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Are you looking at me?

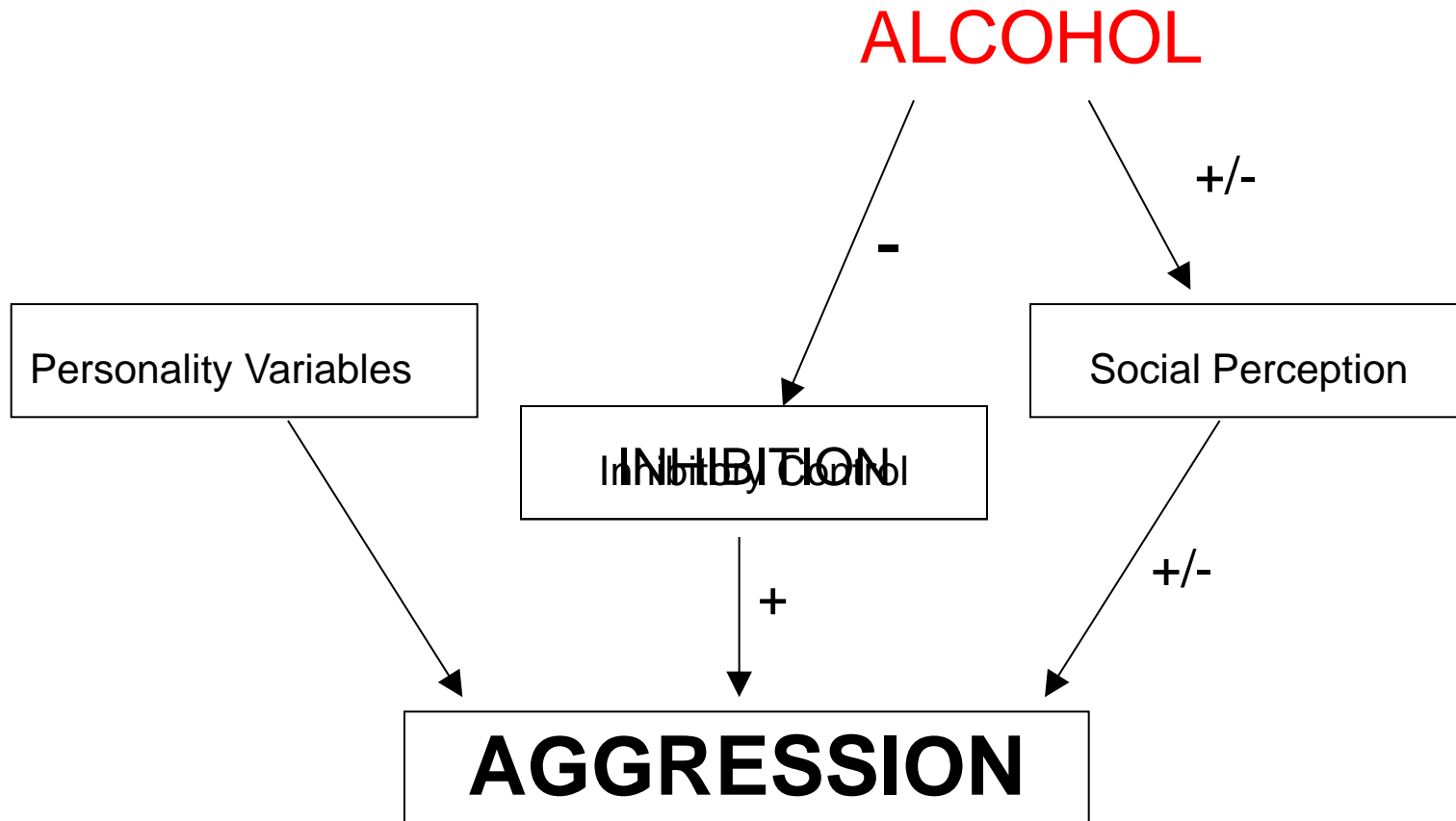
Effects of acute alcohol consumption on processing of facial cues of emotional expression



Alcohol and Aggression

- There is wide spread consensus of a relationship between alcohol consumption and heightened aggression
- Despite this, the mechanisms that underlie this relationship are poorly understood
- One mechanism may be alcohol-induced alterations in the processing of facial expressions of emotion

Alcohol-Aggression Model



Alcohol and Emotional Processing of Facial Cues

- Evidence of impairment to the processing of emotional expressions in alcohol-dependent patients (Foisy et al. 2007; Townshend & Duka 2003)
- Tucker & Vuchinich 1983
 - Fewer correct responses after alcohol, not stratified by emotion
- Kano et al. 2003
 - Faster reaction time to identify happy facial expressions from neutral after a low dose, compared to a high dose of alcohol

Alcohol and Emotional Processing of Facial Cues

Aims of project:

- Effects of acute alcohol consumption on the processing of facial cues of emotional expression
- Effects of acute alcohol consumption on the processing of angry facial expressions – role in alcohol-induced aggression

Alcohol and Emotional Processing of Facial Cues

Aims of project:

- Effects of acute alcohol consumption on the processing of facial cues of emotional expression
- Effects of acute alcohol consumption on the processing of **angry** facial expressions – **role in alcohol-induced aggression**

Studies

Study 1: Effects of acute alcohol consumption on perception of emotional expressions in facial cues

Study 2: Effects of acute alcohol consumption on categorisation of emotionally ambiguous facial cues

Experimental Procedure

- Baseline ratings of self-report measures of personality, anxiety, mood and craving (AUDIT; EPQ-R; STAI-trait; STAI-state; VAS; AUQ)
- 10 min consumption of alcohol or placebo lime/tonic beverage (+ 10 min absorption)
- Self-report measures of anxiety, mood and craving (STAI-state; VAS; AUQ).
- Task
- Self-report measures of anxiety mood and craving (STAI-state; VAS; AUQ)

Inclusion Criteria

- Weekly alcohol drinkers (5-35 units/week if female and 10-50 units/week if male)
- Good physical and psychiatric health
- No family history of alcoholism

Study 1:

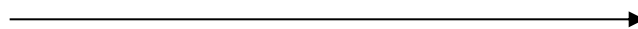
Two Alternative Forced Choice Task



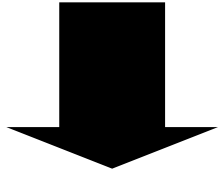
Stimuli

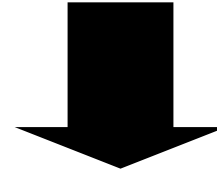


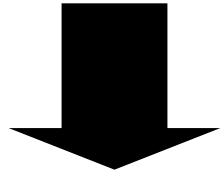
Neutral Face
0%



Full Exemplar
100%







2AFC Task

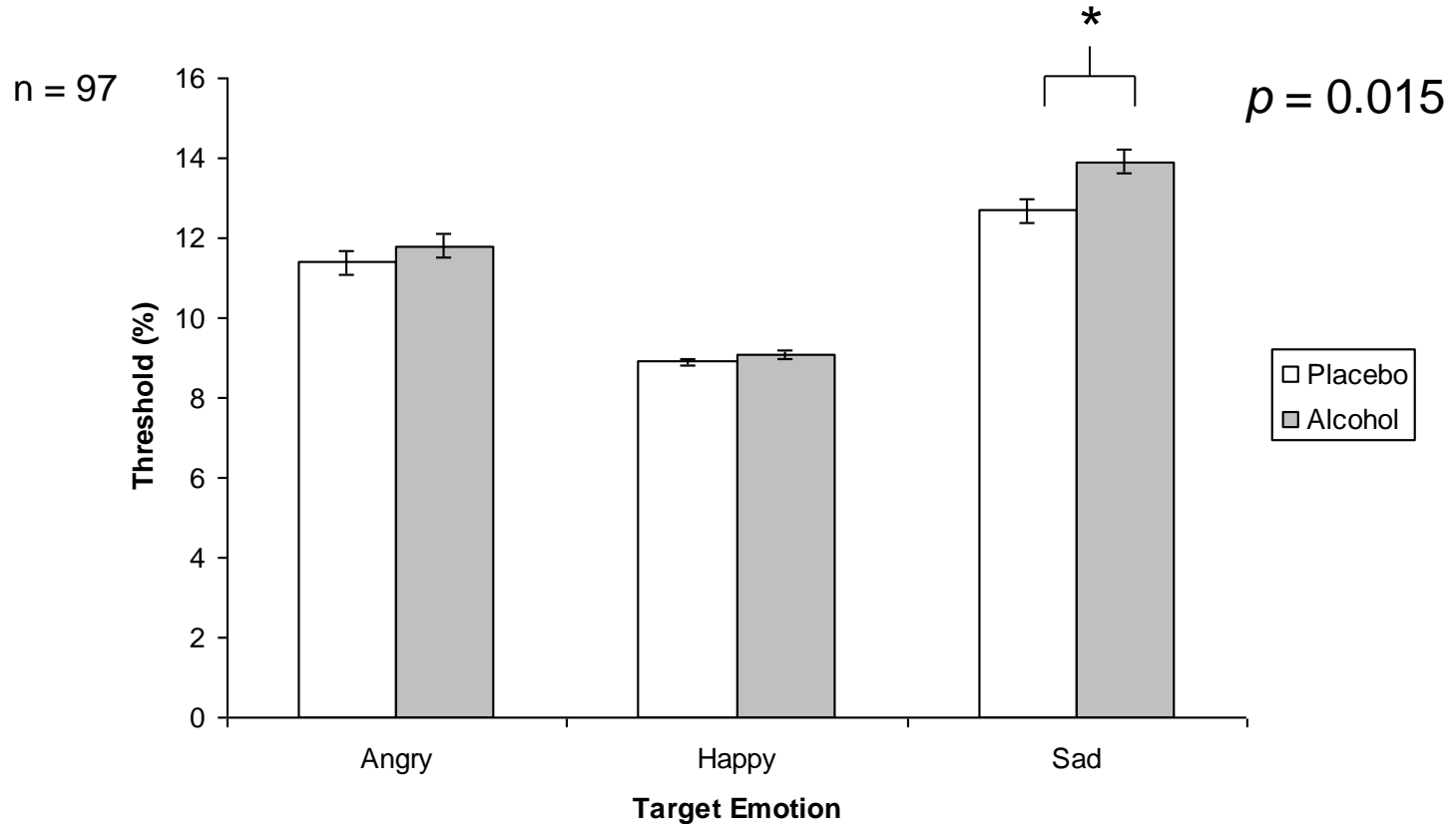
- Male Happy
- Male Sad
- Male Angry
- Female Happy
- Female Sad
- Female Angry

Alcohol and Emotional Processing of Facial Cues

- Study 1 $H_{(1)}$: After alcohol participants will display lower threshold for angry faces compared to placebo

Study 1: Results

Emotion \times Drink ($F [2, 88] = 3.57, p = 0.032$)



Craig et al. (2008) *Journal of Psychopharmacology* 204: 327-34

Study 2: Categorisation Task

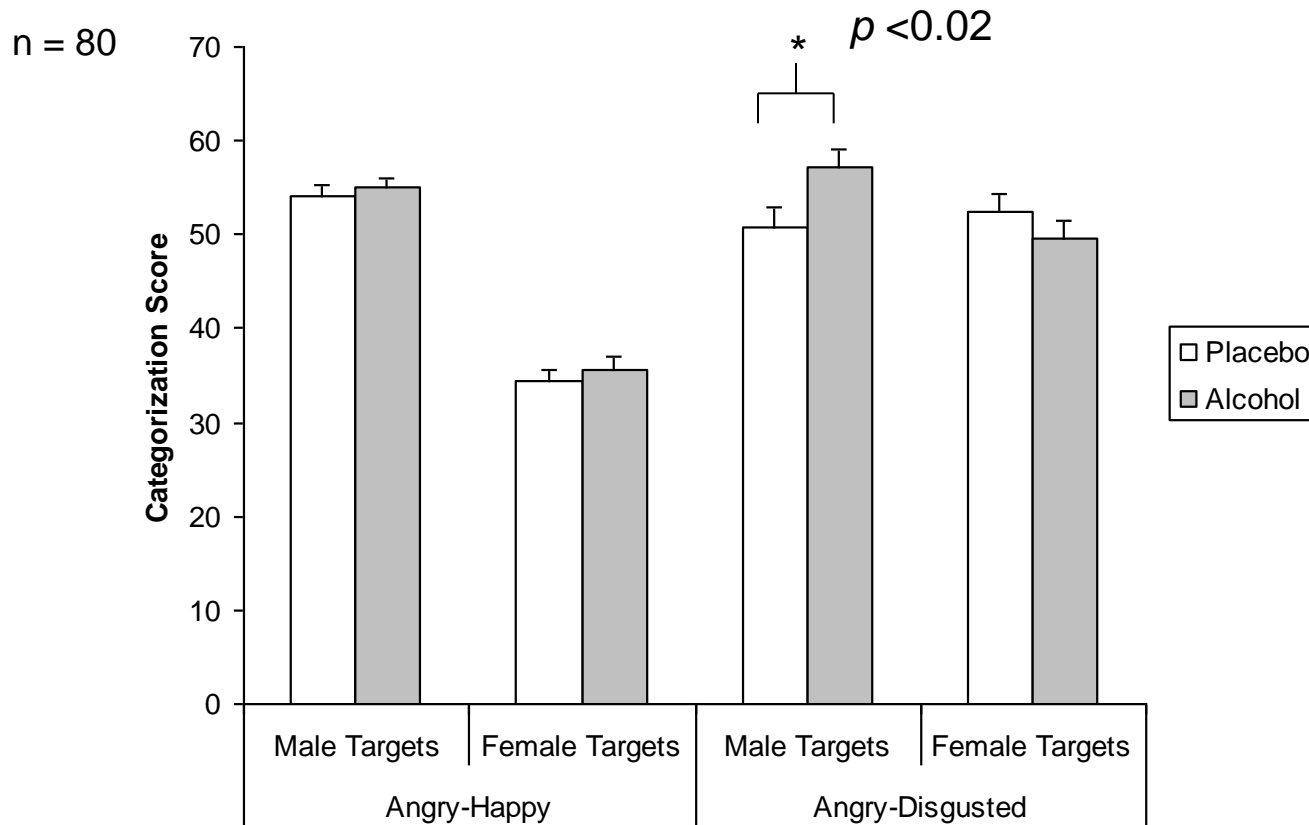


Alcohol and Emotional Processing of Facial Cues

- Study 1 $H_{(1)}$: After alcohol participants will display lower threshold for angry faces compared to placebo
- Study 2 $H_{(1)}$: After alcohol participants will be more likely to categorize an ambiguous face as angry compared to placebo

Study 2: Results

Significant drink x target emotion x target sex interaction ($p = 0.02$)



Alcohol and Emotional Processing of Facial Cues

- **Study 1:** After alcohol consumption participants will display to **lower** the **thresholds** for **angry** faces compared to placebo **X**
- **Study 2:** After alcohol participants will be **more** **likely** to **categorize** **ambiguous** faces as **angry** compared to placebo **✓**

Alcohol and Emotional Processing of Facial Cues

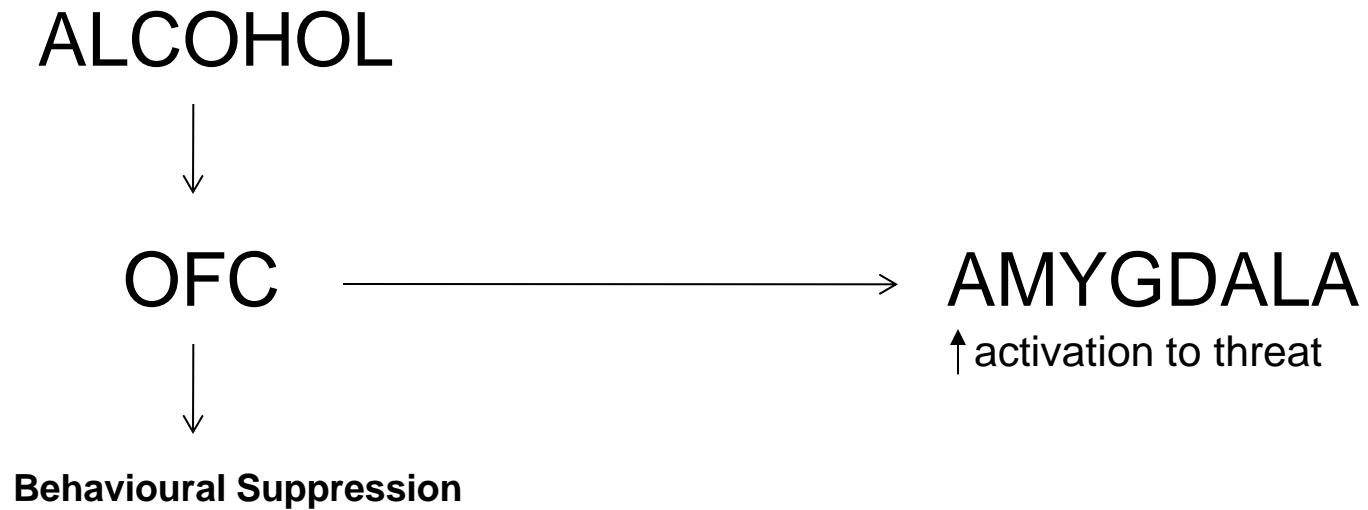
- Identifying sad facial expressions has been long linked to the inhibition of aggression (Blair et al. 1999, Eisenberg et al. 1989)
- Therefore, an alcohol-induced impairment in the ability to recognise sad emotional expressions would increase the likelihood of an aggressive response

Theoretical Framework

Theoretical Framework

- OFC has extensive neural connections with areas important in emotion and regulates behavioural and autonomic responding (to threat)
- Both amygdala and OFC dysfunction/lesion have been associated with impairments in emotional (facial) processing and aggressive responding
- Intermittent explosive disorder (impulsive, affective-driven aggression) patients show exaggerated amygdala activity and diminished OFC activity in response to angry faces (Coccaro et al. 2007)

Theoretical Framework



Summary

- Evidence that alcohol decreases sensitivity to sadness and increases tendency to see anger
- Effects may be affected by the sex of the target although further research is needed

Future Directions

- Development of new tasks
- Social priming effects
- Individual differences (e.g., light vs. heavy drinkers, alcohol-related experiences/expectancies)

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