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INTRODUCTION

- ◆ **Autoonoetic Consciousness** is a component of Episodic Memory which involves the ability to mentally travel back and forward in time; to mentally represent subjective events and re- or pre- experience them (Tulving, 2002).
- ◆ fMRI studies have found that remembering the past and envisioning the future share neural correlates (in the left hippocampus and visual posterior visuospatial regions) which are both engaged in construction of both past and future events (Addis *et al.*, 2007).
- ◆ It has recently been found that Autoonoetic Consciousness when re-experiencing past events is negatively affected by the long-term effects of alcohol (Pitel *et al.*, 2007).
- ◆ However, most studies testing this relationship have used the Remember-Knowing paradigm as a testing tool, testing only past Autoonoetic Consciousness and only by measures of recollection and familiarity.
- ◆ The effects of acute alcohol on the ability to pre-experience future events are yet to be explored.
- ◆ It is thought that people's sense of identity and one's self is supported by the imagination of meaningful events we anticipate in the future (D'Argembeau *et al.*, 2012). Since many treatment protocols rely on the ability to mentally project oneself back and forth in time, it could be hard to adapt to these protocols if Autoonoetic Consciousness is impaired as a result of excessive alcohol consumption (Pitel *et al.*, 2007).
- ◆ The current study aimed to determine whether acute alcohol consumption has an effect on Autoonoetic Consciousness, in terms of future imagining of events, as measured by the Crovitz-Schiffman Cue Word technique.
- ◆ The Crovitz-Schiffman Cue Word technique involves participants writing in response to a cue word about a personally relevant event, either in response to a personally experienced past event or an imagined to-be-experienced future event.
- ◆ It was hypothesised that the alcohol group would have poorer self-reported autoonoetic consciousness abilities than those in the placebo condition.

Methods

- ◆ A moderate dose of 0.6g/kg alcohol (Becks Lager) or non-alcoholic beer (Becks Blue) was administered in a single-blind placebo controlled trial to fifteen participants.
- ◆ Participants were non-dependent regular social drinkers aged between 18 and 30 years. The Alcohol Use Disorders Identification Test (AUDIT) was used to determine non-dependence, where scores below 21 indicated non-dependence (WHO, 2001).
- ◆ Participants were tested on the Crovitz-Schiffman technique, along with adaptations of the Memory Characteristics Questionnaire (Johnson *et al.*, 1988) and a memory task. The Crovitz-Schiffman technique asks participants to construct and elaborate an event as specific as possible, in response to a cue word (Crovitz & Schiffman, 1974). Drinks were administered in a bar laboratory at London South Bank University.

TEST	FUNCTION TESTED
Crovitz-Schiffman baseline task (CST general)	Future Autoonoetic Consciousness (pre-drink administration)
Crovitz-Schiffman after drink consumption (CST alcohol)	Future Autoonoetic Consciousness (post-drink administration)
Future Imagined Events Characteristics Questionnaire (MCQf)	Subjective phenomenological ratings of Future Autoonoetic Consciousness ability
Memory Characteristics Questionnaire (MCQ)	Subjective phenomenological ratings of past Autoonoetic Consciousness ability
Poster Factual Information task	Memory task

RESULTS

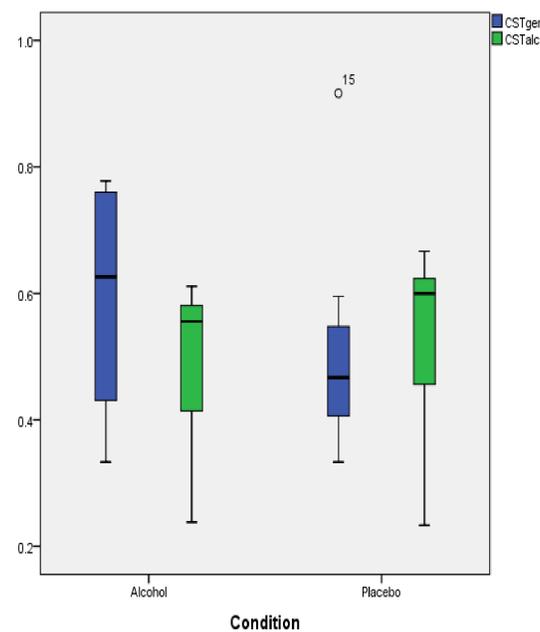
TABLE 1: DESCRIPTIVE MEANS FOR ALCOHOL AND PLACEBO GROUPS

	N	MALE: FEMALE	AGE (Yrs)	WEIGHT (kg)	YEARS OF SOCIAL DRINKIN G	BraC ON TEST	LAST EATEN HOURS	AUDIT SCORE
PLACEBO	7	3/4	24.4	68.7	8.6	0.000	1.6	6.9
ALCOHOL	8	3/5	24.8	72.5	8.5	0.299	2.0	7.1

ALCOHOL EFFECTS COMPARED WITH PLACEBO ON AUTOONOETIC CONSCIOUSNESS

◆ A MANOVA showed that there were no significant differences between Alcohol and Placebo conditions on Autoonoetic Consciousness when envisioning a future event. Pillai's Trace: 0.089, $F=0.586$, $df=(2.0, 12.0)$, $p=0.572$

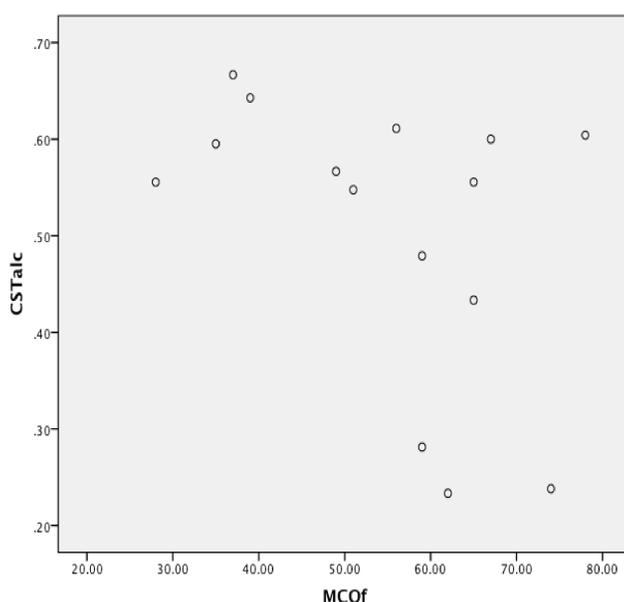
FIGURE 1: BOXPLOT SHOWING MEAN SCORES FOR ALCOHOL AND PLACEBO GROUPS ON CROVITZ-SCHIFFMAN GENERAL (BASELINE) AND CROVITZ-SCHIFFMAN ALCOHOL TASKS.



SUBJECTIVE PHENOMENOLOGICAL RATINGS OF FUTURE AUTOONOETIC CONSCIOUSNESS AND AUTOONOETIC TASK PERFORMANCE

◆ The second objective of this study was to explore whether subjective phenomenological ratings of future imagining ability were related to future imagining task performance. A Pearson's Correlations test showed no significant correlation between the two variables: $r=-0.447$, $n=15$, $p=0.094$.

FIGURE 2: SCATTERPLOT FOR MCQ FUTURE AND CROVITZ-SCHIFFMAN ALCOHOL TASK



SUBJECTIVE PHENOMENOLOGICAL RATINGS OF PAST AUTOONOETIC CONSCIOUSNESS AND MEMORY TASK PERFORMANCE

- ◆ The third objective of this study was to see whether subjective phenomenological ratings of autoonoetic consciousness for re-experiencing a past moment (i.e. Memory Characteristics Questionnaire on looking at a Drinkaware poster) would predict Factual recall scores on the Poster Facts Memory Questionnaire.
- ◆ A Pearson's correlation showed that there was no significant correlation between the two variables: $r=-0.457$, $n=15$, $p=0.087$.

ASSOCIATION BETWEEN SUBJECTIVE PHENOMENOLOGICAL RATINGS OF PAST AND FUTURE AUTOONOETIC CONSCIOUSNESS

- ◆ The final objective was to compare the scores on the two Memory Characteristics Questionnaires, namely the past and the future MCQ. A Pearson's Correlation test showed no significant correlation: $r=0.204$, $n=15$, $p=0.467$.

CONCLUSIONS

- ◆ The current study did not find a significant effect of acute alcohol on autoonoetic consciousness and the ability to mentally project oneself into a future event, nor did it find phenomenological subjective ratings of autoonoetic consciousness to correlate with actual performance on a mental future projection task. Subjective Phenomenological ratings of past Autoonoetic Consciousness and memory task performance were not found to be related either, as were not subjective phenomenological ratings of past and future Autoonoetic Consciousness.
- ◆ These findings are inconsistent with previous literature (Addis *et al.*, 2007; Pitel *et al.*, 2007). Consequently, a more revised attempt to study this is suggested, with improvements to the Crovitz-Schiffman technique advised. Moreover, testing could benefit from greater sample sizes (given that several correlations were approaching significance), gender factored into testing, random allocation to conditions, and double blind testing.
- ◆ Finally, this research emphasises the relevance of autoonoetic consciousness under the effects of alcohol as further explorations within this field could guide treatment for dependent drinkers and perhaps prevention for recreational drinkers.

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