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Binge-drinking: A test of the role of group norms in the Theory of Planned Behaviour.

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#### Abstract

A study was undertaken to assess the utility of the theory of planned behaviour in the prediction of students' binge-drinking. Additionally, a social identity theory/self-categorization theory perspective was utilised to address the usually weak contribution of subjective norms in predicting behavioural intentions. Respondents were 289 undergraduate students. The study employed a longitudinal design, with the predictors of performing the behaviour under consideration assessed prior to the measure of reported behaviour. Support was found for the application of the theory of planned behaviour to binge-drinking. A reconceptualisation of norms in the theory of planned behaviour, from a social identity theory/self-categorization theory perspective, was also supported; consistent with expectations, the norms of a behaviourally relevant reference group predicted intentions to binge-drink, especially for participants who identified strongly with the reference group. The results are discussed in relation to measures which may help to reduce the incidence of binge-drinking by university students.

Binge-drinking: A test of the role of group norms in the Theory of Planned Behaviour.

Excessive alcohol consumption and alcohol-related problems are a significant health concern. Numerous studies conducted over the last decade reveal that a high proportion of university students engage in risky single-occasion drinking, or binge-drinking (e.g., Bergmark & Andersson, 1999; Murgraff, Parrott & Bennett, 1999; Quigley & Marlatt, 1996). In recent years, health promotion campaigns have highlighted the negative health and social effects of binge-drinking and have advocated moderate alcohol consumption. However, it is apparent that knowledge of the health risks for binge-drinking has not translated into a reduction in binge-drinking behaviour (e.g., O'Malley, Johnston & Bachman, 1998).

Evidence of an inconsistency between people's beliefs and their behaviour is not limited to the context of binge-drinking. Numerous studies of attitude-behaviour relations have demonstrated that people's attitudes are often incongruent with their behaviour (Fishbein & Ajzen, 1975; Wicker, 1969). This incongruity led researchers to develop models that can describe more accurately the influences operating on an individual's behavioural decision-making. One of the most pervasive of these models has been Fishbein and Ajzen's theory of reasoned action and its extension, the theory of planned behaviour (e.g., Ajzen, 1985, 1988; Ajzen & Madden, 1986).

#### Theories of Reasoned Action and Planned Behaviour

The theory of reasoned action states that, to predict behavioural outcomes accurately, it is necessary to consider other variables in addition to attitudes. Specifically, the theory posits that the immediate determinant, or cause, of volitional behaviour is one's intention to engage in that behaviour. Intentions to perform the behaviour are, in turn, influenced by two conceptually independent components: an attitudinal component and a normative component (subjective norm) (Fishbein & Ajzen, 1975). Attitude, is conceptualised as an overall positive or negative evaluation of behaviour (Fishbein & Ajzen, 1975). The second determinant of intentions, subjective norm, is defined as the perception of general social pressure from important others to perform or not to perform a given behaviour (Fishbein & Ajzen, 1975). The effect of attitudes and subjective norms are proposed to be indirect.

Given that the theory of reasoned action was limited to the prediction of behaviours under volitional control, Ajzen (1985, 1988, 1991) extended the theory to enable prediction of behaviours that an individual may not be able to perform at will. This extension, the theory of planned behaviour, incorporated perceptions of control over performance of the behaviour as an additional predictor (Ajzen, 1988, 1991). This predictor, perceived behavioural control, is considered to influence behaviour directly and/or indirectly via intentions (Ajzen, 1991). A related concept, self-efficacy, or the extent to which performance of the behaviour is perceived by the individual to be easy or difficult, has also been used as a successful predictor of behavioural intentions (see Armitage, Conner, Loach & Willetts, 1999; Manstead & vanEeklen, 1998; Terry & O'Leary, 1995; White, Terry & Hogg, 1994). In light of the support for self-efficacy as a predictor of intentions, and its validity in the prediction of drug and alcohol behaviours (e.g., Petraitis, Flay & Miller, 1995), a measure of self-efficacy was used to represent the control construct in the current study.<sup>1</sup>

#### Support for the Theories of Reasoned Action and Planned Behaviour

The theories of reasoned action and planned behaviour have been extensively applied to the prediction of a variety of different health behaviours. These include smoking (e.g., Godin, Valois, LePage & Desharnais, 1992), condom use (e.g., Yzer, Siero & Buunk, 2001), health-screening attendance (e.g., Norman & Conner, 1996), and exercise (e.g., Hagger, Chatzisarantis, Biddle & Orbell, 2001; Norman & Smith, 1995). In the context of drinking behaviours, there is also some support for the two models (e.g., Budd & Spencer, 1984; Kilty, 1978; Schlegel, D'Avernas, Zanna, DeCourville & Manske, 1992; Trafimow, 1996). Although there has been little research explicitly examining the application of the theory of

planned behaviour to students' binge-drinking, a recent study of undergraduates at a Welsh university found the model accounted for 29% of the variance in the frequency of binge-drinking (Norman, Bennett & Lewis, 1998).

Although numerous studies have found support for the reasoned action and planned behaviour models across a range of different behavioural contexts, there is more support for some of the models' links than others. Support has been established for the proposed links between intentions and actual behaviour, and between attitudes and intentions. Researchers have provided less support, however, for the subjective norm-intention link. Studies using attitude and subjective norm to predict behavioural intentions have generally found that subjective norm has less predictive power than attitude for most behaviours, as indicated by a lower beta weight in multiple regression analysis. For example, in a review of 185 reasoned action/planned behaviour studies, Armitage and Conner (2001) reported that the average contribution of attitude in predicting behavioural intentions was .49, whereas the average subjective norm-intention correlation was .34. On this basis, researchers have argued that the subjective norm-intention relationship is the weakest link of the reasoned action/planned behaviour models (e.g., Terry & Hogg, 1996; White et al., 1994).

#### Role of Social Influence Variables on Behaviour

In response to the weak support for the role of subjective norm in the prediction of behavioural intentions, Fishbein and Ajzen (1975) contend that the relative importance of attitude and subjective norm as predictors of intentions will vary as a function of the specific population and behaviour under consideration. More recently, Ajzen (1991) has argued that the consistent lack of evidence linking norms to behavioural intentions supports the view that intentions are, in general, influenced primarily by personal factors such as attitude. An alternative explanation offered by Terry and colleagues (e.g., Terry & Hogg, 1996; Terry, Hogg & White, 1999; White et al., 1994) is that the lack of strong support for subjective norms in attitude-behaviour studies may be attributable to the fact that the role of norms in this context has not been clearly theorised and that subjective norm is an inadequate measure to capture the impact of social influence on behaviour. As such, it has been asserted that consideration of the effects of group membership on behaviour, as outlined by social identity/self-categorization theories, may provide a more comprehensive explanation of the role of social influence.

Social Identity Theory/Self-categorization Theory Perspective. Social identity theory (e.g., Hogg & Abrams, 1988; Tajfel & Turner, 1979; Turner, 1982) is a general theory of group processes and intergroup relations that distinguishes group phenomena from interpersonal phenomena. According to social identity researchers (e.g., Abrams & Hogg, 1990), an important component of the self-concept is derived from memberships in social groups and categories. When individuals define and evaluate themselves in terms of a self-inclusive social category, two processes come into play: (1) categorisation, which perceptually accentuates differences between the in-group and out-group, and similarities among self and in-group members on stereotypic dimensions, and (2) self-enhancement which seeks to favour the in-group over the out-group on relevant dimensions. This theory has also been extended to focus more specifically on the role of the categorisation process (self-categorization theory, see e.g., Turner, 1985; Turner, Hogg, Oakes, Reicher & Wetherell, 1987).

Thus, researchers adopting a social identity theory/self-categorization theory approach in this context propose that engaging in attitudinally consistent behaviours is dependent on perceptions of support for attitudes from the reference in-group. When there is normative support from a relevant group for attitudes towards a particular issue or behaviour, it is likely that an individual would behave more in accordance with those attitudes than an individual without in-group support (e.g., Terry & Hogg, 1996). Social identities are proposed to

influence behaviour through the mediating role of group norms in that individuals will be more likely to engage in a particular behaviour if it is in accordance with the norms of a behaviourally relevant group with whom they strongly identify (e.g., Schofield, Pattison, Hill & Borland, 2001; Terry & Hogg, 1996; Terry et al., 1999).

According to Terry and colleagues (e.g., Terry & Hogg, 1996; Terry et al., 1999), a social identity theory/self-categorization theory perspective on the role of social influence in the attitude-behaviour relationship differs significantly from that outlined in the reasoned action/planned behaviour models. Rather than collapsing across referents, with social pressure conceived as being additive across all referents and reference groups that participants define as important to them, as in the case of subjective norm, norms are conceived in a way so that they are intrinsically tied to contextually salient membership in specific social groups, and affect behaviour because the group is behaviourally relevant. Further, the subjective norm construct in the reasoned action/planned behaviour models does not account for the strength of identification with significant others or groups, whereas a social identity theory/self-categorization theory perspective asserts that the stronger one's group identification, the stronger the influence of reference group norms on intentions (Terry & Hogg, 1996). Therefore, from a social identity theory/self-categorization theory perspective, it is argued that subjective norm should have little impact in determining people's intentions, whereas the perception of the group norm, for strong identifiers, should predict behavioural intentions.

In empirical support for their proposition, Terry and Hogg (1996) found that the perceived norms of a behaviourally relevant reference group (friends and peers at University) predicted intentions to engage in regular exercise (study 1) and females' intentions to engage in sun-protective behaviours (study 2), but only for individuals who identified strongly with the group. Similar results were reported by Terry et al. (1999) in the prediction of recycling behaviour, whereby group norms predicted behavioural intentions to recycle a range of household products for strong identifiers, and by Åstrøm and Rise (2001), who reported that high group identification acted as a moderator between group norm and young adults' intentions to eat healthy food. These findings suggest that the role of norms in attitude-behaviour models becomes stronger under conditions in which people categorise themselves and identify with an in-group that defines membership in terms of specific behaviourally and attitudinally prescriptive norms (Terry & Hogg, 1996; Terry et al., 1999; Wellen, Hogg & Terry, 1998; White, Hogg & Terry, 2002).

### The Present Research

Another context where the role of the norms of a reference group and identity issues are central in determining behaviour is in the peer-influenced decision-making of students, such as the decision to engage in alcohol and drug-taking behaviours. University students' decisions to engage in binge-drinking occurs regularly in the context of their identity as a university student, with behavioural decisions often strongly tied to their membership of a student group. To test the proposal that social identity/self-categorization theories may help improve understanding of the role of norms in this context, the present study examines the application of the theory of planned behaviour, and includes a social identity theory/self-categorization theory perspective of norms, in the prediction of university students' binge-drinking.

In relation to the theory of planned behaviour, it is hypothesised that: (1) intentions to binge-drink will be predicted by attitude, self-efficacy, and subjective norm; (2) intentions to binge-drink will predict actual performance of the behaviour; and (3) self-efficacy will predict both behavioural intentions and actual behaviour. Based on a social identity theory/self-categorization theory approach to the role of norms in the theory of planned behaviour, and consistent with the findings of Terry and colleagues (e.g., Terry & Hogg,

1996; Terry et al., 1999), it is hypothesised that: (4) perceived norms of a behaviourally relevant reference group will predict intentions to binge-drink for those individuals who strongly identify with the reference group.

## Method

### Participants

A total of 289 first year undergraduate students enrolled in introductory psychology units at a large Australian university participated in the first data collection wave of the study. Most of the participants received course credit for completing the surveys. The sample comprised 231 (80%) females and 58 (20%) males. The mean age of participants was 26 years ( $SD = 9.66$ ; range = 18-59 years). Of the participants who completed the main questionnaire, 223 (77%) completed the follow-up questionnaire at wave 2 of the data collection. Participants who did and did not provide follow-up data did not differ on age or sex on any of the variables assessed at Time 1.

### Design

The study used a prospective design with two waves of data collection. The first wave of data collection assessed intentions, attitude, subjective norm, self-efficacy, group norm, and group identification in relation to binge-drinking. The second wave of data collection assessed participants' self-reported binge-drinking behaviour for the 2 weeks between data collection waves. Binge-drinking was defined as the consumption of five or more standard alcoholic beverages in a single session.<sup>2</sup> Participants were instructed at the commencement of the study on the definition of a standard alcoholic beverage with regard to low alcohol beer, regular beer, table wine, fortified wine, and spirits. Questionnaires also contained these definitions.

### Measures

Wave one – main questionnaire. The main questionnaire employed direct measures of the theory of planned behaviour constructs in relation to binge-drinking. Social identity theory/self-categorization theory variables, specifically group norm and group identification, were also examined. To reduce the effects of response bias, approximately half of the items for each measure were negatively worded. The scales were internally reliable (see Table 1).

Three items were used to assess the strength of intention to binge-drink. Responses were recorded on 7-point Likert scales. The three items used were: "I intend to drink five or more standard alcoholic beverages in a single session in the next two weeks"; 1 extremely unlikely to 7 extremely likely, "I" 1 do intend to 7 do not intend "to drink five or more standard alcoholic beverages in a single session in the next two weeks", and "Do you intend to drink five or more standard alcoholic beverages in a single session in the next two weeks?"; 1 definitely intend to to 7 definitely intend not to.

A direct measure of attitude was obtained by asking participants to indicate their attitude toward binge-drinking on five evaluative semantic differential scales. These scales were: unenjoyable/enjoyable, bad/good, favourable/unfavourable, unpleasant/pleasant, satisfying/unsatisfying.

Three items scored on 7-point Likert scales were used as the direct measure of subjective norm. The three items used were: "If I drink five or more standard alcoholic beverages in a single session in the next two weeks most people who are important to me would"; 1 approve to 7 disapprove, "Most people who are important to me think that my drinking five or more standard alcoholic beverages in a single session in the next two weeks would be": 1 undesirable to 7 desirable, and "Most others who are important to me think that I" 1 should to 7 should not "drink five or more standard alcoholic beverages in a single session in the next two weeks".

Two items were used to assess participant's self-efficacy in relation to binge-drinking. The two items used were: "For me to drink five or more standard alcoholic beverages in a

single session in the next two weeks would be"; 1 very difficult to 7 very easy, and "If I wanted to, it would be easy for me to drink five or more standard alcoholic beverages in a single session in the next two weeks"; 1 strongly agree to 7 strongly disagree.

In an elicitation study, participants rated the most appropriate reference group for their binge-drinking behaviour and the modal response, friends and peers at University, served as the behaviourally relevant reference group for the group norm and group identification measures used in the main questionnaire. Measurement of group norm was based on items used by Terry and Hogg (1996). Participants responded to four items assessing their perceptions of reference group norms for drinking five or more standard alcoholic beverages in a single session. The four items used were: "Think about your friends and peers at University. How much would they agree that drinking five or more standard alcoholic beverages in a single session in the next two weeks is a good thing to do?"; 1 completely to 7 not at all, "How many of your friends and peers at University would think that drinking five or more standard alcoholic beverages in a single session in the next two weeks is a good thing to do?"; 1 none to 7 all, "How many of your friends and peers at University would drink five or more standard alcoholic beverages in a single session in the next two weeks?"; 1 none to 7 all, and "Think about your friends and peers at University. What percentage of them do you think would drink five or more standard alcoholic beverages in a single session in the next two weeks?"; 1 0% to 7 100%.

Measurement of in-group identification was based on the Brown, Condor, Mathews, Wade and Williams (1986) scale used by Terry et al. (1999). Participants responded to four items designed to assess strength of identification with the reference group. These items were: "How much do you feel you identify with your friends and peers at University?"; 1 not very much to 7 very much, "With respect to your general attitudes and beliefs, how similar do you feel you are to your friends and peers at University?"; 1 very dissimilar to 7 very similar, "Think about who you are. How important is being a member of your group of friends and peers at University?"; 1 very important to 7 very unimportant, and "How much do you feel strong ties with your friends and peers at University?"; 1 very much to 7 not very much. Feelings of belongingness to the group were also assessed (e.g., "In general, how well do you feel you fit into your group of friends and peers at University?"; 1 not very well to 7 very well, and "How much do you see yourself belonging to your group of friends and peers at University?"; 1 not very much to 7 very much).

Wave two – follow-up questionnaire. At Time 2, a measure of reported behaviour was obtained. Respondents were asked to indicate whether they had consumed "five or more standard alcoholic beverages in a single session in the last 2 weeks". Participants who responded affirmatively were asked to provide further details (e.g., where, when and amount of alcohol consumed) to improve the reliability of the self-report data.

#### Procedure

First year undergraduate students enrolled in introductory psychology were invited to volunteer for the study. For the purpose of confidentiality and to match the two questionnaires, a unique code identifier was recorded on the questionnaires. All participants were advised that the University Counselling Service was available to offer support and assistance if necessary and a list of additional alcohol and drug agencies in the area was also distributed to participants.

## Results

### Data Analysis Overview

Two sets of hierarchical regression analyses were performed. The first examined the application of the theory of planned behaviour to the prediction of students' binge-drinking. In the second set of analyses, the efficacy of the revised theory of planned behaviour

(incorporating the extended normative component based on social identity/self-categorization theories) was tested.

#### Descriptive Analysis of Binge-drinking

Means, standard deviations, correlations and alpha coefficients of the variables used are reported in Table 1. The intercorrelation among predictors did not suggest interdependence. As expected, the theory of planned behaviour predictors were highly correlated with behavioural intentions, as were group norms and group identification. All of the variables under consideration were also significantly correlated with behaviour, with intentions emerging as the strongest correlate.

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#### The Theory of Planned Behaviour and Binge-drinking

Analysis predicting behavioural intentions and reported behaviour. A standard multiple regression was performed between intention as the dependent variable and attitude, subjective norm, and self-efficacy as independent variables. As shown in Table 2, the components of the theory of planned behaviour accounted for 69% (68% adjusted) of the variance in behavioural intentions and was significant at  $p < .001$  ( $F(3, 246) = 179.02$ ). All three variables contributed significantly, and approximately equally, to the prediction of intentions to binge-drink; attitude ( $\beta = .32$ ;  $p < .001$ ), subjective norm ( $\beta = .27$ ;  $p < .001$ ), and self-efficacy ( $\beta = .33$ ;  $p < .001$ ). As proposed (Hypothesis 1), participants who had a more positive attitude toward binge-drinking, perceived more pressure from significant others to binge-drink, and perceived that performing the behaviour would be easy, were more likely to intend to binge-drink.

Thirty eight percent ( $n = 83$ ) of participants reported that they engaged in binge-drinking over the two weeks since completing the Time 1 questionnaire. A standard multiple regression was performed between binge-drinking behaviour as the dependent variable and intention and self-efficacy as the independent variables. Attitude and subjective norm were entered into a second step to examine whether they accounted for additional variance in the prediction of behaviour. As shown in Table 2, the combination of intention and self-efficacy accounted for 51% (50% adjusted) of the variance in self-reported binge-drinking behaviour and was significant at  $p < .001$  ( $F(2, 193) = 99.62$ ). Intention ( $\beta = .47$ ;  $p < .001$ ) contributed significantly to the prediction of binge-drinking behaviour, indicating that participants who intended to binge-drink did perform the behaviour. This result provides support for Hypothesis 2, which predicted that intentions to binge-drink would predict performance of the behaviour. Contrary to predictions (Hypothesis 3), self-efficacy did not significantly predict binge-drinking behaviour ( $\beta = .14$ ;  $ns$ ). As expected, entry of attitude and subjective norm at step two did not significantly improve the prediction of binge-drinking ( $\Delta R^2 = .01$ ;  $\Delta F(2, 191) = 2.31$ ,  $ns$ ).<sup>3</sup>

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#### Social Identity Theory/Self-categorization Theory Approach

A hierarchical regression tested Hypothesis 4, which proposed that the perceived norms of a behaviourally relevant reference group would predict intentions to binge-drink, especially for people who strongly identified with the reference group. Consistent with previous studies conducted by Terry and colleagues (e.g., Terry & Hogg, 1996; Terry et al., 1999), a multiplicative term between group identification and group norm was computed. The interaction term was entered on the third step of the analysis after controlling for the component main effects of the theory of planned behaviour (attitude, subjective norm and



self-efficacy) (step 1), and social identity theory (group norm and group identification) (step 2). Centred variables, calculated as deviations from the mean, were used to ensure that multicollinearity between the predictors and interaction terms did not distort the results of the analysis (Aiken & West, 1991).

As shown in Table 3, step one of the regression analysis accounted for 69% of the variance in behavioural intentions, and was significant at  $p < .001$  ( $F(3, 239) = 176.59$ ). As in the standard planned behaviour analyses, attitude, subjective norm and self-efficacy significantly predicted intentions to binge-drink. Unexpectedly, the inclusion of group norm also significantly predicted intentions at step two ( $\beta = .20$ ;  $p < .001$ ). The  $R^2$  change for step two was significant ( $\Delta R^2 = .01$ ;  $\Delta F(2, 237) = 5.37$ ,  $p < .01$ ). These results indicate that participants who had a more positive attitude toward binge-drinking, perceived more pressure from significant others to binge-drink, perceived that performing the behaviour would be easy, and perceived normative support from their friends and peers at university to engage in binge-drinking, were more likely to intend to binge-drink.

Entry of the group identification by group norm interaction into the regression analysis at step three explained a significant increment of variance in intentions ( $\Delta R^2 = .03$ ;  $\Delta F(1, 236) = 21.75$ ,  $p < .001$ ). In accordance with Hypothesis 4, group norms significantly predicted intentions, especially for participants who identified strongly with the reference group (see Figure 1). Simple slope analysis (analogous to performing simple main effects in ANOVA designs; see Aiken & West, 1991) confirmed this pattern of results. The relationship between group norm and intentions was significant at one SD above the mean on the measure of group identification ( $\beta = .38$ ;  $t = 5.51$ ,  $p < .001$ ), but not at one SD below the mean ( $\beta = .01$ ;  $t = .24$ , ns).

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 Insert Table 3 about here  
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#### Discussion

The aim of the current study was to test a social identity theory/self-categorization theory approach to the role of norms in university students' binge-drinking, using the theory of planned behaviour as a framework. The present study confirmed basic findings of research testing the utility of the theories of reasoned action/planned behaviour. Attitude, subjective norm and self-efficacy were predictive of binge-drinking intentions. Also consistent with the theory of planned behaviour, behavioural intentions predicted self-reported binge-drinking behaviour. The second set of analyses examined a reconceptualisation of norms from a social identity theory/self-categorization theory perspective. As predicted, the effect of group norm on students' intention to binge-drink was moderated by group identification, whereby the effects of norms were more important for individuals who strongly identified with the reference group.

Prior to examining the social identity theory/self-categorization theory perspective, the current study tested the basic premises of the theory of planned behaviour. Support was found for the direct measures of the model, with attitude, subjective norm and self-efficacy predicting 69% of the variance in behavioural intentions. Although numerous studies have highlighted the failure of subjective norm to predict behavioural intentions (see Armitage & Conner, 2001), it seems for behaviours like binge-drinking, perceived pressure from a range of important others is a strong and independent predictor of intentions to engage in the behaviour. Also consistent with expectations, behavioural intentions were found to be predictive of binge-drinking, indicating that participants who intended to binge-drink did

binge-drink over the two week period. However, contrary to predictions, self-efficacy did not significantly predict binge-drinking behaviour. The lack of support for self-efficacy as a direct predictor of binge-drinking is inconsistent with the theory of planned behaviour which posits a direct link between control factors and behaviour (e.g., Ajzen, 1985). The use of self-efficacy rather than perceived behavioural control may explain the mediation of the control factor in the present research; research assessing self-efficacy rather than perceived behavioural control has found that self-efficacy influences behaviour only indirectly, through intentions (see Terry & O'Leary, 1995).

The findings of the current study concur with the theoretical underpinnings of the theory of planned behaviour (Ajzen, 1991). This support is largely consistent with previous research examining the application of the theory to general behaviours, health behaviours, and alcohol consumption (e.g., Godin et al., 1992; Norman et al., 1998; Norman & Conner, 1996; Schlegel et al., 1992; Trafimow, 1996). Given that all the direct measures of the theory of planned behaviour were highly predictive of binge-drinking intentions and behaviour, these findings provide useful information for interventions designed to curb binge-drinking in this population (see Hardeman, Johnston, Johnston, Bonetti, Wareham, & Kimmonth, 2002). The results of the present study indicate that targeting students' personal attitudes, their perceptions of pressure from others to drink and elements of internal motivation and control may be useful strategies to reduce the incidence of excessive alcohol consumption.

The second set of analyses in the current study extended the normative component of the theories of reasoned action/planned behaviour to include a social identity theory/self-categorization theory perspective. Given the primarily social nature of student drinking, it was proposed that the theory of planned behaviour should be revised to include measurement of the extent to which binge-drinking is considered to be normatively appropriate to a behaviourally specific reference group. An unexpected finding was a main effect for group norms, suggesting that this factor was a significant independent predictor of behavioural intentions; those participants who perceived normative support from their friends and peers at university to engage in binge-drinking were more likely to intend to binge-drink. This result concurs with the findings for subjective norm in that there seems to be a range of referents who can influence an individual's intentions for drinking behaviours (e.g., Biddle, Bank & Marlin, 1980; Harford & Grant, 1987). Consistent with expectations, however, the effects of group norms on behavioural intentions were dependent on the level of identification with the reference group, such that the effects of group norms on binge-drinking intentions were stronger for participants who strongly identified with the in-group.

The results for group norms and identification add to the growing body of research utilising a social identity theory/self-categorization theory perspective to better understand the role of norms in attitude-behaviour models such as the theory of reasoned action/planned behaviour (e.g., Terry & Hogg, 1996; Terry et al., 1999; White et al., 1994). The current study indicates that a social identity theory/self-categorization theory conceptualisation of norms is also predictive of binge-drinking intentions, suggesting that engaging in attitudinally consistent behaviour is dependent on perceptions of support from a behaviourally relevant reference group. As such, interventions designed to reduce students' binge-drinking should aim to target the impact of groups that link strongly to the enactment of excessive alcohol consumption; in this instance, friends and peers at university. University-based campaigns could try to weaken the link between the identity of university friendship groups and excessive drinking, and, instead, strengthen the link between university friendship groups and the execution of more healthy behaviours such as sporting and other recreational pursuits. The findings of the current study suggest also that it is the students who strongly identify with their friends and peers at university who are more likely to intend to engage in binge-drinking given a supportive in-group norm. Thus, interventions encouraging students' identification

with a range of other referent groups who engage in more socially desirable behaviours may prove beneficial.

The present study has several strengths. It provides a greater understanding of the role of social influence variables in attitude-behaviour relations by contributing to the research findings for a social identity theory/self-categorization theory approach to understanding the role of norms in the theory of planned behaviour (e.g., Terry & Hogg, 1996; Terry et al., 1999; White et al., 1994). The study also contributes to the research evidence for the application of the theory of planned behaviour to binge-drinking (e.g., Norman et al., 1998). There are, however, a few limitations of the present study which should be noted. Firstly, the measure of binge-drinking behaviour was based on self-report data, which may bias results through participants responding in a socially desirable manner. Additional items were included, however, to enhance the reliability of the self-report data collected. Secondly, both behavioural intentions and the predictors of intentions were measured simultaneously, which may have influenced the reporting of intentions. This potential limitation could be corrected in future research by using a 3-wave design.

The findings of the present study highlight several areas for future research. In relation to the theories of reasoned action/planned behaviour, the role of subjective norm in predicting behavioural intentions should be further examined in relation to binge-drinking and other forms of drinking behaviour to determine whether the significance of subjective norm is specific to the current study, and/or the specific drinking behaviour examined. The current research also reinforces the need for the control aspect of the theory of planned behaviour to be considered as a multidimensional concept, with future research considering both elements of control (see Conner & Armitage, 1998).

The social identity theory/self-categorization theory component of the present research also suggests avenues for future investigation. As a relatively new development in the theory of planned behaviour research, the application of social identity theory/self-categorization theory variables should be investigated using a wide range of populations and behaviours (particularly those that vary in the extent to which they are group-linked) than considered in the present research. Studies incorporating other important aspects of social identity theory/self-categorization theory, such as the salience of the in-group in the context that decisions are made, and the prototypicality of the in-group norms for the population under investigation, would be beneficial in clarifying further the role of group norms in the theory of planned behaviour. It would also be useful to compare a social identity theory/self-categorization theory approach with other explanations for the poor predictive value of subjective norm in the theory of planned behaviour (e.g., a direct comparison of a social identity theory/self-categorization theory perspective with an individual differences approach; see Trafimow & Finlay, 1996).

### Summary

The aim of the current study was to examine the application of a social identity theory/self-categorization theory approach to students' binge-drinking, using the theory of planned behaviour as a framework. The combination of attitude, subjective norm and self-efficacy strongly predicted intentions to binge-drink, providing support for the theory of planned behaviour. Support was found also for a social identity theory/self-categorization theory approach to attitude-behaviour relations. The norms of a behaviourally relevant reference group were found to be a significant predictor of intentions to binge-drink, especially for individual's who strongly identified with the group. These results have important social relevance for educators and may provide a focus for advertising campaigns designed to encourage behaviour change. By identifying relevant social influence variables, and establishing a link between the norms of behaviourally relevant reference groups and

individual group members' behaviour, the performance of socially desirable behaviours, such as safe alcohol consumption, can be encouraged.

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## Footnotes

<sup>1</sup>There is much debate about the distinction between self-efficacy and perceived behavioural control (see Conner & Armitage, 1998). As there is much support for the predictive validity of self-efficacy in the context of drug and alcohol behaviours, this measure was utilised in the present study.

<sup>2</sup>The definition of binge-drinking is problematic, and there are no Australian guidelines on this issue. Some authors (e.g., Weschler, Davenport, Dowdall, Moeykens & Castillo, 1994) propose a dual definition of five standard drinks for men and four standard drinks for women. However, there is evidence to suggest that a gender-specific definition of binge-drinking is as problematic as a single definition (e.g., de Crespigny, Vincent & Ask, 1999; Ford, 2001; Smith, Lindsay & Arosentha, 1999). Therefore, the current study adopted the single definition used in many surveys (e.g., National College Health Risk Behavior Survey, National Household Survey on Drug Abuse, "Monitoring the Future" Survey) and studies (e.g., Haemmerlie, Montgomery & Sheri, 1999; Odo, McQuiller & Stretesky, 1999; Turrisi, 1999) examining binge-drinking by students. The data was examined for sex differences, and none were found on the predictors or dependent variables. As a result, the analyses for the combined sample are presented.

<sup>3</sup>The results of logistic regression analyses demonstrated a similar pattern of results to the standard regression analyses.

Table 1  
Descriptive Analysis of Binge-drinking: Means, Standard Deviations, Bivariate Correlations and Alpha Coefficients

Predictor	<u>M</u>	<u>SD</u>	1	2	3	4	5	6	7
1. Intention	3.03	2.15	(.94)						
2. Attitude	3.82	1.93	.75***	(.94)					
3. Subjective norm	3.24	1.68	.72***	.69***	(.89)				
4. Self-efficacy	4.29	2.08	.74***	.72***	.66***	(.75)			
5. Group norm	3.99	1.51	.60***	.56***	.62***	.55***	(.88)		
6. Group identification	3.97	1.31	.62***	.81***	.50***	.67***	.41***	(.71)	
7. Binge-drinking	0.38	0.49	.69***	.58***	.58***	.59***	.46***	.50***	-

\*\*\*  $p < .001$

Note. Mean scores in the present study are based on a 7-point scale (1 to 7) on which a 4 indicates neutrality, with the exception of reported behaviour (scored as a dichotomy).

Table 2  
 Standard Multiple Regression Analyses Predicting Behavioural Intention and Reported  
Binge-drinking Behaviour

Step	Predictor	$R^2$	$\Delta R^2$	$B$	$\beta$
Prediction of intention					
1.	Attitude	.69***	.69***	.36	.32***
	Subjective norm			.36	.27***
	Self-efficacy			.35	.33***
Prediction of behaviour					
1.	Intention	.51***	.51***	.11	.47***
	Self-efficacy			.03	.14
2.	Attitude	.52***	.01	.01	.03
	Subjective norm			.04	.15

\*\*\*  $p < .001$

Table 3  
 Hierarchical Regression Analyses Predicting Behavioural Intention: Interactive Effects  
 Involving Group Identification

Step	Predictor	$R^2$	$\Delta R^2$	$B$	$\beta$
1.	Attitude	.69***	.69***	.31	.28***
	Subjective norm			.27	.21***
	Self-efficacy			.28	.27***
2.	Group norm	.70***	.01**	.29	.20***
	Group identification			.11	.06
3.	Group norm x group identification	.73***	.03***	.21	.17***

\*\*  $p < .01$ , \*\*\*  $p < .001$

Note. Beta coefficients for the main effects computed after the strength of identification x group norm interaction was entered into the equation.

Figure Caption

Figure 1. Interaction between group identification and group norm on intention to binge-drink.

