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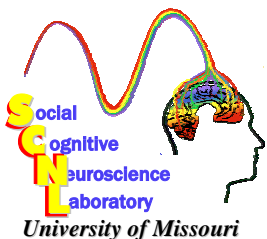
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# Booze and Sex: A Psychophysiological Examination of Explicit and Implicit Attitudes

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## INTRODUCTION

Intentions to use condoms often predict condom behavior ( $r=.45$ , Albaraccin, Johnson, Fishbein, & Muerleile; 2001). However, in contexts when motivation/ability to engage in deliberative cognition are reduced, dual-process models predict that implicit attitudes will predict behavior better than explicit attitudes (Chaiken & Trope; 1999).

In previous research, Marsh et al. (2001) found that positive implicit reactions to condoms predicted condom use with casual partners but not steady partners.

Marsh et al. also found slightly speeded reaction times to condom images when primed with negative pictures compared to positive pictures, although this effect was not significant.

Research has demonstrated that the P3 component of the Event-Related Potential (ERP) is associated with evaluative categorization of motivationally-relevant stimuli:

Ito & Cacioppo (2000) demonstrated that the P3 is larger to categorically inconsistent compared to consistent stimuli using visual oddball tasks with valenced images.

The current research:

Collected pilot data on the use of P300 as an index of implicit condom attitudes.

Compared P300 elicited by condoms and by alcohol-related stimuli as pilot data for future studies on the links between alcohol use, sex-related alcohol outcome expectancies, and condom use behaviors.

## METHOD

Participants were 30 undergraduates who completed measures of alcohol-related expectancies and explicit condom use attitudes several weeks prior to the experiment.

ERPs were recorded from 28 standard scalp locations. Electroencephalographic data were sampled at 1000 Hz and filtered online at .05-40Hz.

Participants completed a visual oddball task that included 3 target conditions: condoms, alcohol, or erotic alcohol images. Targets were shown in the 4<sup>th</sup> or 5<sup>th</sup> position within a trial of 5 context images (neutral, positive, and negative International Affective Picture System images).

Each image was presented for 750ms, followed by a 1000ms interstimulus interval (blank screen). There were a total of 240 trials (1200 images).

Example of a trial



## RESULTS

Explicit (self-report) condom attitudes were uniformly very positive

( $M = 5.52$ , where 6 = very good)

All participants reported intentions to use condoms with casual partners.

Implicit (P300) condom attitudes appeared less positive:

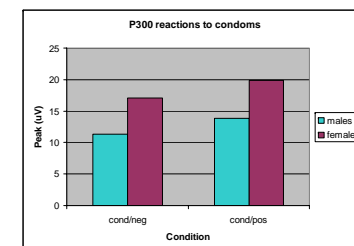
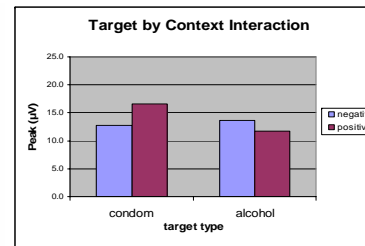
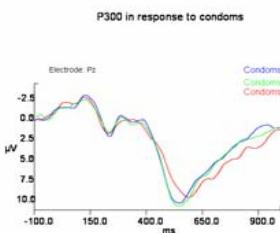
Condom images presented in a negative context produced a significantly smaller P3 ( $M = 12.78$ ), than condom images presented in a positive context ( $M = 16.62$ ),  $F(1, 27) = 10.47$ ,  $p < .01$ .

According to the logic of the oddball paradigm, this indicates smaller evaluative distinction between condoms and negative than between condoms and positive (i.e. implicit evaluations were more negative than positive).

The Context x Sex interaction was not significant,  $F(1, 27) = 1.26$ ,  $p = .27$ , indicating that this effect was generally similar for men and women.

There was also a main effect of Target, in which condom images produced larger P3s overall ( $M = 14.70$ ) than alcohol images ( $M = 12.71$ ),  $F(1, 27) = 5.32$ ,  $p < .05$ .

In contrast, P3 to erotic alcohol images and alcohol cues alone indicated positive implicit evaluations since alcohol images presented in a positive context produced a smaller P3 amplitude ( $M = 11.79$ ), than condom images presented in a negative context ( $M = 13.64$ ).



## CONCLUSIONS

Our results replicate previous work by Marsh et al. indicating that explicit condom attitudes are generally positive, but extend those findings by showing that implicit attitudes appear less positive, seen here as a smaller difference in evaluative categorization of condoms when presented in a negative compared to a positive context.

In contrast, P300 to erotic alcohol images and alcohol cues alone indicated positive implicit evaluations, suggesting an evaluative dissociation between attitudes toward condoms attitudes toward sex or alcohol.

These preliminary data suggests ERPs may be a viable method for studying implicit attitudes, but more research is needed to determine if ERPs could predict condom use behavior prospectively. Implicit attitudes toward condom use, coupled with measures of alcohol expectancies, can be helpful in constructing theoretical models of risk behavior and informing future interventions.

It is also not clear whether these differences in P300 amplitude are due to attitudes toward condoms per se or if they are related to arousal. Current studies in our lab are testing this question.

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