

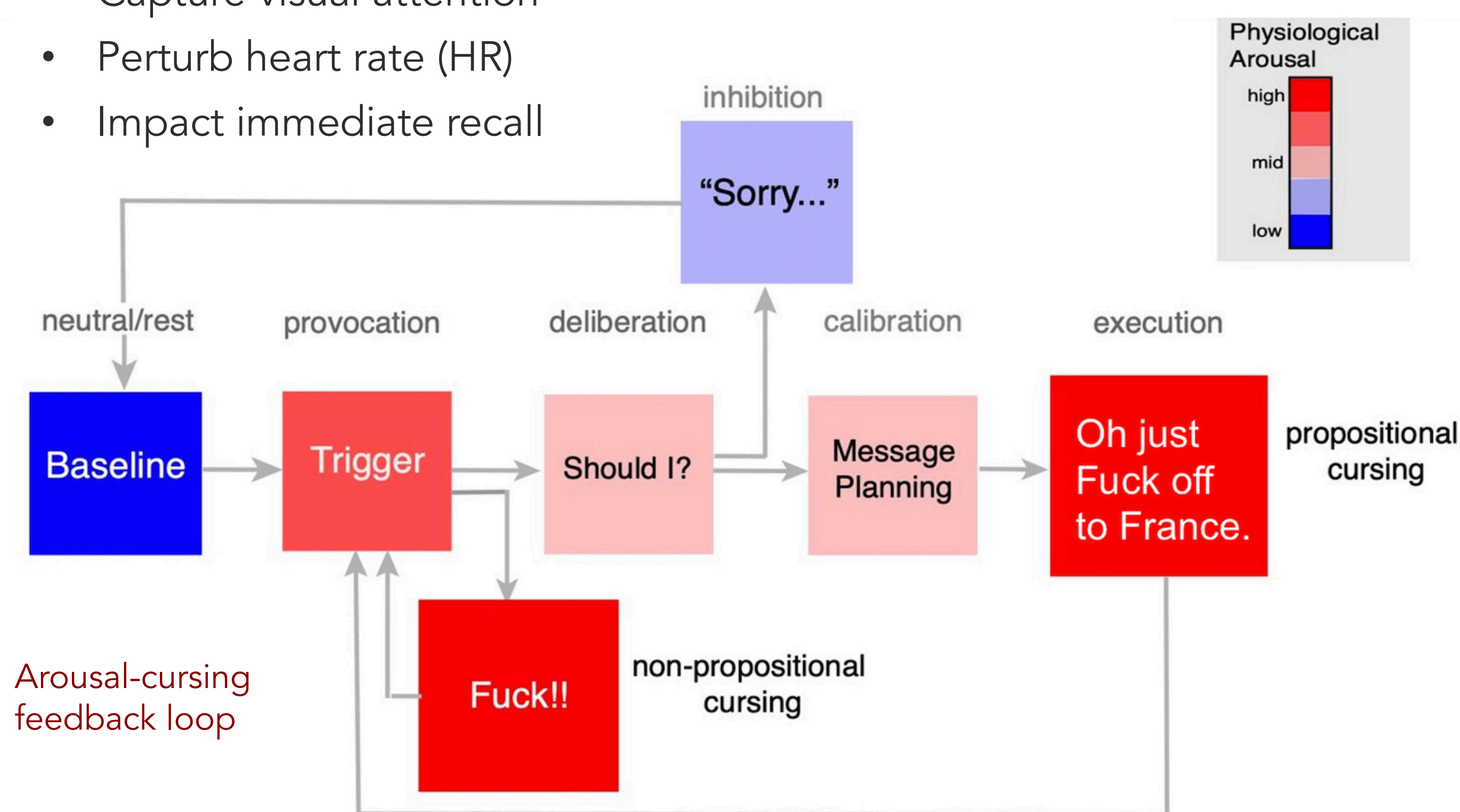
Cursing Feedback Control, Attentional Capture, and Physiological Arousal: A Combined Eye Tracking and Electrocardiography Study

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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-Kincaid 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

Visual fixation-related heartrate perturbation

● visual fixation □ aoi trigger taboo word



All fossil fuels formed in a similar way. Hundreds of millions of years ago, **fucking** even before the dinosaurs, Earth had a **goddamn** different landscape. It was covered with wide, shallow seas and swampy forests. Plants, algae and plankton grew in these ancient wetlands. They absorbed sunlight and created energy through photosynthesis. When they died, the organisms drifted to the bottom of the sea or lake. There was energy stored in the plants and animals when the **bastards** died.



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

Results

- Average HR over 2-second intervals after gaze entered taboo Aols (M=80.09, SD=15.58) was not significantly different from control Aols (M=85.37, SD=13.87), $t(4)=1.17$, $p=.15$
- Average HR over 2-second intervals after gaze entered taboo Aols 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:



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