KING'S College LONDON

INSTITUTE OF PSYCHIATRY,
PSYCHOLOGY & NEUROSCIENCE

Module:
Psychological Foundations of Mental Health

Week 3:
Introduction to emotion and emotional processing

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Topic 2:
Emotion processing: bottom-up effects of emotions on cognitive processes

Part 1 of 3

Topic list

This week, we will be looking at the following topics:

- Topic 1: Nature of emotion
- ***Topic 2: Emotion processing: bottom-up effects of emotions on cognitive processes***
- Topic 3: Emotion regulation: top-down cognitive processes on emotional responses
- Topic in Action 1: Maladaptive styles of emotion processing and regulation, and mental health

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The effects of emotions on attention

In this topic:

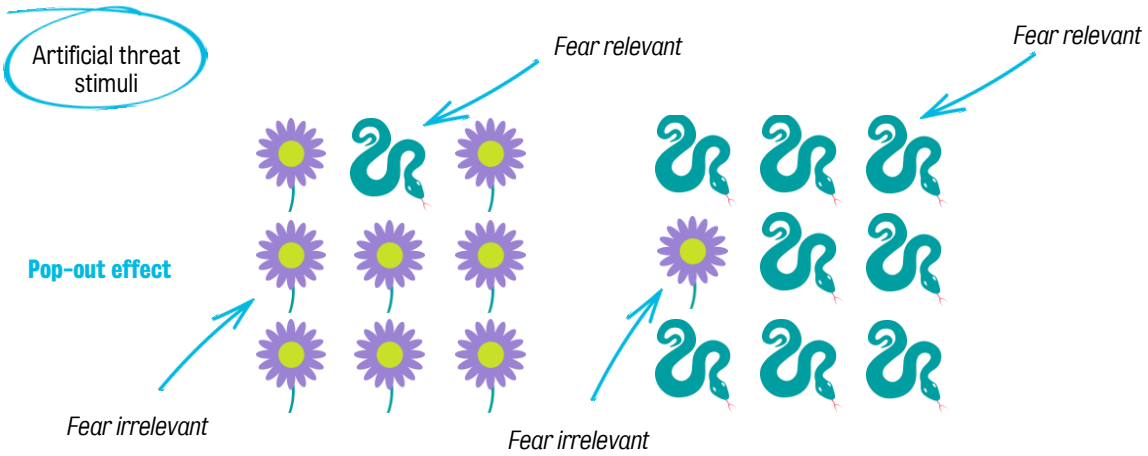
- Effects of emotions on attention processing
- To what degree individuals differ on how emotion interferes with attention
- Differences in how we process emotions is linked to mental health

Attention: A set of cognitive functions that select & prioritise information for further processing

Some stimuli 'grab' attention

Survival

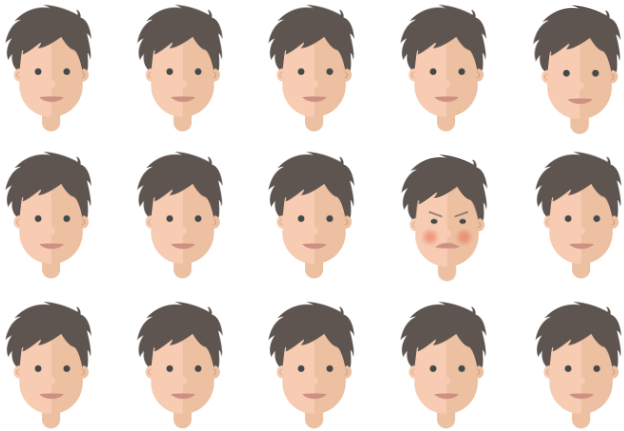
The 'pop-out' effects of emotional stimuli in visual attention



Participants quicker to detect the fear relevant stimulus

Öhman, Flykt & Esteves (2001)

The 'pop-out' effects of emotions extend to social threat stimuli

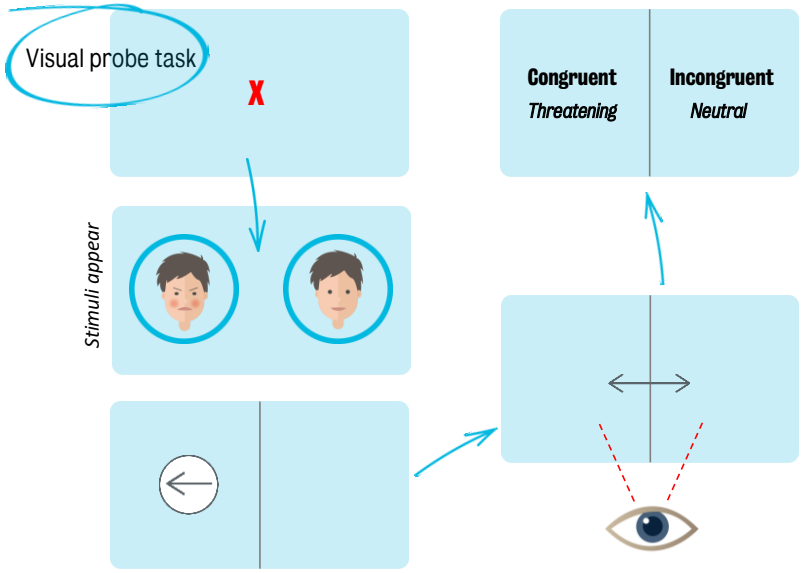


Similar findings were also reported for identifying a discrepant angry face from a crowd of happy faces.

Natural tendency to detect & respond to dangerous situations.

Hansen & Hansen (1988)

The 'selective' attention bias for threats differs across individuals



- Individuals can vary in selective attention bias to threat
- Individuals can also differ in the extent to which they can disengage from threat stimuli
- They can differ in the type of stimulus that captures their attention

Attention bias index = difference between congruent and incongruent trials

Individuals with eating disorders show attention-capture by stimuli that match their concerns

Studying attention bias → Women with eating disorders →

Positive/healthy

Negative/unhealthy

1. Findings:

   Attention orienting bias towards negative stimuli

2. Attention avoidance of positive eating stimuli

3. Quicker to respond to the probe behind the neutral stimuli

- Women with eating disorders had an attention orientating bias towards negative and neutral weight stimuli
- Attention avoidance to positive stimuli

Limitations of the visual dot-probe task

Limitations of Visual probe task

- Does it point to:
  Attention orienting?

  or

  Inability to disengage?
- Hard to determine when attention focus shifts from vigilance to avoidance because the image is too distressing

Solution:

Differentiate with eye-tracking. Enables a more continuous measure

Armstrong & Olatunji (2012)

Emotional stimuli not only capture attention but also disrupt processing of an concurrent tasks

Attention to an emotional stimulus can disrupt a task

Emotional Stroop task

Garden

Disease

Book

Cancer

Pathetic

Table

Failure

Study showed:

Patients with anxiety = more affected by the threatening content of the words and are therefore slower at colour-naming threat words

The words which disrupted attention were dependent on the content of the word and the specific concerns of the patient

Matthews & MacLeod (1985)

Summary and further thinking

Threat stimuli capture attention and absorb cognitive resources → Disrupts cognitive processing

- Non-threatening interruptions drain resources
- Being hypervigilant to a mild threat can be maladaptive
- Being hypervigilant can contribute to psychopathologies
- Positive stimuli also can capture attention