

## Background

- Alcohol consumption only partially accounts for problems attributed to drinking, leaving a substantial portion of problems unexplained (Park & Grant, 2005; Sadava, 1984).
- Normative beliefs about how much others drink predict these problems, but consumption variables have not been controlled for and could fully mediate this effect (Ham & Hope, 2006; Neighbors et al., 2007).
- College students infer from their normative beliefs about students' drinking that drinking must have benefits (Rimal & Real, 2003).
- Drinkers with more positive alcohol expectations report more problems regardless of consumption (Park & Grant, 2005).
- Leigh (1987) observed that heavy drinkers perceived the "good" effects of drinking as more pleasurable and the "bad" effects as not so bad.

- Consumption Quantity** (2 items): Average of past month and past 2-week peak consumption ( $r = .78$ ;  $M = 5.33$ ;  $SD = 4.16$ ).
- Alcohol-related problems** (24 items): Brief Young Adult Alcohol Consequences Questionnaire (B-YAACQ; Kahler et al., 2005). Past year experience of an array of consequences varying in severity, rated yes / no. Sum ranged from 0 to 22 ( $M = 5.57$ ;  $SD = 4.99$ ).
- Grouping of problems:** Impact of Alcohol on Work / School Work (3 items); Physical Symptoms (6 items, 80.2% of the sample), Loss of Control (7 items, 69%); Alcohol Dependence (6 items, 39%); Body Image (2 items, 23.9%).

## Structural equation Modeling

- The model tested in Figure 1 fits the data well.
- Students who perceived a heavier drinking norm viewed more benefits to alcohol and reported more problems, over and above the effects of consumption quantity and frequency on problems.
- Removing the direct effects of perceived norm and benefits on alcohol-related problems substantially reduced the model fit ( $\chi^2[16] = 84.60$ ,  $p < .000$ ;  $CFI = .90$ ;  $RMSEA = .11$ ;  $\Delta\chi^2[\Delta 2] = 59.5$ ,  $p < .0001$ ).
- Believing that heavy drinking was the norm among their friends led participants to hold more positive expectations about drinking.
- Normative beliefs and perceived benefits of alcohol led to heavier and more frequent drinking. Also, heavier drinking led to more frequent drinking.

## Results

Table 1. Inter-correlations Between Variables Entered in the Model.

	Gender	Age	Race	Weight	Norm	Benefits	Frequency	Quantity
<b>Age</b>	.13*							
<b>Race</b>	ns	ns						
<b>Weight</b>	.49***	.13*	ns					
<b>Norm</b>	ns	.12*	.13*	ns				
<b>Benefits</b>	.11*	ns	.14**	ns	.31***			
<b>Frequency</b>	.20***	ns	.19***	.15**	.44***	.30***		
<b>Quantity</b>	.29***	ns	.17**	.31***	.50***	.34***	.54***	
<b>Problems</b>	ns	ns	.24***	ns	.43***	.49***	.49***	.48***

## Normative Model of Problems

- Problems attributed to alcohol may be perceived by college students as socially normative.
- Students may view them as socially desirable rather than detrimental.
- In this model, problems are viewed as another set of normative beliefs and/or behaviors that fit with the perception of a heavy drinking norm: They are beliefs about the effects of heavy drinking and/or behavioral exemplars of heavy drinking.

## Hypotheses

- Perception of a heavy drinking norm and perceived benefits of drinking will predict self-reported, alcohol-related consequences over and above the influence of drinking quantity and frequency.
- Perceived benefits of alcohol will follow from the drinking norm: Believing that a behavior is common in one's social group may increase its subjective positive value.

## Method

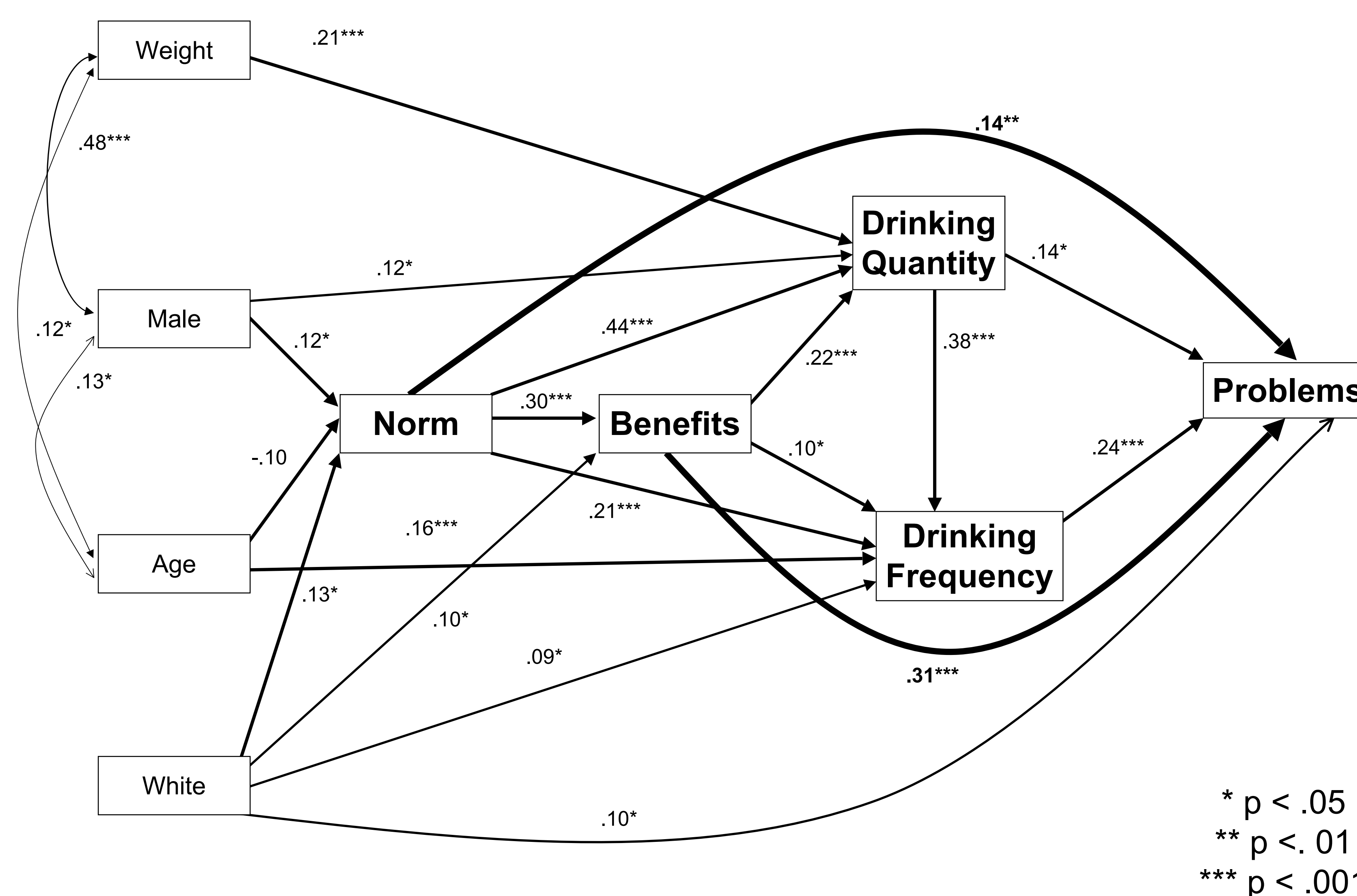
### Participants

- 374 (238 women) drinking, undergraduate students, 18 to 30 years of age ( $M = 22.00$ ), 65.8% White.

### Measures

- Normative Beliefs** (3 items): % of friends (male, female) estimated to drink 5 (4 for female) or more drinks per occasion ( $\alpha = .95$ ;  $M = 51.14\%$ ;  $SD = 32.66$ ).
- Perceived Benefits** (11 items): Desired outcomes of drinking (Park & Grant, 2005), 1 = not at all, to 5 = very much. ( $\alpha = .87$ ;  $M = 2.13$ ;  $SD = .77$ ).
- Consumption Frequency** (1 item): Number of occasions had alcohol during the past 12 months ( $M = 44$ ;  $SD = 60.66$ ).

Figure 1. Normative Model of Alcohol-related Problems.



$\chi^2[14] = 25.1$ ,  $p < .05$ ;  $CFI = .98$ ;  $RMSEA = .046$ , 90% CI = .013-.075,  $p[\text{close}] > .55$

## Accounting for specific types of problems

- The model had the best fit for Impact on Work and School Work and for Dependence. Fit indices were the lowest for Physical Symptoms although the model still fit the data (Table 2).
- The direct path of perceived norm to self-reported Physical Symptoms was highly significant but was only marginal for loss of control ( $p < .06$ ) and not significant for the other types of problems.
- Perceived Benefits of alcohol was a strong mediator of the effect of Normative Beliefs on all types of problems.

Table 2. Test of Model on Specific Types of Problems, Norm and Benefits Direct Effects on Problems, and Mediation of Norm Effect by Benefits.

	Model Fit	Norm (1) Direct effect	Benefits (2) Direct effect	Mediation of 1 through 2
<b>Work / School</b>	CFI = .99; RMSEA = .026	.08	.18***	Z = 4.39, $p < .00002$
<b>Dependence</b>	CFI = .99; RMSEA = .025	.06	.23***	Z = 4.85, $p < .00001$
<b>Body image</b>	CFI = .98; RMSEA = .040	.08	.20***	Z = 4.37, $p < .00002$
<b>Loss of control</b>	CFI = .98; RMSEA = .046	.11	.32***	Z = 5.72, $p < .00001$
<b>Physical symptoms</b>	CFI = .97; RMSEA = .060	.20***	.25***	Z = 5.48, $p < .00001$

## Conclusion

- Alcohol-related consequences are "socially situated": They emerge in a social context where, for many students, drinking heavily is the norm. These consequences reify the college drinking culture: They are clear manifestations that one belongs in that culture.
- The more students believe that drinking heavily is the norm among their friends, the more they make positive attributions to alcohol and the more they endorse alcohol-related problems in order to fit into that norm.
- When applying the model to specific types of problems, variations suggest that the associations between variables are not mere measurement artifacts.
- The effect of normative beliefs was direct on physical symptoms and indirect on the other types of problems.
- Perceived benefits of alcohol was a strong predictor of each type of problems. Problems may be valued by those who believe that heavy drinking is the norm as they may emblemize heavy drinking.