In-session Language Temporally-Oriented Towards the Past Decreases Alcohol Demand

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INTRODUCTION

❖ Alcohol misuse is a serious problem among US college students.

❖ The persistently high valuation of a reinforcer (i.e., demand) is one of the two joint factors of reinforcer pathology that behavioral economics uses to explain substance use disorder (Bickel et al., 2014).

❖ During clinical interactions, how clients discuss their behavior in terms of temporal orientation (i.e., past, current or future) may influence the reinforcing value of alcohol.

❖ The current study aims to examine how the temporal orientation of in-session client language influences alcohol demand.

METHODS

❖ **Participants** (N = 31) were college students reporting at least two heavy alcohol drinking episodes in the past month participating in a brief alcohol intervention.

   ❖ M_{age} = 17.84 (SD = 5.17) years old, 74.2% female.

❖ **Procedure.** Each participant took part in an alcohol brief motivational intervention plus a behavioral economic substance-free activity session. They completed the Alcohol Purchase Task (APT; Murphy & MacKillop, 2006), a task evaluating alcohol demand, before and after the intervention. Language during the intervention was recorded and parsed into utterances, or units of speech that represents a distinct thought or idea. Then each utterance was coded based on the temporal nature based on when the value of a behavior was to be earned or received, not necessarily when the behavior itself occurred.

❖ **Measures**

   ❖ **Client language.** Percentage of past, current and future temporal orientation was calculated based on the total number of utterances per session.

Table 1. Example of Temporal Orientation Coding

Client Statement	Temporal
I don't think drinking will affect where I end up in terms of a job.	Future
I want to cut down my drinking to only weekends.	Current
In high school, I found studying to be really boring	Past

   ❖ **Alcohol demand.** Alcohol demand was assessed via the Alcohol Purchase Task (Murphy & MacKillop, 2006). Participants report how many hypothetical alcoholic drinks they would purchase that night at 14 prices per drink ranging from $0 to $9.00. An index of alcohol demand, O_{max}, a measure of maximum alcohol expenditure, was calculated before and after intervention.

❖ **Analyses.** All variables were examined for missing data, outliers and distribution abnormalities. Two cases were removed due to missing data. Regression models were tested via SPSS 25 with the 3 temporal orientation codes as simultaneous predictors and change in O_{max} as the criterion variable.

RESULTS

Multiple regression showed temporal orientation in client language explained 34.1% of the variability in the change of O_{max}, which was statistically significant, $F(3,25)$ = 4.31, p = .014. Past language was a significant predictor of reductions in O_{max} (β=-.513, α=.005). However, neither Present nor Future were significantly associated with change in O_{max}.

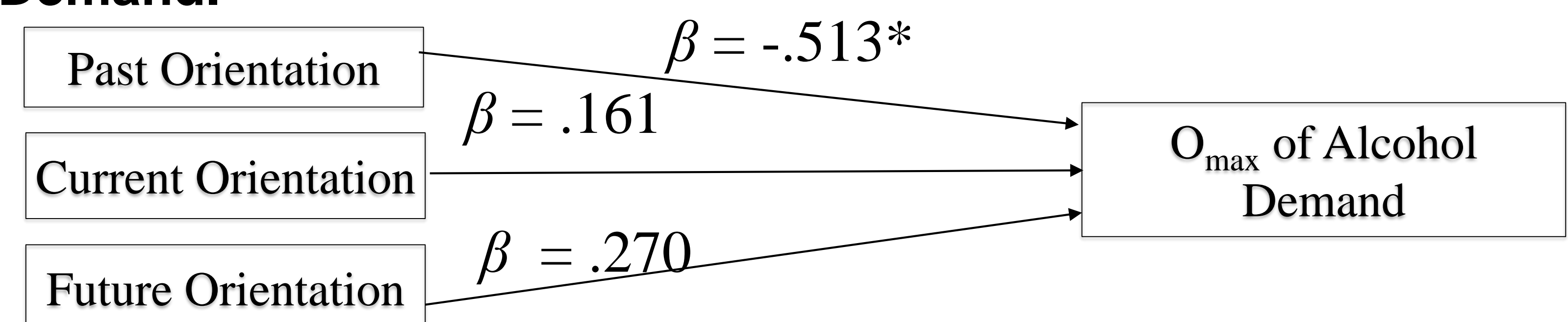### Figure 1. Effect of Language Temporal Orientation on Alcohol Demand.

Table 2. Temporal Orientation in Language, Pre-Post O_{max}.

	Mean	SD
Past	3.91%	2.38%
Current	73.26%	7.02%
Future	4.06%	2.16%
Pre-O_{max}	19.19	25.37
Post-O_{max}	11.59	16.15

DISCUSSION

❖ Past language was the least frequent temporal orientation exhibited during the intervention session, yet significantly predicted a decrease in alcohol demand.

❖ One possible explanation is that talking about negative consequences of drinking in the past may increase motivation to reduce alcohol demand. Future research could analyze the combined effects of temporal orientation and behavioral motivation on the intervention outcomes.

❖ Traditional motivational interviewing coding systems (e.g., change/sustain talk) categorize past-oriented language into a catchall follow/neutral category. These results suggest that past temporally-orientated client language may be clinically important, and worthy of additional investigation.

References

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