Cursing Feedback Control, Attentional Capture, and Physiological Arousal: A Combined Eye Tracking and Electrocardiography Study

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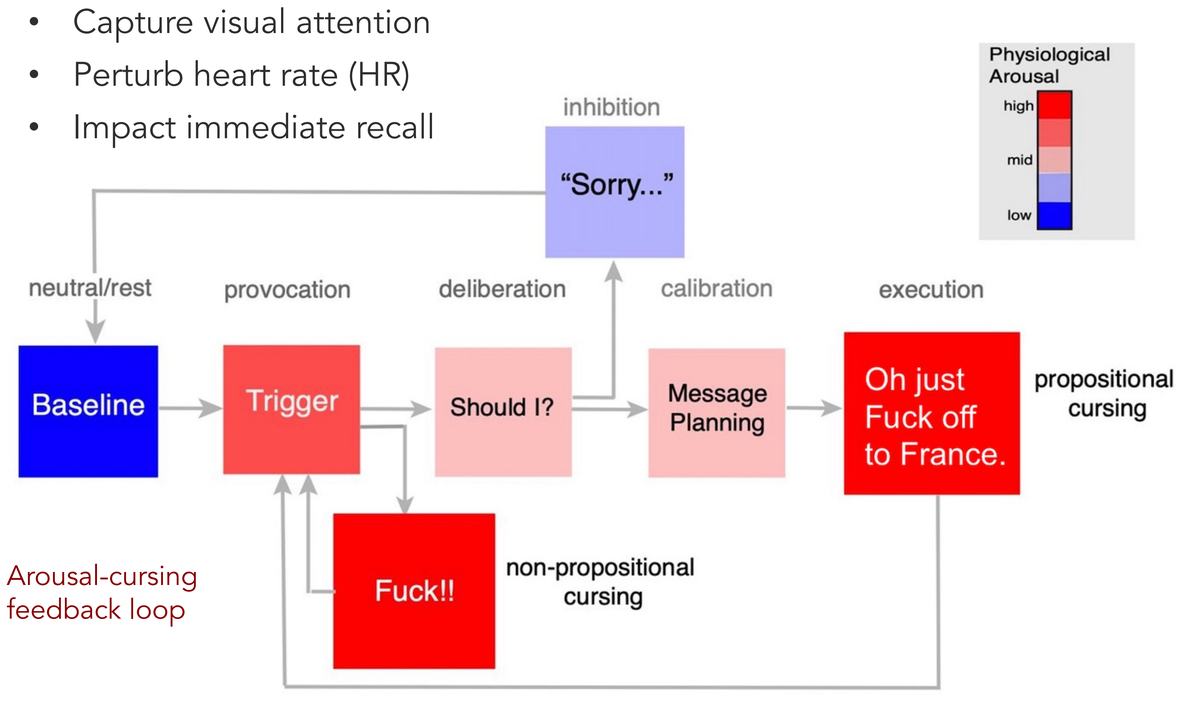
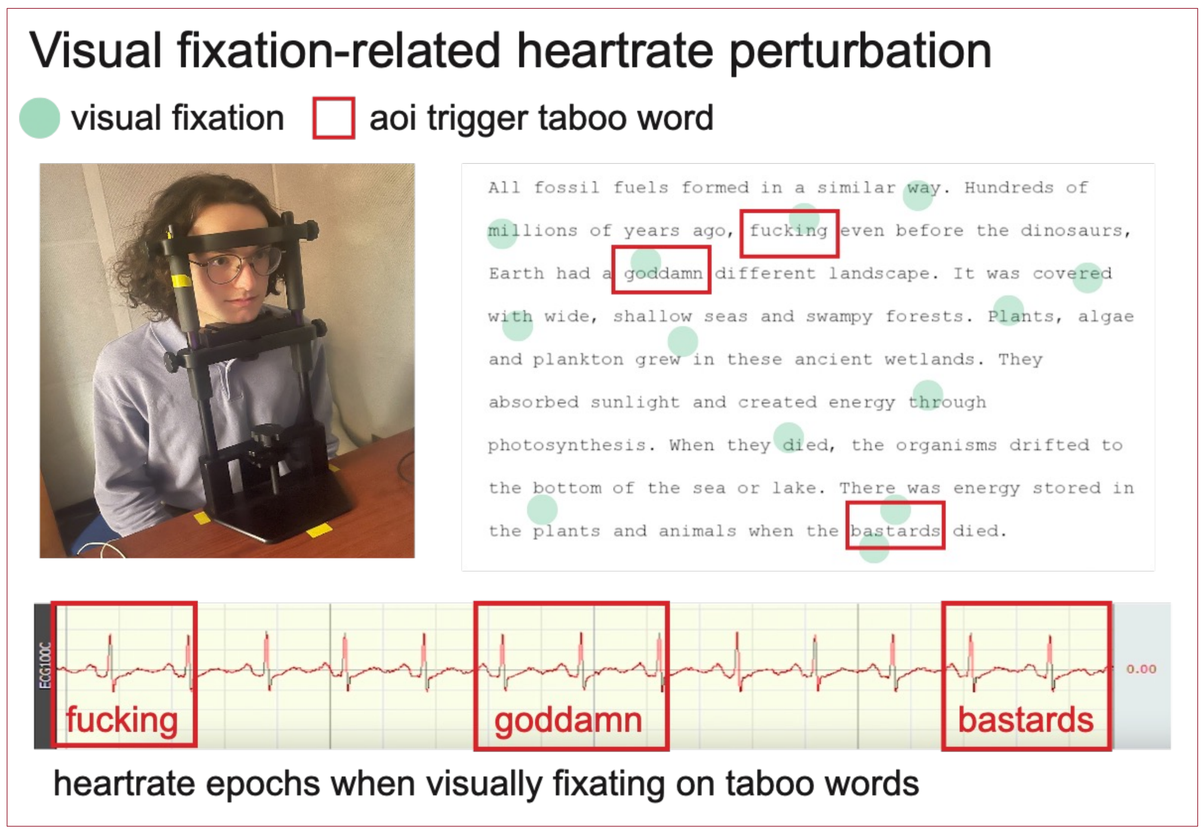
Background

- Cursing evokes physiological arousal
- Heightened arousal improves cognitive function up to an inflection point; further arousal causes catastrophic interference effects
- We hypothesize that cursing involves a feedback control loop such that:
  - Cursing occurs in the context of arousal
  - The act of cursing further increases arousal
- Participants read expository texts with taboo words unexpectedly embedded. We examined the capacity of curse words to:
  - Capture visual attention
  - Perturb heart rate (HR)
  - Impact immediate recall



Methods

- Young adults (N=5) read didactic passages (N=6) matched in reading level (Flesch-Kinkaid grade 8) and length (M=230 words)
- Two versions of each passage: one with curse words; other with pragmatically unexpected words matched in length and location
- Eye gaze (Eyelink 1000 plus) and HR (BIOPAC MP160 connected via USB2TTL converter) continuously monitored
- Two independent scorers totaled the number of facts in verbal recall



- We measured the following contrasts:
  - HR after gaze entered taboo AoI vs. control AoI
  - HR after gaze entered taboo AoI vs. baseline HR
  - Gaze dwell time in taboo AoIs vs. control AoIs
  - Total number of facts recalled from taboo vs. control passages

Results

- Average HR over 2-second intervals after gaze entered taboo AoIs (M=80.09, SD=15.58) was not significantly different from control AoIs (M=85.37, SD=13.87), t(4)=1.17, p=.15
- Average HR over 2-second intervals after gaze entered taboo AoIs was not significantly different than baseline HR (M=89.01, SD=19.92), t(4)=1.18, p=.15
- Gaze dwell time was significantly longer on taboo words (*M*=943.25, *SD*=174.87) than on control words (*M*=1580.29, *SD*=380.69), t(4)=-3.4, *p*<.01)
- Participants recalled more facts after reading control passages than taboo passages (*Z*=-2.22, *p*=.01)

Discussion

- No significant effect of exposure to cursing observed on HR
- Physiological null effect could be attributed to the narrow window of analysis (2 seconds)
- Significant cognitive effects:
  - Better recall of passages containing unexpected versus taboo words
  - Participants spent more time looking at taboo words, indicating attentional capture
- Next steps:
  - More participant testing is underway
  - We are examining the physiological and cognitive effects of curse word production in a sister experiment
  - Arousal and cursing in naturalistic language settings to be explored

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Resources

References:

Poster PDF:

Contact:

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