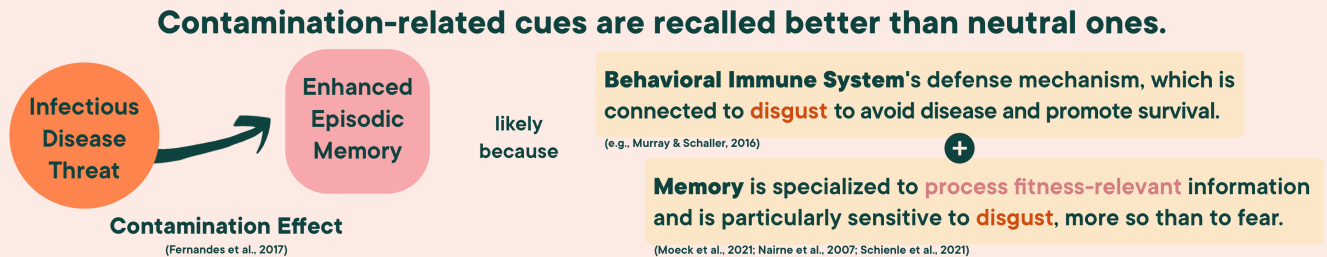


Adaptive Memory in Contamination Context: Emotionality is a Proximate Mechanism

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Background



But how?

Some evidence suggest that **emotionality cannot explain this tuning...**

but those studies only used self-reported scales or manipulated emotions that were unrelated to threats.

(e.g., Bel et al., 2013; Fernandes et al., 2021; Gretz & Huff, 2019; Kroneisen & Erdfelder, 2011; Nairne et al., 2017; Thiebaud et al., 2022; Yang et al., 2014)

In a similar paradigm involving the threat of predators and food deprivation, evidence has shown that....

! a **deeper cardiac deceleration** occurs in survival conditions, and the mnemonic advantage in survival conditions only occurs in the **individual's native language** and not in a secondary language, likely due to the weaker emotional associations in the latter.

(Fiacconi et al., 2015; Garrido & Prada, 2018; Kazanas et al., 2021; Saraiva et al., 2021)

Emotions related to threats?

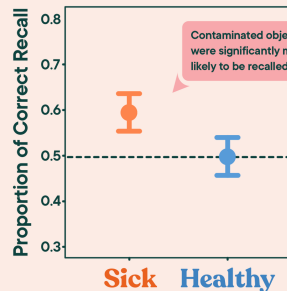
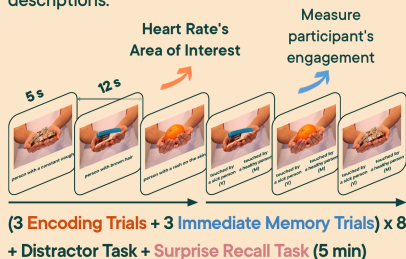
Assessing the Role of Disgust

Replication of Contamination Effect with Psychophysiological Index Extension.

80 participants (55 females)

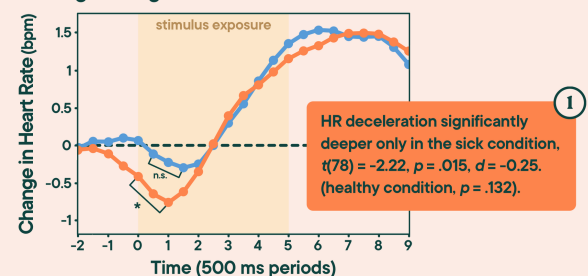
$M_{age} = 22.60$, $SD_{age} = 8.06$

Participants were asked to recall and identify (24) objects that have been **touched by people infected with a deadly disease** or who were **healthy**, based on clues provided in (12) short descriptions.



Contamination Effect was replicated, $b = 0.47$, $p < .001$, OR = 1.59. (Fernandes et al., 2017, 2021)

Pathogen Disgust influences the Contamination Effect:



Participants who manifested the contamination effect showed a significant bradycardia while recalling objects from the sick condition (vs. healthy condition), $t(42) = -1.86$, $p = .035$, $d = -0.28$. Participants who did not manifest the contamination effect ($n=36$) showed no significant difference, $p = .170$, (in line with Fiacconi et al., 2015)



Memory advantage arises from the activation of autonomic disgust responses to pathogenic threats, which trigger the defensive motivational system. (Bradley et al., 2001; Lang et al., 2000)

Limitations: The COVID-19 pandemic may have increased susceptibility to experiencing pathogen disgust.

Future research: Eye-tracking and fMRI can be used to further understand the interaction between cognitive and emotional systems in threatening contexts.



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