

IBC Quiz 3 Preparation

Class Discussion

Summary of the class discussion by Keval Jain:

Other than what's mentioned in the pdf, the discussions that day -

Maam made us read the passages (Slide 2) and asked us the questions- What emotions did you feel after reading? Elaborate? How were the characters feeling. The answers were subjective and there was no right or wrong.

After defining emotions (Slide 4) she went on to explain the difference between emotions and mood. She said that emotions are more of a reflex response to a particular incident, whereas mood is something which is over a longer period of time. Vansh suggested that Mood might be a weighted average of the emotions felt overtime. I countered by saying that, over a period of time, there might occur only incidents to which I have a happy reaction to, but can still be overall sad in the period, and maybe a "average" notion might not be correct. Maam just listened, did not give her opinion, but she at the very least well received Vansh's idea.

On slide 18, maam showed a positive feedback cycle for Positive Emotion. The slide is self explanatory. However what's not mentioned in the slides is that this theory is refuted. The reason being, there are other emotions such as anxiety, fear etc which would also lead to enhanced survival etc. So you cannot just draw a cycle around Positive Emotions as that's not telling the full story. I asked, if any such cycle regardless the emotion should even be possible, as due to Darwin's Theory, if you have an advantageous trait, then over thousands of years, the trait becomes more common (Natural Selection etc). Hence everyone should be overtly happy, which is clearly not the case. I used the example of vestigial organs, to explain this, stating that overtime they lost their function, similarly there should just not be negative emotions then. Maam's answer was that in the case of vestigial organs there are only 2 possibilities, they are functional or non functional. But in this case there are many many different emotions which all contribute so drawing such a parallel would not be accurate.

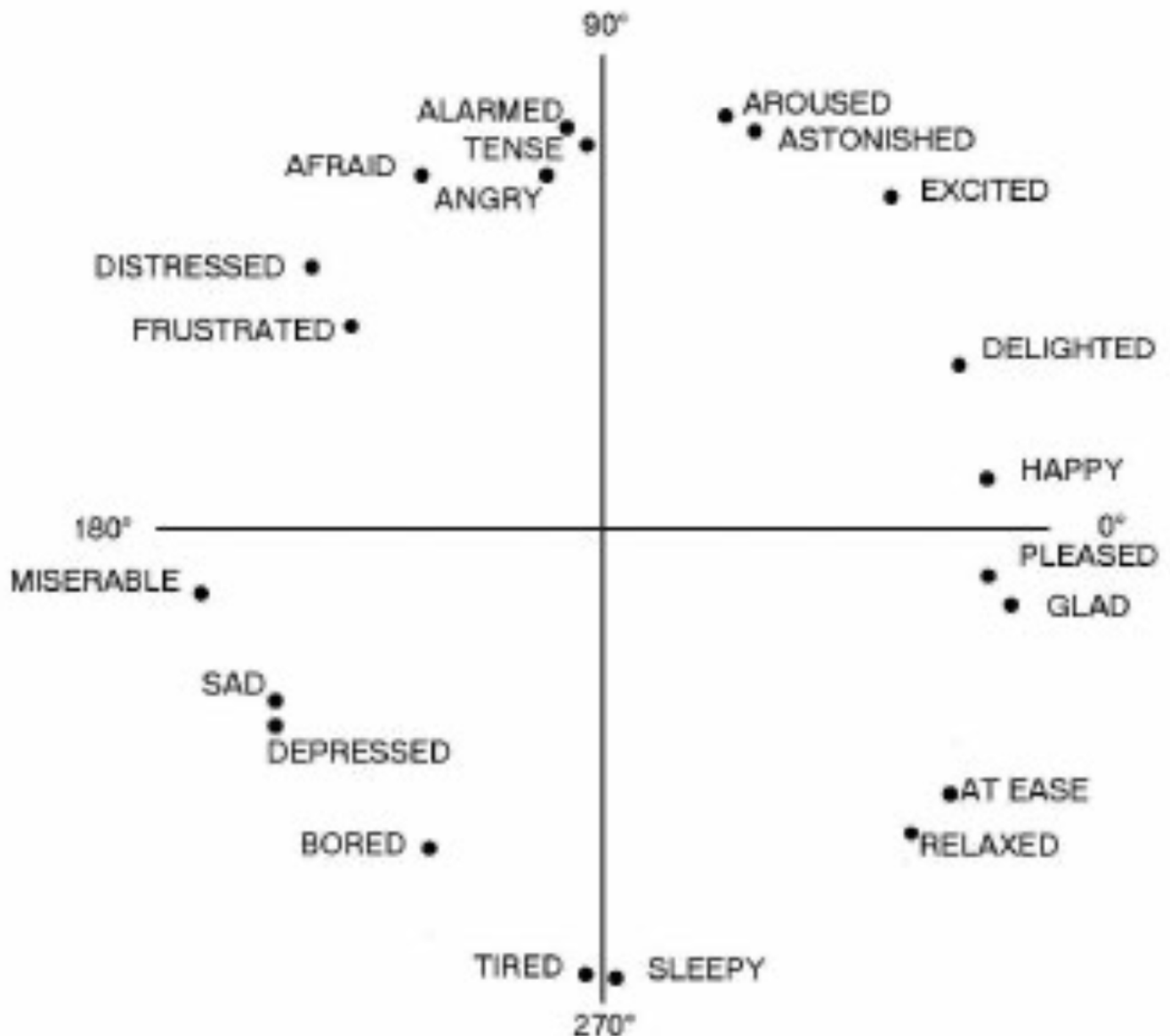
The main discussion was on slide 9. (This was last thing discussed, as slides were not presented in order.) To be clear from the start, the answer to the question if whether you can experience without expressing is open-ended and is debateable (at least that's how maam portrayed it). However maam felt more inclined to the side of "You cannot fully experience something without expressing it". Vrinda's argument was that there are different types of people and some less expressive/extroverted, and it should be possible for them to experience without expressing. Continuation debate was that sometimes you can just be "happy" without showing you are "happy". You can keep it to yourself and don't have to express it in any way, right? The counter was is not expressing even possible? Maam said that for completely different situations of heightened emotions (extreme fear vs extreme happiness) the hormones released are the same. (maam said it's a very grey area, but (it felt like) she believed it is true).

Now say there is a lion in front of you (extreme fear) and a case when you see your best friend of 30 years after a long time (extreme happiness), since (it is believed) the hormones released are the same, what differentiates your response? How do you know that you should "feel fear" from a lion and "feel happy" from your best friend? She said its the mind (not the initial hormones), which is deciding how you should feel based on various factors. The class kinda ended abruptly in the middle of all this, and the discussion discontinued :(But what I could make out of it, was somewhere during the mind deciding the emotional response to a particular stimulus, you are bound to express it to some extent. That expression doesn't have to be you telling someone, or jumping in joy, but it could be something minute, which is bound to happen.

Best of luck

2D Model of Emotion (Circumplex Model)

A CIRCUMPLEX MODEL OF AFFECT



The 2D model of emotion, also known as the circumplex model of emotion, is a graphical representation that categorizes emotions based on two dimensions: valence and arousal.

- **Valence:** Valence refers to the positive or negative quality of an emotion, indicating whether an emotion is pleasant or unpleasant. Emotions that are considered positive or pleasant, such as joy, love, and contentment, are located towards the upper part of the 2D model, while emotions that are considered negative or unpleasant, such as anger, fear, and sadness, are located towards the lower part of the model. The midpoint of the valence dimension represents a neutral emotional state.

- **Arousal:** Arousal refers to the level of physiological activation or intensity associated with an emotion. Emotions that are highly arousing, such as excitement, surprise, and fear, are located towards the right side of the 2D model, while emotions that are less arousing, such as calmness, serenity, and boredom, are located towards the left side of the model. The midpoint of the arousal dimension represents a state of low arousal or calmness.

The 2D model of emotion is typically represented as a circular or oval shape, with emotions positioned within the circle or oval based on their location on the valence and arousal dimensions. Emotions that are close to each other on the model are considered to be related in terms of their emotional characteristics. For example, emotions such as anger, fear, and disgust are typically located close to each other, as they are considered negative and highly arousing emotions. In contrast, emotions such as joy, love, and contentment are located close to each other, as they are considered positive and less arousing emotions.

The 2D model of emotion provides a simplified yet useful framework for understanding and categorizing a wide range of emotions, and it has been widely used in psychology, neuroscience, and other fields to study and discuss human emotions. However, it's important to note that emotions are complex and multifaceted experiences that cannot be fully captured by any single model or framework.

Emotion is Embodied

The concept of "emotion is embodied" suggests that emotions are not solely limited to mental or cognitive processes, but are also experienced and expressed through the body. This perspective emphasizes the interconnectedness of the mind and body in the experience and expression of emotions, and highlights the important role of the body in shaping our emotional experiences.

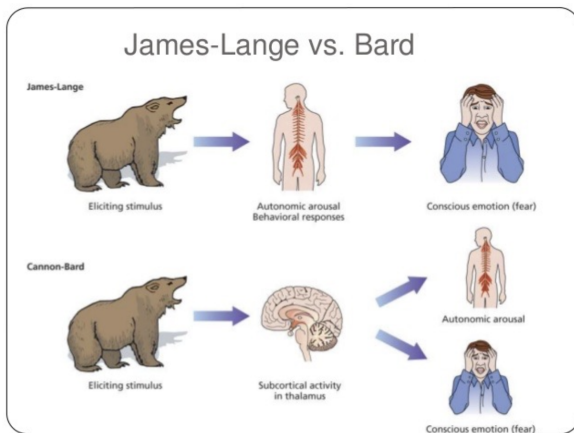
Emotions involve a complex interplay between cognitive, physiological, and behavioral processes. When we experience an emotion, it involves changes in our thoughts, feelings, bodily sensations, and behaviors. These components are not separate, but rather integrated in a dynamic and reciprocal manner. The embodied nature of emotion can be seen in several ways:

- **Physiological Responses:** Emotions are associated with physiological responses in the body, such as changes in heart rate, blood pressure, respiration, muscle tension, and hormonal activity. For example, fear may be accompanied by an increased heart rate, tense muscles, and rapid breathing, while joy may be accompanied by a relaxed body and a sense of warmth. These physiological responses are not just consequences of emotion, but are an integral part of the emotion itself, and they can influence and be influenced by our emotional experiences.

- **Sensory and Bodily Sensations:** Emotions are often associated with sensory and bodily sensations, such as sensations in the stomach, chest, or throat, as well as facial expressions, gestures, and posture. For example, we may feel "butterflies in the stomach" when we're anxious, or we may cry when we're sad. These sensations and expressions are not just external manifestations of emotion, but are part of our subjective experience of emotion, and they can contribute to the meaning and intensity of our emotional experiences.
- **Embodied Cognition:** Our body can also play a role in shaping our emotional experiences through embodied cognition, which refers to the ways in which our bodily experiences and movements influence our thoughts, perceptions, and emotions. For example, research has shown that facial expressions can influence our emotional experiences, with smiling leading to increased positive emotions and frowning leading to increased negative emotions. Similarly, our body posture and movement can influence our emotional state, with upright posture associated with increased positive emotions and slumped posture associated with increased negative emotions.
- **Expressive Behaviors:** Emotions are often expressed through bodily behaviors, such as facial expressions, gestures, vocal tone, and body language. These expressive behaviors can convey our emotional state to others and can also influence our own emotional experiences. For example, smiling can not only indicate happiness to others, but it can also activate neural pathways associated with positive emotions in our own brains, leading to increased subjective feelings of happiness.

In summary, the embodied nature of emotion emphasizes the integration of cognitive, physiological, sensory, and behavioral processes in our emotional experiences. It suggests that our body is not just a passive vessel that responds to emotions, but an active participant that shapes and is shaped by our emotional experiences. This perspective highlights the importance of considering the body and its role in understanding the complexity and richness of human emotions.

James-Lange, Cannon-Bard & Schachter-Singer Theory of Emotion



The James-Lange theory, the Cannon-Bard theory, and the Schachter-Singer two-factor theory are three classical theories of emotion that provide different perspectives on how emotions are experienced and expressed. Let's explore each theory and highlight their similarities and differences.

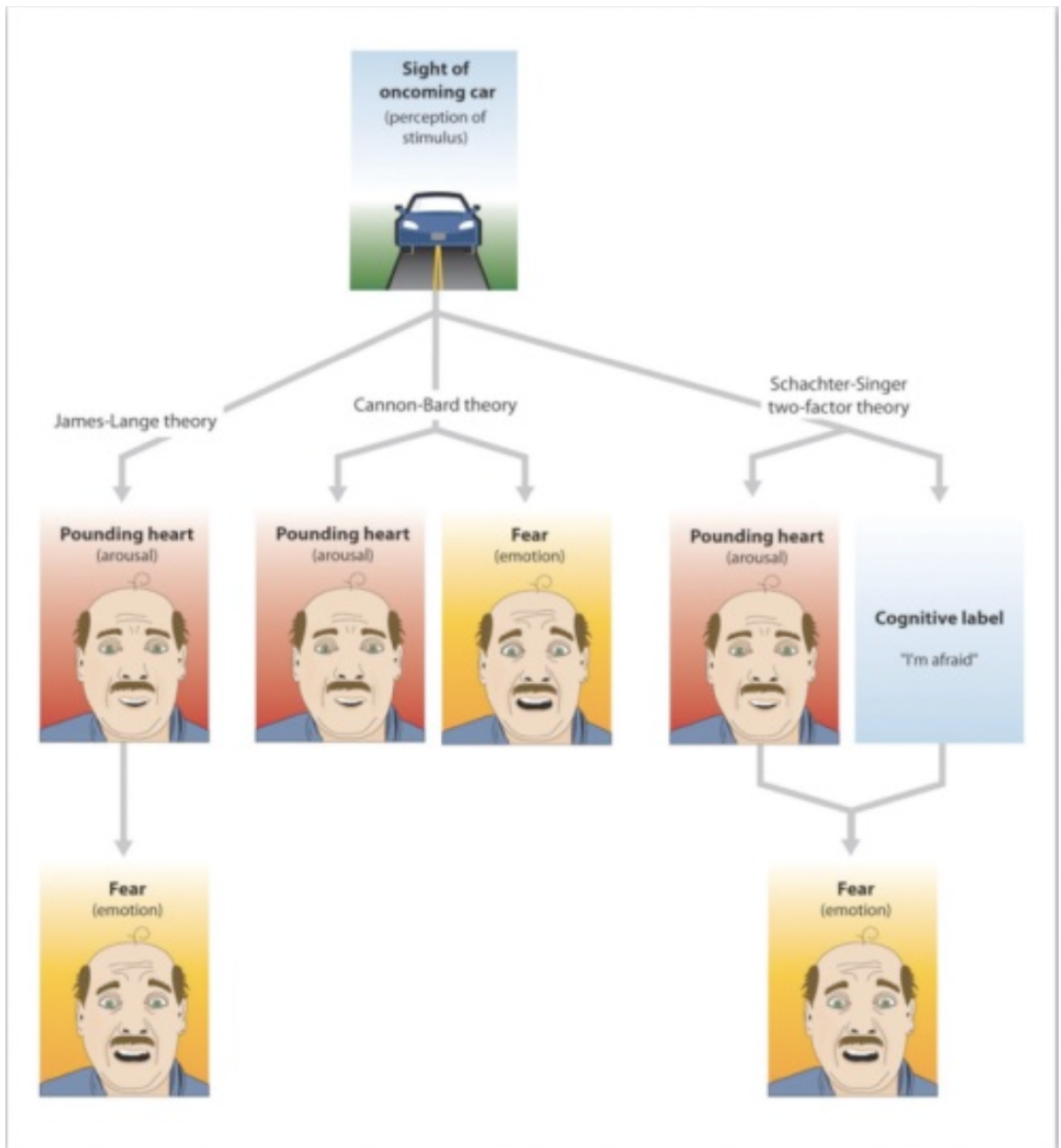
- **James-Lange Theory:** The James-Lange theory, proposed by psychologist William James and physiologist Carl Lange in the late 19th century, suggests that emotions are the result of physiological responses to external stimuli. According to this theory, emotions are experienced after the body's physiological response to a specific stimulus. In other words, the theory suggests that we first experience a physiological reaction to an event, and then we interpret that physiological reaction as an emotion. For example, if we encounter a dangerous situation, our body responds with physiological changes such as increased heart rate and trembling, and we then interpret those bodily changes as fear.
- **Cannon-Bard Theory:** The Cannon-Bard theory, proposed by physiologist Walter Cannon and psychologist Philip Bard in the 1920s, suggests that emotions and physiological responses occur simultaneously and independently in response to a stimulus. According to this theory, when we encounter a stimulus, both our emotional experience and physiological response occur simultaneously, but independently. For example, if we encounter a threatening situation, we may experience fear at the same time as our body shows physiological responses such as increased heart rate, without one causing the other.
- **Schachter-Singer Two-Factor Theory:** The Schachter-Singer two-factor theory, also known as the cognitive arousal theory, proposed by psychologists Stanley Schachter and Jerome Singer in the 1960s, suggests that emotions are the result of both physiological arousal and cognitive interpretation of that arousal. According to this theory, when we encounter a stimulus, our body responds with physiological arousal, but we rely on cognitive processes to interpret the arousal and label it as a specific emotion. For example, if we experience physiological arousal, such as increased heart rate, we may interpret it as fear or excitement depending on the context and our cognitive appraisal of the situation.

Now, let's compare and contrast these theories:

- **Role of Physiological Arousal:** The James-Lange theory and the Cannon-Bard theory both emphasize the role of physiological arousal in the experience of emotion. The James-Lange theory suggests that physiological arousal is necessary for the experience of emotion, while the Cannon-Bard theory suggests that physiological arousal and emotional experience occur simultaneously and independently. In contrast, the Schachter-Singer two-factor theory suggests that physiological arousal is only one component of the emotional experience, and it needs to be interpreted cognitively to be labeled as a specific emotion.
- **Role of Cognitive Interpretation:** The Schachter-Singer two-factor theory highlights the role of cognitive interpretation in the experience of emotion. It suggests that our cognitive appraisal of a situation, including our beliefs, thoughts, and memories, plays a crucial role in how we interpret and label our emotional experiences. The James-Lange theory and the Cannon-Bard theory do not emphasize the role of cognitive interpretation as explicitly.
- **Temporal Sequence:** The James-Lange theory proposes a sequential sequence, suggesting that physiological arousal comes first, followed by the emotional experience. The Cannon-Bard theory proposes a simultaneous sequence, suggesting that physiological arousal and emotional experience occur at the same time. The Schachter-Singer two-factor theory also proposes a sequential sequence, where physiological arousal occurs first, followed by cognitive interpretation and labeling of the emotion.
- **Independence vs. Integration:** The Cannon-Bard theory suggests that physiological arousal and emotional experience are independent of each other and can occur separately. In contrast, the James-Lange theory suggests that physiological arousal is necessary for the emotional experience to occur. The Schachter-Singer two-factor theory proposes that physiological arousal and cognitive interpretation are integrated and work together to form the emotional experience.
- **Emphasis on Cognitive Appraisal:** The Schachter-Singer two-factor theory places a significant emphasis on cognitive appraisal, suggesting that our thoughts and beliefs about a situation play a crucial role in how we interpret and experience emotions. In contrast, the James-Lange theory and the Cannon-Bard theory do not explicitly emphasize the role of cognitive appraisal in the emotional experience.

In summary, while all three theories acknowledge the role of physiological arousal in the experience of emotion, they differ in their emphasis on the temporal sequence, the role of cognitive interpretation, and the relationship between physiological arousal and emotional experience. The James-Lange theory suggests that physiological arousal is necessary for the emotional experience, the Cannon-Bard theory proposes that physiological arousal and emotional experience occur simultaneously but independently, and the Schachter-Singer two-

factor theory highlights the role of cognitive appraisal in interpreting physiological arousal and labeling emotions. Each theory provides a unique perspective on the complex and multifaceted nature of human emotions, and they have contributed to our understanding of how emotions are experienced and expressed.



Summary of paper on Expansion of Emotional Models

The abstract of the paper as is:

Recent models of emotion recognition suggest that when people perceive an emotional expression, they partially activate the respective emotion in themselves, providing a basis for the recognition of that emotion. Much of the focus of these models and of their evidential basis has been on sensorimotor simulation as a basis for facial expression recognition the idea, in short, that coming to know what another feels involves simulating in your brain the motor plans and associated sensory representations engaged by the other person's brain in producing the facial expression that you see. In this review article, we argue that simulation accounts of emotion recognition would benefit from three key extensions. First, that fuller consideration be given to simulation of bodily and vocal expressions, given that the body and voice are also important expressive channels for providing cues to another's emotional state. Second, that simulation of other aspects of the perceived emotional state, such as changes in the autonomic nervous system and viscera, might have a more prominent role in underpinning emotion recognition than is typically proposed. Sensorimotor simulation models tend to relegate such body-state simulation to a subsidiary role, despite the plausibility of body-state simulation being able to underpin emotion recognition in the absence of typical sensorimotor simulation. Third, that simulation models of emotion recognition be extended to address how embodied processes and emotion recognition abilities develop through the lifespan. It is not currently clear how this system of sensorimotor and body-state simulation develops and in particular how this affects the development of emotion recognition ability. We review recent findings from the emotional body recognition literature and integrate recent evidence regarding the development of mimicry and interception to significantly expand simulation models of emotion recognition.

Summary:

The paper discusses recent models of emotion recognition that propose that when people perceive emotional expressions in others, they simulate those emotions in themselves. The focus has primarily been on simulation of facial expressions, but the authors argue that simulation of bodily and vocal expressions should also be considered. They suggest that simulation of changes in the autonomic nervous system and viscera may play a more prominent role in emotion recognition than currently proposed. Additionally, the authors propose that simulation models of emotion recognition should address how these processes develop throughout the lifespan. The paper reviews recent findings from the emotional body recognition literature and integrates evidence on the development of mimicry and interception to expand simulation models of emotion recognition.

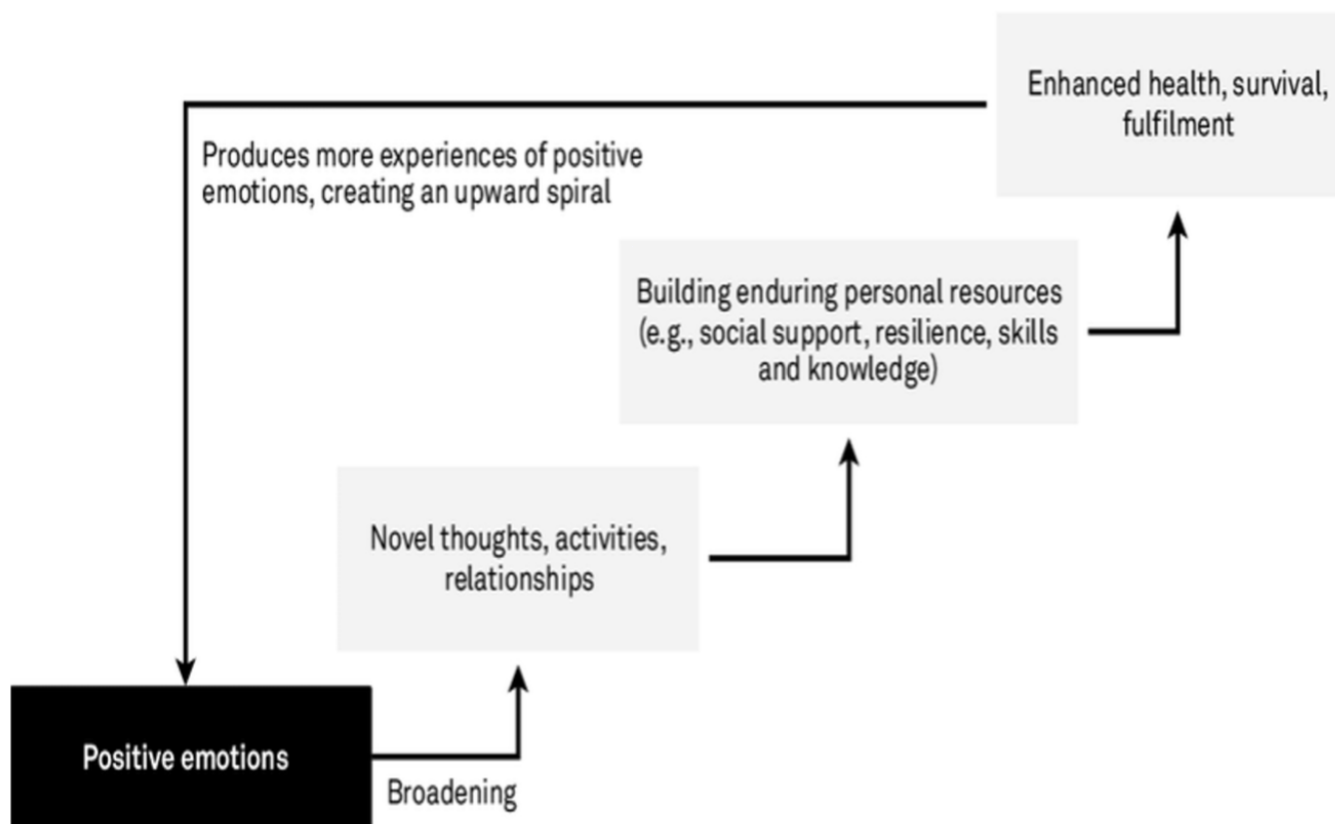
Three Key Expansions

The paper proposes three expansions to simulation models of emotion recognition:

1. Consideration of bodily and vocal expressions: The authors argue that besides facial expressions, bodily and vocal expressions should also be considered in simulation models of emotion recognition. The body and voice are important channels for providing cues to another person's emotional state, and simulation of these expressions should be given fuller consideration. This expansion suggests that a person's body movements and vocal cues, such as tone of voice, volume, and rhythm, can provide important information about their emotional state.
2. Prominence of body-state simulation: The authors suggest that simulation of changes in the autonomic nervous system and viscera, which constitute the body-state simulation, may play a more prominent role in emotion recognition than currently proposed. While sensorimotor simulation (simulation of facial expressions) has been the main focus, simulation of changes in bodily states, such as heart rate, skin conductance, and other visceral responses, may also be crucial in understanding and recognizing emotions in others. This expansion highlights the potential role of body-state simulation in addition to sensorimotor simulation in emotion recognition.
3. Consideration of developmental trajectories: The authors emphasize the importance of considering how embodied processes and emotion recognition abilities develop throughout the lifespan. They argue that it is not yet clear how the system of sensorimotor and body-state simulation develops over time, and how this affects the development of emotion recognition ability. This expansion highlights the need to study how these processes unfold and change across different stages of development, from infancy to adulthood, to gain a comprehensive understanding of emotion recognition.

These expansions suggest that simulation models of emotion recognition should take into account not only facial expressions, but also bodily and vocal expressions, consider the potential role of body-state simulation, and consider how these processes develop over time. By incorporating these expansions, the authors aim to provide a more comprehensive and nuanced understanding of the mechanisms involved in emotion recognition.

Broaden and Build model – Theory of Positive Emotion with examples



The Broaden and Build theory, proposed by psychologist Barbara Fredrickson, is a theory of positive emotion that suggests that positive emotions have broadening and building effects on an individual's cognitive, emotional, and social resources. According to this theory, positive emotions not only feel good in the moment but also have long-term benefits that can improve an individual's well-being and resilience. The theory emphasizes that positive emotions broaden an individual's thought-action repertoire, allowing them to explore new possibilities and build psychological resources that can be beneficial in the future.

The Broaden and Build theory suggests that positive emotions broaden an individual's cognition and attention, leading to increased creativity, flexibility, and problem-solving skills. When individuals experience positive emotions, their minds are open to new ideas and perspectives, and they are more likely to explore and discover new solutions to problems. For example, if a person is feeling joyful, they may be more inclined to engage in playful activities, try new things, and think outside the box, which can lead to new opportunities and growth.

Positive emotions are also believed to build an individual's psychological and social resources. According to the theory, positive emotions help individuals to build resilience, social connections, and coping skills that can be beneficial in times of stress or adversity. For example, if a person experiences gratitude, they may be more likely to seek social support, express kindness and empathy towards others, and develop positive relationships, which can provide a supportive network during challenging times.

Additionally, the Broaden and Build theory suggests that positive emotions have an undoing effect on negative emotions. Positive emotions are believed to counteract the physiological and cognitive effects of negative emotions, helping individuals to recover from stress or negative experiences more quickly. For example, if a person is feeling anxious, experiencing moments of joy or amusement can help to counteract the negative effects of anxiety and promote a sense of well-being.

Overall, the Broaden and Build theory highlights the importance of positive emotions in human well-being, suggesting that they not only bring immediate pleasure but also have long-term effects that broaden an individual's thoughts, actions, and resources, promoting resilience, social connections, and well-being.