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The Influence of Status on Group Drinking by Young Adults: A Survey of Natural Drinking Groups on their Way To and From Bars

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Abstract

**Background:** Young people’s social standing among friends and peers has been linked to general levels of drinking and has been shown to influence others’ drinking. We extend previous research by examining young adults’ status *within their natural-occurring drinking groups* as a predictor of their subsequent alcohol consumption and encouragement of group members’ alcohol consumption *during a night out at licensed drinking establishments*, a salient context for heavy drinking and alcohol-related risk among young adults. **Method:** We recruited same-sex young adult drinking groups (*n* = 104 groups; 63 all-male; average group size = 3.4 members; *M* _age_ = 21.86) on their way to drinking establishments to complete a survey – containing measures of member-nominated within-group status, likeability and self-reported alcohol consumption – and a breathalyzer test. At the end of the evening, participants completed the same alcohol consumption measures and were asked to nominate group members who encouraged other members to drink that night. **Results:** Multi-level analysis revealed that higher-status members engaged in the most alcohol consumption (via both self-report and breathalyzer) but in heavier drinking groups only. Higher-status members also encouraged the most alcohol consumed by others, regardless of levels of group drinking. Further, even though being liked by one’s peers was positively related to intoxication that night, it did not account for the significant relationship between within-group status and drinking. **Conclusions:** Results suggest that peer-related prevention programs for young adults’ problem drinking may benefit from focusing on the structure and dynamic of young people’s drinking groups. Also, programs targeting peer norms may be more successful if they incorporate status-related issues. **Keywords:** Alcohol consumption; natural drinking groups; status; influence; licensed drinking establishments.
Introduction

Young adults almost always drink within groups of friends; however, the dynamic relationships within drinking groups and their impacts on consumption have rarely been studied. Lange and colleagues have defined a natural drinking group (NDG) as two or more individuals organized to share social activity centered on drinking who are bonded by friendship or other interpersonal relationships (Lange et al., 2011, Lange et al., 2006). One element of the dynamic relationships within NDGs that may play an influential role in drinking is status within the group.

According to Resource Control Theory (Hawley, 1999), persons who have access to desirable group resources are imbued with higher-status positions within the group’s dominance hierarchy. Young people tend to perceive peers who drink heavily as being outgoing, tough and/or “cool” and as having a high tolerance for alcohol (Demant and Järvinen, 2011). These perceptions may help heavier drinkers gain access to valuable NDG resources, such as attention from others or control over group decisions, and thus achieve or maintain higher-status group positions. Consistent with this, Phua (2011) found that fraternity members who occupied more central positions within their fraternity’s organizational hierarchy engaged in heavier drinking in the presence of their peers as compared to members with more peripheral fraternity positions. Similarly, Dumas and colleagues (under review) found that male university students who self-identified as occupying higher-status positions within their friend group engaged in more heavy episodic drinking in the previous month than did those who reported lower-status positions.

Past research, however, has not distinguished between status and likeability, the latter of which has also been linked to drinking (Demant and Järvinen, 2011, Engels et al., 2005, Nezlek et al., 1994, Pearson et al., 2006). Although these constructs are correlated, higher-status peers
are not necessarily more *liked* than their lower-status counterparts (Lease et al., 2002, Parkhurst and Hopmeyer, 1998, Xie et al., 1999). Status and peer-perceived popularity tend to be related to behaviors such as leadership, social dominance and influence over others whereas likeability and peer preference tend to be related to behaviors such as being kind and trustworthy (Gest et al., 2001, Sandstorm and Cillessen, 2006). Further, higher-status or more popular young people can maintain powerful and prestigious social positions in prosocial and/or coercive ways (e.g., being friendly and kind to others or being exclusionary and manipulative) (Hawley, 2003); as such, their means for maintaining status may partially determine how much they are liked by peers. Thus, when focusing on the role of status in the drinking behavior of young people’s NDGs, it is important to account for the potential effects of likeability.

Social Identity Perspective (SIP; Hogg, 2005) suggests that higher-status group members best embody group norms. Not only does their more prototypical behavior afford them greater social standing, but they also exert a stronger influence in setting and maintaining group norms than lower-status members (Valente et al., 2005). Further, because they are the most visible group members (Lansford et al., 2009), their behavior may be more readily modeled by other members. Thus, higher-status rather than lower-status individuals are expected to have a greater influence on the drinking of other group members. Consistent with this, adolescents’ drinking appears more affected by popular, high-status peers (Bot et al., 2005, Teunissen et al., 2012) and qualitative research demonstrates that young adults who held more central positions in their friend groups appeared to play a bigger role in determining appropriate alcohol-related group behaviors: how much to drink, where to drink and appropriate reasons to drink (Demant and Järvinen, 2011).
A wealth of extant research demonstrates that peers play an indirect role in young people’s drinking via their perceptions of how much peers drink (descriptive norms) and how much peers endorse drinking (injunctive norms) (e.g., Borsari and Carey, 2001, 2003, Neighbors et al., 2007, Perkins, 2002, Perkins and Berkowitz, 1986), and more salient reference groups such as friends have an especially powerful effect on young people’s drinking (Neighbors et al., 2008). In addition, the actual drinking levels or collective drinking norms (Lapinski and Rimal, 2005) of salient reference groups provide important information on appropriate group behavior. Collective drinking norms of the groups with whom young adults drink have a significant effect on individual levels of consumption (O’Grady and colleagues, 2011; van Schoor and colleagues, 2008).

Higher-status individuals act in ways that are most consistent with group norms perhaps because they play a greater role in developing them (SIP; Hogg, 2005) and thus endorse norms more aligned with their existing attitudes and behaviors and/or perhaps because they are especially motivated to act in line with group norms. According to the Theory of Normative Social Behavior (TNSB; Rimal and Real, 2005), members who are more likely to internalize group behavior into injunctive norms, who see more personal benefits for acting in accordance to group behavior, and who have a strong group identity will be particularly motivated to act in ways that are consistent with perceived group behavior. Higher-status individuals may be more sensitive to group behavior and more likely to internalize certain behaviors as expected (injunctive norms) because of personal benefits of acting in accordance with group norms (maintenance of high status positions, positive evaluations from group members; Hogg, 2005). They may also feel a stronger connection to the group than lower-status members, who may not be treated as positively by peers (Hogg, 2005), and may have a greater desire to uphold group
identity by acting in accordance with (and encouraging other members to act in accordance with) group norms. It can be posited then, that when collective group norms for drinking are high, the relationships of status with drinking and encouraging others to drink should be particularly strong. Conversely, when collective group drinking is low, it is unlikely that higher-status members will drink substantially more than their counterparts or encourage higher consumption, and may even consume the least amount of alcohol because they would be expected to model behavior most in line with group norms (Hogg, 2005).

Finally, drinking appears to be more important for the social lives of young men than young women. Young men are more likely than young women to have groups of friends in which drinking (often to excess) is a common bonding activity facilitated by group members (e.g., Nezlek et al., 1994, Thombs et al., 1993). Also, young men report more social pressure to drink and more social repercussions (not “fitting in”) from voicing alcohol-related concerns than do women (Suls and Green, 2003). Further, heavy drinking is associated with masculinity and power for young men (De Visser and McDonnell, 2013, Peralta, 2007, Tomsen, 1997). For these reasons, drinking may be more strongly associated with status in male rather than female NDGs, and male rather than female heavy drinkers may be more influential on the drinking of their same sex peers.

The Present Study

Previous research has been limited by not separating the role of status from likeability, not measuring attitudes toward drinking and not taking into consideration NDG norms. In addition, research designs can be strengthened by examining young people’s status within natural, pre-existing NDGs and assessing drinking-related behavior, including self-report and objective measures, in natural drinking contexts. In this study, members of all-female and all-
male groups completed alcohol consumption measures and a breathalyzer test on their way to the
district (entry) and again when they were returning home from the bar district (exit). The
entry survey contained measures of member-nominated status and likeability. Additionally,
participants in the exit survey nominated group members who encouraged other members to
drink that night.

Consistent with research suggesting that people with greater social positions in their social
hierarchies engage in more alcohol consumption (Dumas et al., under review, Phua, 2011), we
hypothesized that:

H1: Higher-status group members will (a) drink more and (b) become more intoxicated than
lower-status members, controlling for likeability.

In line with theory (SIP; Hogg, 2005) and research (Valente et al., 2005) suggesting that high
status individuals have more influence over their peers’ behavior than lower-status individuals
(Gest et al., 2001, Sandstorm and Cillessen, 2006), we hypothesized that:

H2: Higher-status group members will be more likely than lower-status members to
encourage peers to drink, controlling for likeability.

Also, consistent with theory suggesting that higher-status group members best embody group
norms (SIP; Hogg, 2005, see also Lansford et al., 2009, Valente et al., 2005) and may be
especially motivated to act in ways that are consistent with group behavior (TNSB; Rimal and
Real, 2005), we hypothesized that:

H3: The relationship of status with drinking/intoxication and encouraging drinking will be
moderated by group drinking; that is, there will be a stronger relationship for heavier
drinking NDGs.
Finally, because there appear to be more social rewards (e.g., Nezlek et al., 1994, Thombs et al., 1993) and pressures (Suls and Green, 2003) for young men to engage in heavy drinking than young women, we hypothesized that:

H4: Status will be more strongly related to drinking and encouraging drinking for male than for female groups.

Method

Recruitment

Same sex groups of young adults were recruited while on their way to drinking establishments in the downtown core of a mid-sized city in Southern Ontario, Canada on Thursday-Saturday evenings in May-July 2012. Groups were approached using the “fixed line” method (Voas et al., 2006); the first group to cross a predetermined fixed line on the sidewalk was approached. Research assistants watched people’s feet as they crossed the line as opposed to their faces in order to reduce potential bias in who was chosen to participate in the research. Participants were required to be between the ages of 19-29 years (19 is the legal drinking age in Ontario) and to be a resident of the community. In order to process participants quickly, the maximum group size recruited was 5 (minimum was 3 to allow for some variation in status).

At the time of recruitment, groups were given a brief description of the study and asked to show proof of age and to report community of current residence in order to confirm eligibility. Of the 383 eligible groups approached, 104 (27.2%) groups (357 individuals, $M_{age} = 21.86, SD = 2.50$) agreed to take part. Eight participating groups (all-male; 2 groups of 5, 6 groups of 4) were reduced by 1 member due to his ineligibility ($n = 2$) or lack of interest in participating ($n = 6$). The final average group size was 3.4, with 69 groups of 3 (41 all-male, 28 all-female), 25 groups of 4 (15 all-male, 10 all-female) and 10 groups of 5 (7 all-male, 3 all-female). Characteristics of
groups with respect to size and levels of drinking were similar to groups studied in other young-adult settings (Lange et al., 2011, Lange et al., 2006, Lange et al., 1999).

Procedures

Data were collected at a nearby mobile research lab (see Wells et al., 2011) located in a well-lit parking lot. Separate private research stations, including two chairs and a table (one for each participant and a research assistant) were set up under an awning beside the lab. To start, the field supervisor explained the study in detail, asked participants to provide verbal consent for both surveys, and offered participants a copy of the study information sheet. Participants were also asked to list the first names or nicknames of all participating group members for the peer ranking status and likeability task (described below).

Entry Survey. This 10-minute survey included measures of gender, age, height, weight, number of reported drinks prior to the survey, and the status and likeability ranking task. Research assistants then administered breathalyzer tests to participants. To maintain privacy and ensure that breathalyzer scores did not encourage participants to increase their drinking (e.g., to compete with friends), devices were programmed so that participants’ breath alcohol concentrations (BrACs) were not displayed on the screens, but rather saved for future download. Following breathalyzer tests, participants were reminded to return for the exit survey. Participants willing to provide their cell phone numbers were sent a reminder text message from a study cell phone (text messages were immediately deleted to ensure participant confidentiality). To facilitate linking of entry and exit data, participant numbers were a priori placed on blank copies of entry and exit surveys, provided orally to participants and written on their hand (with a marker). The completed entry survey was locked securely in the mobile lab immediately following completion, while the recording of group members’ names was stored
along with the blank exit survey by the field supervisor for easy retrieval once participants
returned for the exit survey.

Exit Survey. Upon return to the lab, each participant’s ID (marked on their hand) was
used to match to the individual’s corresponding exit survey instrument. The 10-minute exit
survey included number of reported drinks since the entry survey, nominations of members who
encouraged drinking and a second breathalyzer test. Participants did not have to return with their
group members to participate. Anyone judged too intoxicated to participate ($n = 1$) was excluded,
offered water, snacks, and arrangement for a taxi to transport them home.

Reimbursement. Participants received $10 and $25 gift cards for participating in the
entry and exit surveys, respectively. During the exit survey, returning participants and any of
their non-participating peers were provided with pizza, snacks and water, after breathalyzer tests
had been administered.

Measures

Breath Alcohol Concentration (BrAC). Breath samples were collected using a hand-
held Intoxilyzer 400-PA (CMI, Inc., Owensboro, KY).

Alcohol Consumption. Participants were provided with a definition of a Canadian
standard drink (12 oz. of 5% alcohol beer, 5 oz. of 12% wine, 1.5 oz. of spirits such as vodka,
etc.), including a visual representation of each type of drink, and asked how many drinks they
had consumed so far that day as part of the entry survey. In the exit survey, participants were
asked how many standard drinks they had consumed since participation in the entry survey. Two
variables were created from these items – number of drinks prior to entry survey and total
number of drinks. Each participant was assigned a score for their group’s drinking norm for each
measure defined as the average alcohol consumption of their friends with whom they completed
the study, excluding their own consumption.

**Status.** As part of the entry survey, each participant was given a magnetic board with a
set of magnets on which the first names (or nicknames) of everyone in their group had been
written, including themselves. Boards were marked with 2 adjoining arrows – one pointing
upwards that read “most” and one pointing downwards that read “least.” Participants used the
magnets on the board to rank their group members, including themselves, along 4 different
status-related dimensions from the person who *most* embodied a given description to the person
who *least* embodied this description. Dimensions were: (1) makes group decisions; (2) has
opinions that are listened to by other group members; (3) possesses popularity; and (4) with
whom it is important to comply. These items, which are consistent with the Resource Control
Theory conceptualization of status (Hawley, 1999), were adapted from Gavin and Furman’s
(1989) hierarchy scale, which measures the extent to which peer groups contain dominant
leaders. To calculate participants’ peer-nominated status scores, we averaged participants’
rankings from their peers across the 4 different dimensions and group members. For ease of
interpretation, participants’ status scores were multiplied by 10 and scored so that higher scores
indicated higher-status within the group. This scale showed good internal consistency (α = .83).

**Likeability.** In the entry survey, after the status rankings, participants ranked their group
members and themselves from the person who is liked most by other members to the person who
is liked least by other members. We derived participants’ peer-nominated likeability scores by
averaging their rankings from other group members. Likeability scores were multiplied by 10
and scored so that higher scores indicated greater likeability within the group.
Encouragement of Alcohol Consumption. In the exit survey, participants were given the magnets used in the status ranking task (labeled with their group members’ names) and asked to give the research assistant the magnet corresponding to “…the people who tried to encourage you to drink alcohol tonight, for example by buying you drinks, teasing you, cheering you on, or telling you to drink more.” Consistent with other research that has relied on peer nominations (e.g., Bot et al., 2007), we created proportion scores by dividing the number of nominations each individual received by the number of total possible nominations (the number of group members who returned to complete the exit survey).

Analyses

Hierarchical Linear Modeling (HLM; Bryk and Raudenbush, 1992) was used in order to account for the interdependence of group members’ scores and examine both individual-level and group-level predictors in the same regression models. Using the statistical program HLM6, we ran a series of models with the following 5 dependent variables (DVs): (1) entry BrAC, (2) exit BrAC, (3) entry number of drinks, (4) total number of drinks consumed (entry + exit), and (5) encouraging consumption. The HLM models consisted of a Level 1, within-group random intercept analysis and a Level 2, between-group analysis. In all models, status and likeability were group-mean centered so that we could compare participants’ status/likeability with that of their group members rather than to other people in the study. Other predictors were grand-mean centered for ease of interpretation. Significant interactions were analyzed following the guidelines of Aiken and West (1991) and were graphed one standard deviation above and below the mean for both variables. Simple slope tests for interactions were conducted following the procedures of Preacher et al. (2006).
Missing data. Missing data was mostly due to attrition, with 70 (20%) of participants not returning to complete the exit survey at the end of the evening and 2 being too intoxicated to participate. In addition, forty-six participants (13%) had missing data on whether they encouraged drinking because their group members did not return to complete the exit survey. Other missing data resulted from one participant who refused to do the breathalyzer test at entry and exit, and a participant at entry who could not remember how much alcohol he had consumed. To estimate missing data, we used multiple imputation (MI), which uses a maximum likelihood procedure based on relations among all existing participant information to predict missing values (Little and Rubin, 2002, Rubin, 1987). As such, it produces more plausible parameter estimates than listwise deletion and is recommended for HLM analyses (Raudenbush et al., 2004). Because of our relatively small percentage of missing data (ranging from less than 1% to 20%), 5 imputed data sets were deemed sufficient to maintain statistical power (Graham et al., 2007).

Data sets were created using SPSS 20 and aggregated to produce a final estimate of parameters (Rubin, 1987).

Results

Descriptive statistics and zero-order correlations for all level-1 variables are shown in Table 1. These results were calculated across all participants and are provided for descriptive purposes only because they do not take into consideration nesting of participants or compare participants to members of their specific group. Participants drank, on average, 3.75 drinks prior to the entry survey and 7.16 in total, and their average BrAC was .04 on entry and .06 at exit. As shown in Table 1, status and likeability were highly correlated ($r = .48$). Status was also significantly related to total number of drinks consumed that evening and encouraging others to
consume alcohol. Likeability was positively related to BrAC at entry and to encouraging others
to consume alcohol, and was marginally related to BrAC on exit.

Further, for descriptive purposes, we identified participants in each group that occupied:
1) the highest status positions; 2) middle-status positions; and 3) the lowest status positions and
compared the first group’s drinking to that of the latter two groups. Highest status group
members drank, on average, 0.3 and 0.5 more standard drinks than the middle-status members of
their group and 0.8 and 1.6 more standard drinks than the lowest-status members of their group
at entry and in total, respectively. Their BrACs were, on average, .001 and .004 points higher
than middle-status members and .006 and .005 higher than the lowest-status members of their
group at entry and at exit, respectively.

Hypothesis Testing

As shown in Table 2, we entered predictors in 5 steps. In Step 1, we included status as a
level-1 predictor to examine its unadjusted relationship with our DVs of interest. In Step 2, we
added height, weight, and age at level-1 and gender of the group at level-2. We also included the
cross-level interaction between status and gender of group to test whether status is differentially
related to the DVs in all-male versus all-female groups. Height and age were not significant
predictors in any models and not significantly related to status. In Step 3, likeability was added as
a level-1 variable to determine whether the relationship between status and the DVs remained
significant after controlling for likeability. In Step 4, we added friends’ average alcohol
consumption as a level-1 variable (rather than at the group-level) because each participant had a
different set of friends and thus a different score on this measure. In Step 5, we included
interaction terms. To test our hypothesis that status would be a stronger predictor of participants’
alcohol consumption in heavier drinking groups, we included interaction terms between friends’
alcohol consumption and participants’ status. We also tested interaction terms between likeability and other predictor variables (i.e., status, friends’ average consumption, and gender of group). Further, we included 3-way interactions with gender of the group as a moderator of all 2-way interactions but no 3-way interactions were significant. All non-significant interaction terms were removed from the final models to increase parsimony and statistical power (West et al., 2007).

In line with Hypotheses 1a and 1b, status was a significant, positive predictor of BrAC at entry and number of drinks consumed both at entry and in total, and marginally related to BrAC at the end of the night \( p = 0.06 \) in the bivariate models. The relationship between status and total number of drinks remained significant when all other variables were in the model. Hypothesis 2 was also supported with status as a significant, positive predictor of encouraging group members to consume alcohol, even when covariates were included in the model.

Consistent with Hypothesis 3, that the relationship between status and drinking would be moderated by group norms, status was a significant predictor of all alcohol consumption DVs for groups with higher average consumption only (see also Table 3 showing simple slope analyses for groups with lower vs. higher alcohol consumption). However, the interaction between status and friends’ drinking in predicting the encouragement of alcohol consumption was non-significant, suggesting that the relationship between status and encouraging drinking was not moderated by group drinking norms.

Hypothesis 4 was partly supported in that we found a cross-level interaction between status and gender in predicting total number of drinks consumed. Simple slope analysis revealed that status was a significant predictor of total number of drinks consumed in male groups \( b = \)
.55, t = 13.58, p < .001) but not in female groups (b = .17, t = 0.98, p = 0.33). No other gender
differences were found.

Discussion

Our hypotheses were generally supported. Compared to lower-status members, higher-
status group members: (1a) drank more (1b) became more intoxicated and (2) encouraged others’
drinking more, controlling for likeability. In addition, (3) status was related to consumption in
groups with heavier descriptive norms for drinking. Finally, (4) there was some evidence that
status was more important in drinking for male than female groups consistent with evidence that
drinking among men is an important bonding activity (e.g., Nezlek et al., 1994, Thombs et al.,
1993) and plays a powerful role in determining young men’s behavior (Prentice and Miller,
1993).

These findings have implications for health risk behaviors given that high status peers
have a more central, visible social standing within their group (e.g., Lansford et al., 2009) and
that their behavior is more likely to be readily adopted by other group members. In groups in
which alcohol is consumed and accepted, heavy drinking high status members may play a
heightened role in socializing other members’ drinking-related behavior. This finding is
consistent with previous research suggesting that teens with higher social standing may have a
greater influence on others’ attitudes (Teunissen et al., 2012) and behavior (Bot et al., 2005)
surrounding drinking.

Interestingly, we found that even within NDGs that drank less, higher-status individuals
were more likely to encourage others to drink. We sampled bar-going groups, however, and so
overall acceptance of drinking was likely high. Also, the actual amount of alcohol that
participants encouraged group members to consume was not measured in our study. Further
research is needed to assess more precisely the extent that peers are being encouraged to engage
in excessive drinking and the processes by which higher-status members engage in group
influence. In our study we used an aggregate of reinforcement (cheering you on), punishment
(teasing you), and more direct forms of influence – buying you drinks or telling you to drink
more. For intervention purposes, it would be useful to tease out and identify the major routes by
which this encouragement happens.

Although status was more strongly related to total number of drinks for male than for
female groups, associations of status with BrAC and encouraging drinking were significant for
both men and women. Thus, results suggest that, although heavy drinking is associated with
masculinity and power among young men (De Visser and McDonnell, 2013, Peralta, 2007,
Tomsen, 1997), it also appears to be associated with higher-status among young women, and
young women may direct positive evaluations to their female group members who can tolerate
heavy drinking in social situations (Demant and Järvinen, 2011, Lyons and Willott, 2008). These
findings suggest the importance of addressing status-related concerns in both young men and
women.

Our study has some limitations. First, we focused our research on same-sex NDGs and
thus our results cannot be generalized to mixed-sex groups. Second, it will be useful for
researchers to employ more detailed measures of encouragement of drinking in future analyses.
For example, while we know that higher-status members were more likely to encourage others to
drink, we do not know if this successfully resulted in more group drinking nor to which members
this encouragement was directed. Third, although status nominations were conducted at entry
(i.e., prior to the end of the night drinking measures), we cannot comment on the causality of the
associations between status and drinking-related behavior. Longitudinal research is needed to
examine the long-term patterns of status and drinking. Finally, although many participants in
were intoxicated, severely intoxicated people were not recruited for safety reasons. Prior research
suggests that people who consistently drink “too much” and as a result become sick or unable to
care for themselves are seen as a burden by other group members (Demant and Järvinen, 2011).
Thus, while alcohol consumption may be positively related to status in most instances,
participants who tend to be severely intoxicated during at the bar may occupy lower-status
positions in their NDG hierarchy.

Limitations notwithstanding, this study has clear practical implications. Results suggest
that peer-related prevention programs for young adults’ problem drinking should focus not only
on peer drinking norms, as has been done in the past (e.g., Neighbors et al., 2004, Walters et al.,
2000), but also on issues related to status among peers. By granting heavier drinkers more
prestigious and powerful social positions, young people are facilitating the heavy drinking
practices of higher-status people and those wanting to attain higher-status. As a preventative
effort, young people should be educated about: 1) the potential social repercussions of heavy
drinking, such as being perceived negatively (as a burden) by peers (Demant and Järvinen, 2011)
and 2) other, more constructive ways to achieve popularity and remain socially integrated and
active, such as joining clubs and sports teams (Holland and Andre, 1994). Further, prevention
programming may benefit from focusing efforts on higher-status group members. Past research
suggests that young people frequently overestimate the drinking habits of peers in general (e.g.,
the students at one’s university). Norm-based interventions seek to correct these misperceptions
by communicating actual peer drinking-levels to young people, which often leads to a reduction
in their own drinking (Lewis and Neighbors, 2006, Neighbors et al., 2004, Perkins, 2002).
Because higher-status members play a bigger role in setting and maintaining group norms, and,
as we found, play the biggest role in modeling and encouraging drinking in their NDGs, their heightened misperceptions about the frequency of drinking in the larger peer community may be particularly influential in normalizing heavy drinking within their own groups. Thus, a reduction in high status individuals’ personal drinking via norm-based intervention may have the most significant impact on alcohol consumption patterns of NDGs.

To conclude, these analyses of NDGs, using both self-report and objective measures of drinking, extend our knowledge beyond general patterns of status and drinking (see Demant and Järvinen, 2011, Dumas et al., under review, Phua, 2011). Our study makes a unique contribution to the literature by demonstrating that, on any given night, young people’s status in NDGs are related to how much they drink and encourage others to drink. Beyond general patterns of alcohol consumption, young people’s drinking on any given night can result in immediate and serious consequences, such as injury, unsafe sexual practices and violence (e.g., Dumas et al., in press) and thus it is important for us to have a clear understanding of contextual risks, including the social dynamic of young people’s NDGs.

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References


Hogg MA (2005) All animals are equal but some animals are more equal than others: Social identity and marginal membership, in The social outcast: Ostracism, social exclusion, rejection, and bullying, The social outcast: Ostracism, social exclusion, rejection, and bullying (WILLIAMS KW, FORGAS JP, VON HIPPEL W eds), pp 243-261, Psychology Press, New York, NY.


West BT, Welch KB, Galecki AT (2007) Linear Mixed Model, Chapman Hall/CRC.

Table 1

*Descriptive Statistics and Correlations for Level-1 Variables*

<table>
<thead>
<tr>
<th>Measure</th>
<th>M (SD)</th>
<th>1</th>
<th>2</th>
<th>3</th>
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<th>6</th>
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<th>8</th>
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<th>10</th>
<th>11</th>
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<tbody>
<tr>
<td>1. Status</td>
<td>0.62(0.17)</td>
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</tr>
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<td>2. Likeability</td>
<td>0.64(0.21)</td>
<td>0.48***</td>
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<tr>
<td>3. Entry BrAC</td>
<td>0.04(0.04)</td>
<td>0.05</td>
<td>0.14**</td>
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</tr>
<tr>
<td>4. Exit BrAC</td>
<td>0.06(0.05)</td>
<td>0.04</td>
<td>0.10†</td>
<td>0.62***</td>
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<tr>
<td>5. Entry # of Drinks</td>
<td>3.75(3.38)</td>
<td>0.04</td>
<td>0.05</td>
<td>0.64***</td>
<td>0.45***</td>
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<tr>
<td>6. Total # of Drinks</td>
<td>7.16(4.79)</td>
<td>0.11*</td>
<td>0.07</td>
<td>0.37***</td>
<td>0.64***</td>
<td>0.64***</td>
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<tr>
<td>7. Encourage</td>
<td>0.39(0.36)</td>
<td>0.22***</td>
<td>0.12*</td>
<td>0.07</td>
<td>0.20***</td>
<td>0.17**</td>
<td>0.20***</td>
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<tr>
<td>8. Friends’ Entry BrAC</td>
<td>-</td>
<td>-0.06</td>
<td>-0.05</td>
<td>0.60***</td>
<td>0.34***</td>
<td>0.56***</td>
<td>0.31***</td>
<td>0.14**</td>
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<tr>
<td>9. Friends’ Exit BrAC</td>
<td>-</td>
<td>-0.05</td>
<td>-0.03</td>
<td>0.36***</td>
<td>0.53***</td>
<td>0.40***</td>
<td>0.49***</td>
<td>0.17**</td>
<td>0.62***</td>
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<tr>
<td>10. Friends’</td>
<td>-</td>
<td>-0.08</td>
<td>-0.03</td>
<td>0.56***</td>
<td>0.38***</td>
<td>0.60***</td>
<td>0.37***</td>
<td>0.20***</td>
<td>0.77***</td>
<td>0.56***</td>
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<td>Measure</td>
<td>$M (SD)$</td>
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<td>6</td>
<td>7</td>
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<td>11</td>
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</tr>
<tr>
<td>11. Friends’</td>
<td>-</td>
<td>-0.10†</td>
<td>-0.02</td>
<td>0.32***</td>
<td>0.48***</td>
<td>0.38***</td>
<td>0.54***</td>
<td>0.20***</td>
<td>0.47***</td>
<td>0.76***</td>
<td>0.65***</td>
<td>0.75***</td>
</tr>
<tr>
<td>Entry # of Drinks</td>
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<tr>
<td>Total # of Drinks</td>
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</tbody>
</table>

*Note. n = 357; †p < .10, *p < .05, **p < .01, ***p < .001*
## Table 2. Hierarchical Linear Models Predicting Nightly BrAC, Number of Drinks and Encouragement of Alcohol Consumption

<table>
<thead>
<tr>
<th></th>
<th>Entry # of Drinks</th>
<th>Entry BrAC</th>
<th>Total # Drinks</th>
<th>Exit BrAC</th>
<th>Encourage Drinking</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step 1</strong></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Status</td>
<td>0.17(0.07)*</td>
<td>0.02(.001)*</td>
<td>0.42(0.11)**</td>
<td>0.002(.001)†</td>
<td>0.05(0.01)***</td>
</tr>
<tr>
<td><strong>Step 2</strong></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Status</td>
<td>0.16(0.07)*</td>
<td>0.002(0.001)*</td>
<td>0.38(0.13)**</td>
<td>0.002(0.001)†</td>
<td>0.05(0.01)**</td>
</tr>
<tr>
<td>Weight</td>
<td>0.08(0.05)</td>
<td>-0.0001(0.0001)*</td>
<td>0.02(0.01)*</td>
<td>0(0)</td>
<td>0.002(0.001)*</td>
</tr>
<tr>
<td>Gender</td>
<td>-0.13(0.58)</td>
<td>-0.001(0.008)</td>
<td>-0.70(0.87)</td>
<td>-0.009(0.01)</td>
<td>0.06(0.07)</td>
</tr>
<tr>
<td>Status X Gender</td>
<td>-0.12(0.14)</td>
<td>-0.001(0.002)</td>
<td>-0.42(0.21)*</td>
<td>0.002(0.002)</td>
<td>0.02(0.03)</td>
</tr>
<tr>
<td><strong>Step 3</strong></td>
<td></td>
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<tr>
<td>Status</td>
<td>0.14(0.10)</td>
<td>0.0002(0.001)</td>
<td>0.39(0.14)**</td>
<td>0.001(0.001)</td>
<td>0.05(0.02)**</td>
</tr>
<tr>
<td>Weight</td>
<td>0.004(0.005)</td>
<td>-0.0001(0.0001)*</td>
<td>0.02(0.01)*</td>
<td>0(0)</td>
<td>0.002(0.008)</td>
</tr>
<tr>
<td>Gender</td>
<td>-0.14(0.59)</td>
<td>0.002(0.01)</td>
<td>-0.54(0.79)</td>
<td>-0.009(0.10)</td>
<td>0.06(0.07)</td>
</tr>
<tr>
<td>Status X Gender</td>
<td>-0.11(0.14)</td>
<td>-0.001(0.002)</td>
<td>-0.37(0.21)†</td>
<td>0.001(0.002)</td>
<td>0.02(0.03)</td>
</tr>
<tr>
<td>Likeability</td>
<td>0.03(.08)</td>
<td>0.003(0.001)**</td>
<td>0.005(0.12)</td>
<td>0.002(0.001)†</td>
<td>0.001(0.01)</td>
</tr>
<tr>
<td></td>
<td>Entry # of Drinks</td>
<td>Entry BrAC</td>
<td>Total # Drinks</td>
<td>Exit BrAC</td>
<td>Encourage Drinking</td>
</tr>
<tr>
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</tr>
<tr>
<td><strong>Step 4</strong></td>
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</tr>
<tr>
<td>Status</td>
<td>0.20(0.13)</td>
<td>0.001(0.001)</td>
<td>0.50(0.19)*</td>
<td>0.001(0.002)</td>
<td>0.05(0.02)**</td>
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<tr>
<td>Weight</td>
<td>0.003(0.005)</td>
<td>0(0)</td>
<td>0.02(0.01)*</td>
<td>0(0)</td>
<td>0.002(0.001)*</td>
</tr>
<tr>
<td>Gender</td>
<td>0.27(0.36)</td>
<td>-0.001(0.04)</td>
<td>0.45(0.50)</td>
<td>-0.004(0.01)</td>
<td>0.08(0.06)</td>
</tr>
<tr>
<td>Status X Gender</td>
<td>-0.09(0.20)</td>
<td>0(0.003)</td>
<td>-0.42(0.28)</td>
<td>0.002(0.003)</td>
<td>0.02(0.03)</td>
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<tr>
<td>Likeability</td>
<td>0.04(0.11)</td>
<td>0.004(0.001)**</td>
<td>0.01(0.15)</td>
<td>0.002(0.001)†</td>
<td>0.001(0.01)</td>
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<tr>
<td>Friends’ avg cons*</td>
<td>0.79(0.03)***</td>
<td>0.74(0.04)***</td>
<td>0.68(0.06)***</td>
<td>0.70(0.05)***</td>
<td>0.02(0.005)***</td>
</tr>
<tr>
<td><strong>Step 5</strong></td>
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<tr>
<td>Status</td>
<td>0.20(0.12)</td>
<td>0(0.001)</td>
<td>0.50(0.17)**</td>
<td>0.001(0.002)</td>
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</tr>
<tr>
<td>Weight</td>
<td>0.005(0.004)</td>
<td>-0.0001(0.0001)*</td>
<td>0.02(0.01)**</td>
<td>0(0)</td>
<td>No significant</td>
</tr>
<tr>
<td>Gender</td>
<td>0.20(0.36)</td>
<td>-.003(0.004)</td>
<td>0.43(0.54)</td>
<td>-.003(0.006)</td>
<td>interactions</td>
</tr>
<tr>
<td>Status X Gender</td>
<td>-</td>
<td>-</td>
<td>-0.35(0.26)</td>
<td>-</td>
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</tr>
<tr>
<td>Likeability</td>
<td>0.004(0.10)</td>
<td>0.003(0.001)**</td>
<td>0.008(0.15)</td>
<td>0.002(0.001)†</td>
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</tr>
<tr>
<td>Friends avg cons</td>
<td>0.82(0.03)***</td>
<td>0.78(0.04)***</td>
<td>0.66(0.06)***</td>
<td>0.67(0.05)***</td>
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</tr>
<tr>
<td>Status X Friends’ avg cons.</td>
<td>Entry # of Drinks</td>
<td>Entry BrAC</td>
<td>Total # Drinks</td>
<td>Exit BrAC</td>
<td>Encourage Drinking</td>
</tr>
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<tr>
<td></td>
<td>0.11(0.03)***</td>
<td>0.09(0.03)**</td>
<td>0.11(0.02)***</td>
<td>0.06(0.03)*</td>
<td></td>
</tr>
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</table>

Note. $n = 357$; †$p < .10$, *$p < .05$, **$p < .01$, ***$p < .001$

*a Friends’ avg cons = the average of friends’ scores on the dependent variable of interest, except for encouraging drinking. For this DV, friends’ drinking = friends’ average exit BrAC
Table 3. *Simple Slope Analysis Predicting Individual Drinking Behavior from Status in NDGs with More Versus Less Alcohol Consumption*

<table>
<thead>
<tr>
<th>Outcome Variable</th>
<th>Simple Slope Analysis</th>
<th>Groups with Less Alcohol Consumption (-1 SD)</th>
<th>Groups with More Alcohol Consumption (+1 SD)</th>
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<tbody>
<tr>
<td></td>
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<td>$b$</td>
<td>$t$</td>
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<tr>
<td>Entry BrAC</td>
<td>0.001</td>
<td>-0.772</td>
<td>0.006*</td>
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<tr>
<td>Exit BrAC</td>
<td>0.000</td>
<td>-0.122</td>
<td>0.005*</td>
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<td>Entry # of Drinks</td>
<td>-0.109</td>
<td>-0.903</td>
<td>0.497**</td>
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<td>Total # of Drinks</td>
<td>-0.021</td>
<td>-0.099</td>
<td>0.965***</td>
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