

Detectable Delectables: CFS Reveals unconscious bias toward edible objects

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Background and Rationale

- The dual visual stream theory has suggested the ventral stream is conscious, whereas the dorsal stream is unconscious.
- Continuous Flash Suppression (CFS) is highly effective in isolating the dorsal stream¹.
- Utilizes a high contrast, high luminance mask (or Mondrian) presented to the dominant eye².
- Since food is necessary of human survival, and there appears to be intrinsic motor advantages (right hand) for feeding behavior³.
- Is there a pre-attentive bias for food?**

Methods and Materials

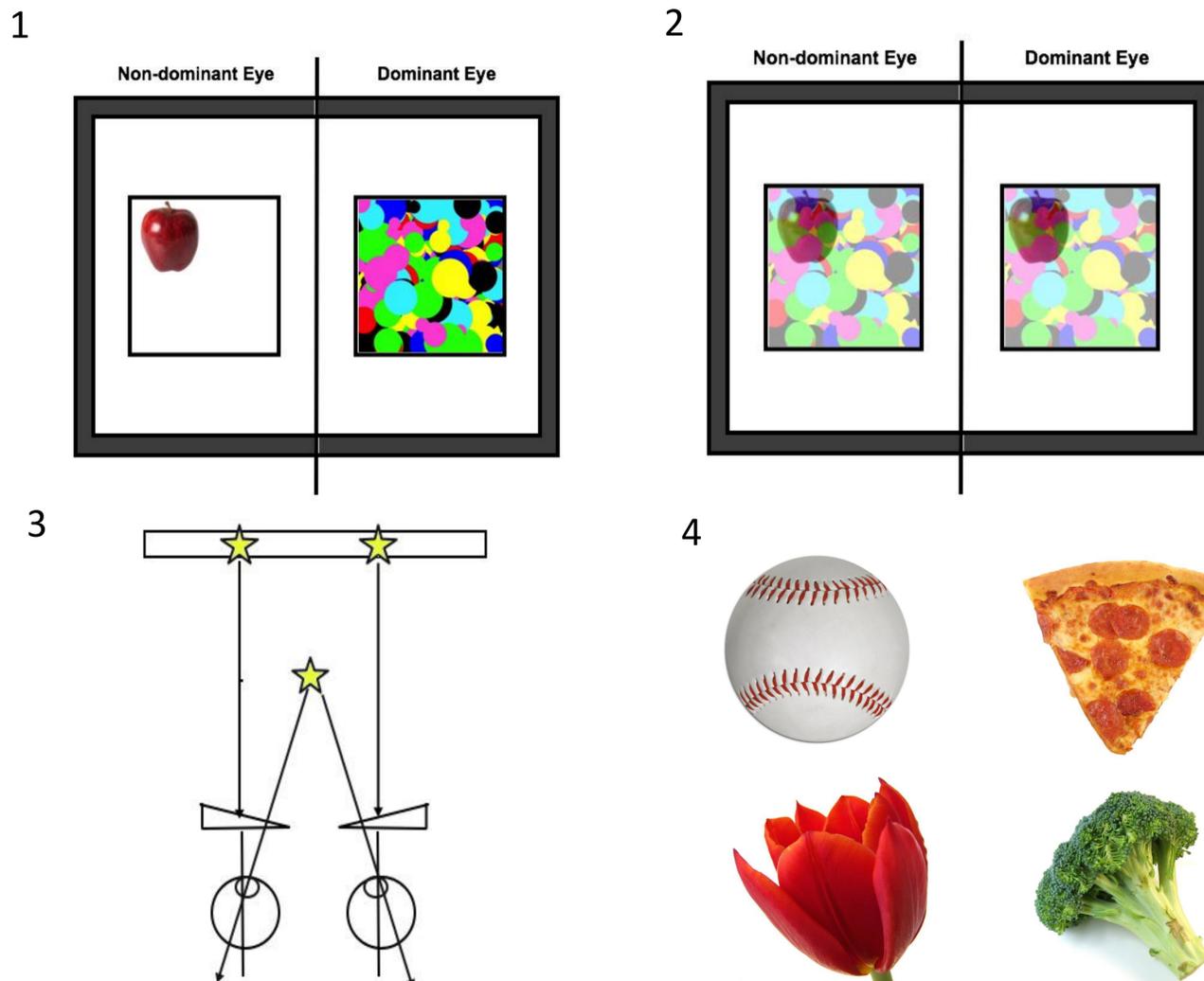


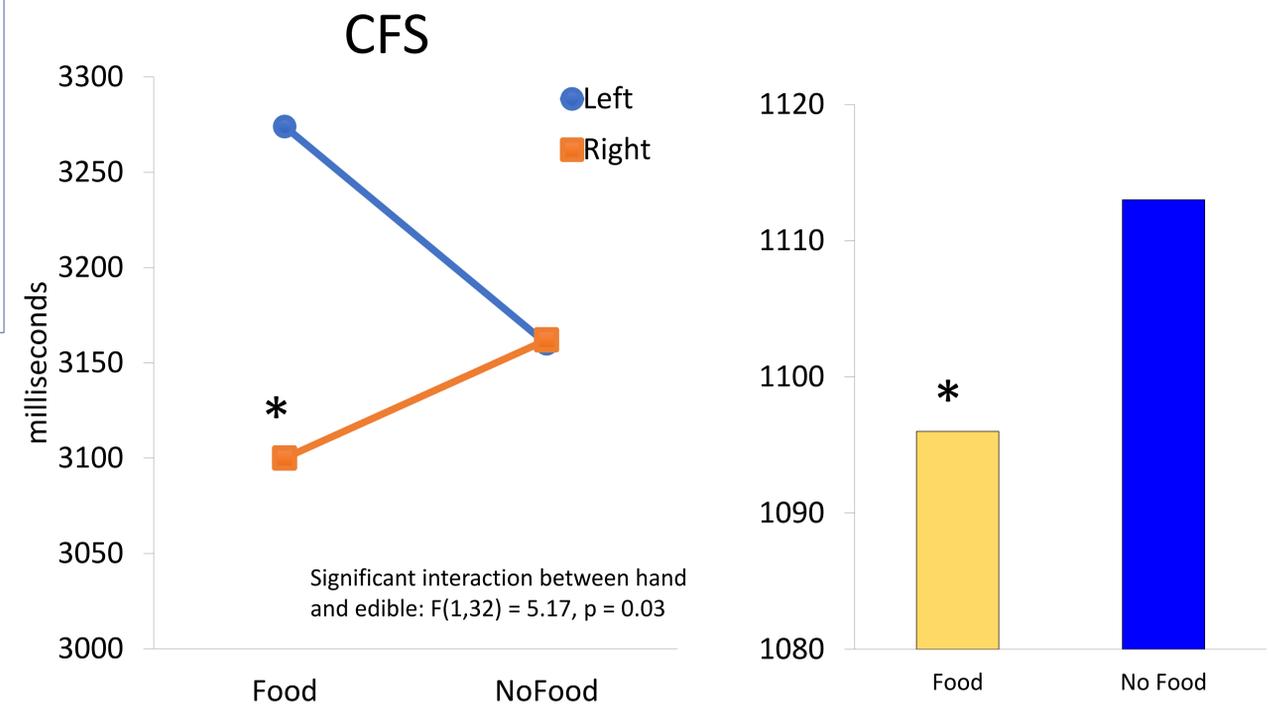
Figure 1: CFS Group: 33 right-handed participants (15 Males). The mean age of the participants was 20.34. Stimuli (320) were show in one eye, while the other has abstract patterns flashing.

Figure 2: NoCFS Group: 28 right- handed participants (14 Males). The mean age of the participants was 20.7. No flashing patterns distract one eye from the stimuli (320).

Figure 3: Prism Glasses distort vision by a change of 10° in the angle of light reflection into the eyes.

Figure 4: Stimuli 80 pictures in total were selected from the FRIDA database⁴; 40 were edibles (pizza broccoli) and 40 non-edibles (baseball, clover).

Results



Discussion & Conclusion

- In the CFS group, the right hand responded significantly faster to food stimuli.
 - Intrinsic motor advantage is confirmed.
- Reaction time advantage for food is prevalent in control group.
 - Food is essential, so it makes evolutionary sense that we would have an attentional bias towards it.
- Hedonic aspect of food is not considered.
 - Food high in sugar and fat is extremely addictive and the brain process it differently from other food⁵.
- Diet of participants not considered; variability may be important.
 - For example, vegetarians could have a different (e.g., adverse) response to meat.
- BMI has an inverse relationship with food detection reaction times⁷.
- Exceptionally high BMI (i.e., in the obese) could lead to abnormal reaction times.
- Evidence that natural foods are treated differently from artificial foods³.
- Difference in reaction time?
- Does the type of grasp matter⁶? Whole hand or pincer.

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