Barrett, L.F. (2011). Emotion generation and emotion regulation: One or two depends on your point of view. *Emotion Review, 3*, 8–16.

Four perspectives on emotion

Perspective	Nature of Emotions	Key Mechanism	Role of Culture
Basic Emotions (Ekman)	Biologically hardwired, universal, and innate	Evolutionary survival mechanisms; each emotion (e.g., anger, sadness, fear) has a unique expressions and physiological basis	Minimal (emphasizes universality)
Appraisal Theory (Lazarus)	Emotions arise from cognitive evaluations (appraisals) of events	Appraisals shape emotional responses by assigning meaning to situations	Moderate (personal and contextual factors influence interpretation)
Psychological Construction (Russell)	Emotions emerge from basic psychological ingredients (core affect: valence + arousal)	Ongoing constructive process that combines core affect with context and cognition	Moderate (cultural learning shapes how core affect is interpreted)
Social Construction (Lindquist)	Emotions are cultural artifacts and social performances	Learned emotional expressions and behaviors, shaped by social norms and context	Strong (culture defines emotions, their meaning, and expression)

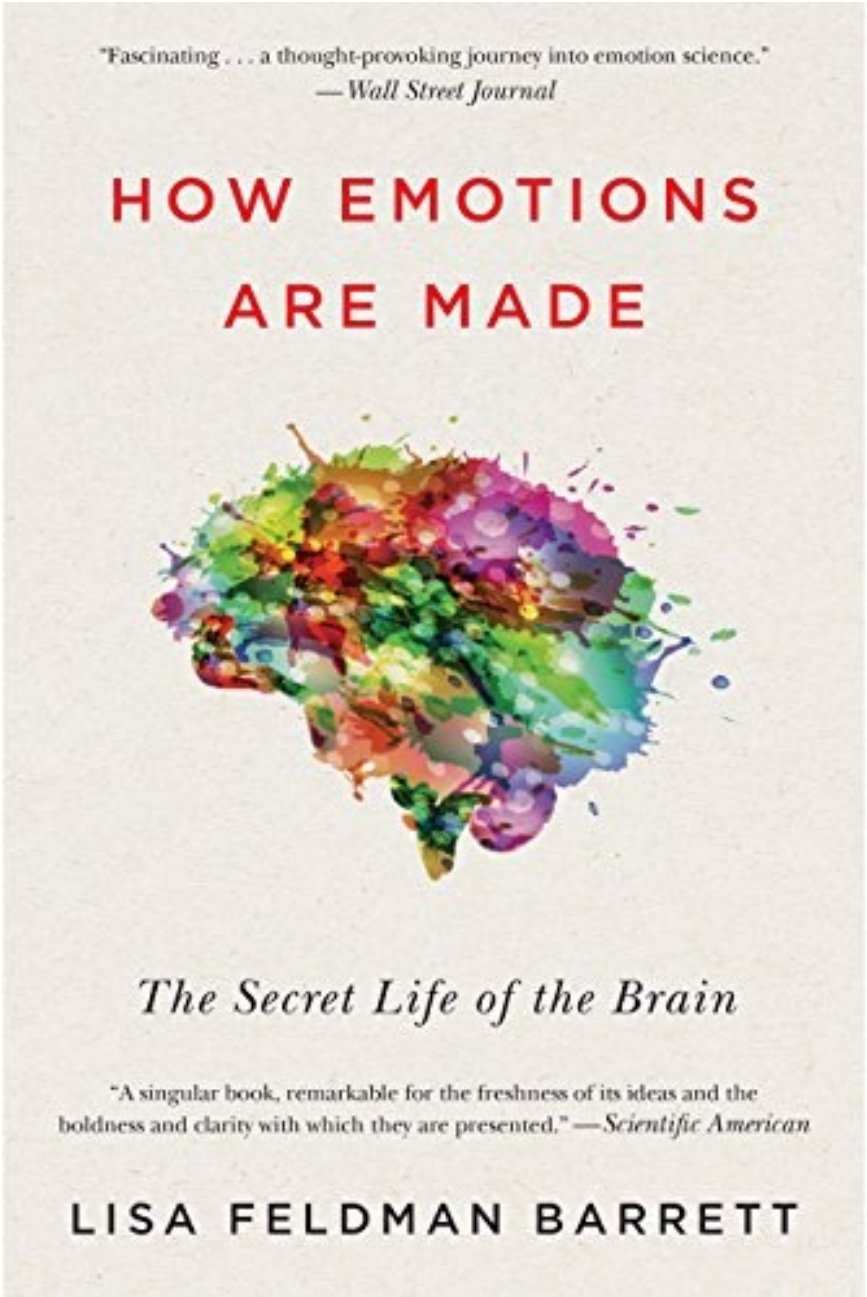
Gross, J.J, & Barrett, L.F. (2011). Emotion generation and emotion regulation: One or two depends on your point of view. *Emotion Review, 3*, 8–16.

Summary

- Affective processes have become central to theorizing in psychology and are now commonly considered in applications in the behavioral and social sciences (education, legal decisions, climate action)

- There is still a lack of consensus regarding some characteristics of affective processes and terminology but working definitions of key terms exists (affect, emotion, mood, feelings)

- It is possible to distinguish (at least) four major perspectives on emotions: **Basic Emotions,** which sees emotions as biologically hardwired, universal, and linked to specific responses (facial expressions, physiology); **Appraisal**, which sees emotions as the result of cognitive evaluations (appraisals) of events, with interpretations shaping emotional experiences; **Psychological construction**, which sees emotions as arising from basic psychological ingredients that are not specific to affective experience; **Social construction**, which see emotions as largely shaped by cultural and social contexts, emphasizing the role of learned emotional expressions and experience.


"Fascinating . . . a thought-provoking journey into emotion science."
—Wall Street Journal
HOW EMOTIONS ARE MADE
The Secret Life of the Brain
"A singular book, remarkable for the freshness of its ideas and the boldness and clarity with which they are presented." —Scientific American
LISA FELDMAN BARRETT