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## Young adults' willingness and intentions to use amphetamines: An application of the theory of reasoned action.

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### Abstract

A questionnaire study of 79 young Australian university students' attitudes and norms for amphetamine use was conducted to test an alternative measure to intention in the theory of reasoned action (TRA). The study compared the usefulness of Gibbons and colleagues' concept of behavioural willingness which, it is argued, captures a more reactive and social decision to perform a behaviour than behavioural intention, viewed as more deliberative in nature. Participants completed a questionnaire assessing their attitudes, subjective norms, intention and willingness to engage in amphetamine use in the following 2 weeks. The results provided support for the TRA with attitude and subjective norm significantly predicting intention. However, attitude and subjective norm accounted for a greater proportion of variance in the prediction of behavioural willingness. Overall, the findings provide some support for the notion that behavioural willingness is a more effective criterion than behavioural intention for tapping into the determinants of potentially less rational and more risky behaviours such as young adults' illegal drug use.

**Keywords:** *Theory of reasoned action; behavioural willingness; social; illegal drug use*

The use of recreational drugs, especially illegal drugs such as amphetamines and ecstasy, has been a concern worldwide for many years (e.g., Cook, Lounsbury, & Fontenelle, 1980). A comparison of the United States National Household surveys on Drug Abuse and the Australian National Drug Strategy Household Surveys in the years 1995 and 1998 showed that, while there was no significant increase in illicit drug use in the United States, there was a significant increase in Australia (Maxwell, 2001).

Around 8.9% of the Australian population have used amphetamines at some point (Australian

Institute of Health and Welfare, 2002). In 1998, amphetamines were the most commonly injected drug that people had used in the last 12 months and the most common drug that people first injected (Australian Institute of Health and Welfare, 1999). Another study in Australia reported that 11% of high school students reported having had some experience with amphetamines by the age of 17 years and that around 7% of high school students aged 17 years reported having used ecstasy (White & Hayman, 2004). While much of the research to date regarding perceptions about drug use has used adolescent school students as the population (Schmid, 1998), other research indicates that first time users are, on average, over 21 years of age (Australian Institute of Health and Welfare, 1999).

Amphetamine and ecstasy use are associated with various health risks: additives in the drugs can cause collapsed veins, tetanus, abscesses, and damage to the lungs, liver and brain. In greater quantities and with regular use, possible effects include: malnutrition, psychosis, less resistance to infections, becoming violent, brain damage and, when using needles, an increased risk of contacting hepatitis and Human Immunodeficiency Virus (Australian Drug Foundation, 2001).

One way to reduce the cost of drug use is to lower the abusive use of illegal drugs (Resnicow, Smith, Harrison, & Drucker, 1999). To design more effective educational programmes to reduce the incidence of drug use, it is important to understand the determinants (e.g., knowledge, specific beliefs) of young people's decisions to engage in drug use. One strategy designed to reduce drug use involved campaigns that were aimed at increasing people's knowledge about the risks of drug use (Munro, 1998). Many evaluations of drug education programmes have found no evidence of either a change in attitude to drugs or a reduction in the use of drugs despite increasing the knowledge about the risks involved (e.g., Colman, 1993; Gorman, 1997).

The lack of consistency between knowledge and beliefs and associated behaviour is not confined to the drug use domain and is a broader issue examined by

social psychologists (e.g., Fishbein & Ajzen, 1975). To test the relationship between attitudes and behaviour more explicitly, expectancy-value models of the behaviour-attitude relationship, such as the theory of reasoned action (Ajzen & Fishbein, 1980) and the theory of planned behaviour (Ajzen, 1988), were developed to better predict behaviour and explain the decision-making process behind it.

### **The Theory of Reasoned Action and Theory of Planned Behaviour**

The theory of reasoned action (e.g., Fishbein & Ajzen, 1975; Ajzen & Fishbein, 1980) is an often-employed model of attitude-behaviour relations used in the field of health psychology. The theory of reasoned action is based upon the assumption that humans are rational in their decision-making and use the information available to them. Fishbein and Ajzen propose that intention (to perform a behaviour) is the immediate determinate of actual behaviour. Intention is defined as the conscious plan to exercise effort to perform the behaviour. The two main determinants of intention are attitudes and subjective norm. Attitudes are defined as a person's overall positive or negative evaluation of a particular behaviour whereas subjective norm is conceptualised as the social pressure from significant others (e.g., friends/family) to perform or not perform a particular behaviour. Thus, subjective norm reflect social influences while attitude is more personal in nature. According to the theory of reasoned action, attitudes and subjective norm have an indirect effect on behaviour through their effect on behavioural intention and the relative weights are said to vary for different behaviours and/or populations.

While the theory of reasoned action assumes that behaviours are under the volitional control of the person performing it, there are many behaviours where a person's level of control over performing the behaviour varies. Given the range of non-volitional behaviours that exist, Ajzen (1988) formulated the theory of planned behaviour. To account for non-volitional behaviours, a measure of perceived behavioural control was added to the theory of reasoned action predictors as another individual determinant of intention. Within the theory of planned behaviour, perceived behavioural control is conceptualised as the perceived amount of control that a person has over performing a particular behaviour.

Widespread empirical support has been found for the usefulness for the theory of reasoned action and the theory of planned behaviour for a wide range of behaviours (see Armitage & Conner, 2001, for a meta-analytic review), including health behaviours. A review of the theory of reasoned action and the theory of planned behaviour and their application to health-related behaviours found that, while overall the

model explained intention well (with an average  $R^2$  of .41), the effectiveness of the model varied between different types of behaviours (Godin & Kok, 1996).

There is continued evidence to suggest that the theory of reasoned action and theory of planned behaviour variables are useful in predicting behaviour regarding illegal drugs (e.g., Armitage, Conner, Loach, & Willetts, 1999; Conner & McMillan, 1999; Conner, Sherlock, & Orbell, 1998; Cook et al., 1980; McMillan & Conner, 2003; Umeh & Patel, 2004). Conner and McMillan studied intention to use cannabis in a student population and found that the theory of planned behaviour provided good predictions of both intention and behaviour. Attitudes, norms, and perceived behavioural control were all associated significantly with intention. A study using the theory of planned behaviour that examined attitudes and ecstasy use in the United Kingdom found that attitude was the single best predictor of intention so that participants were more likely to intend to use ecstasy if they believed that heavy use would lead to positive outcomes (Conner et al., 1998). Subjective norm and perceived behavioural control were additional significant predictors of intention. The theory of planned behaviour variables also emerged as significant predictors of the frequency of the intentions and use of illegal drugs (including LSD, amphetamines, cannabis and ecstasy) in a study among students (McMillan & Conner, 2003).

### **Intention versus willingness**

Despite the support for rational decision making models of behaviour such as the theory of reasoned action and the theory of planned behaviour in predicting drug-use behaviours, many researchers have levelled criticism at a rational approach to illegal and risky behaviours, like drug use, and have suggested that decision-making in these circumstances are likely to be more spontaneous or even automatic (e.g., Gibbons, Gerrard, Blanton, & Russell, 1998; Schmid, 1998; van der Pligt, 1998). To tap into less planned forms of decision-making, particularly in relation to risky behaviours, Gibbons et al. developed the concept of behavioural willingness as part of their prototype/willingness model.

The prototype/willingness model shares some of the components of the theory of reasoned action (i.e., attitude and subjective norm) and suggests similar underlying processes. In the prototype/willingness model, attitude, subjective norm, and prototypes are described as having an indirect effect on behaviour via their effect on behavioural willingness. According to the model, as a person's attitude towards a behaviour becomes more positive and the more they perceive that significant others would want them to perform the behaviour, their willingness to perform the behaviour will increase. Behavioural

willingness, although related to behavioural intention, is differentiated by its reactive, as opposed to deliberate, nature. In addition, the model proposes that people have a prototype of the sorts of people who engage in risky behaviour and that their attitude towards performing the behaviour is directly related to their prototype (Gibbons, Gerrard, & McCoy, 1995). It should be noted that the prototype/willingness model does not incorporate a control construct (as in Ajzen's (1991) theory of planned behaviour).

The prototype/willingness model takes into account the often reactive and social nature of engaging in health-risk behaviours, such as using drugs and, accordingly, behavioural willingness is assessed by asking participants how they *would* react in a social situation in regards to a risky behaviour (see Gibbons et al., 1998). Gibbons et al. argue this is a different concept to behavioural intention, which is more deliberative in nature. Gibbons et al. tested their prototype/willingness model in relation to predicting college students' pregnancy-risk behaviour. Structural equation modeling indicated that, while behavioural expectation (a similar concept to intention) and behavioural willingness were related concepts, behavioural willingness did explain an additional amount of the variance in behaviour over and above that of behavioural intention. The predictor variables of attitude, subjective norm and prototype accounted for 40% of the variance in behavioural willingness, and were all significant predictors of willingness. In addition, behavioural willingness was found to be a significant and independent predictor of self-reported behaviour. Other tests of the model have reported similar findings demonstrating the utility of the willingness concept (Gibbons, Gerrard, Ouellette, & Burzette, 2000; Gibbons, Gerrard, Vande Lune, Wills, Brody, & Conger, 2004; Thornton, Gibbons, & Gerard, 2002).

Thus, the present study aims to examine whether attitudes and subjective norm are successful in predicting behavioural willingness and the usefulness of the concept of behavioural willingness in relation to a risky behaviour such as amphetamine use. A time frame (i.e., "in the next 2 weeks") was added to the measurement of behavioural willingness in the present study in order to be consistent with the measures of the constructs in the theory of reasoned action. In addition, it is possible that, by incorporating a time frame, the reliability of the measures may be increased as some people would be aware of definite barriers to behavioural performance given a set time period, even though they may be generally willing to perform the behaviour. In a similar vein to the TPB item time-frame chosen in other amphetamine use studies (e.g., 1 week; see Armitage et al., 1999), a 2 week time frame was

chosen in the present study to enable a reasonable time frame in which participants may be exposed to or seek out amphetamine use.

To examine the effectiveness of behavioural willingness as an outcome measure of the standard theory of reasoned action components, the present study also compared behavioural willingness with behavioural intention. Thus, in the present study, the impact of both intentions and willingness as behavioural criterions is considered.

## The present study

The present study had two aims. The first aim was to assess the efficacy of the theory of reasoned action in explaining behavioural intention to use amphetamines, such as speed and/or ecstasy in a sample of Australian university students. The second aim was to examine how the predictor components of the theory of reasoned action (attitude and subjective norm) predict behavioural willingness as a potentially useful measure of less rational forms of behaviour. For the theory of reasoned action, it was expected that: (1) attitude and subjective norm would predict behavioural intention. Similarly, in relation to behavioural willingness, it was expected that (2) attitude and subjective norm would predict significantly people's willingness to engage in amphetamine use.

## Method

### Participants

The target population was 79 undergraduate university students (19 males and 60 females) enrolled in introductory psychology units at a large Australian university. The mean age of participants was 19.38 years ( $SD = 2.03$ ; range 17 to 25 years). Only 2 participants reported to having used amphetamines in the previous month. For their involvement in the study, participants received course credit. As the survey was part of a larger study examining illegal drug taking risks, some of the constructs were assessed using only 1 or 2 items due to space constraints (detailed below).

### Attitude

A direct measure of attitude was obtained by asking the participants to indicate their attitude toward using amphetamines on a series of four 7-point semantic differential scales (e.g., *unpleasant – pleasant, good – bad, favourable – unfavourable*). Responses on the negatively-worded pairs were reverse-scored and the four items were averaged to create an attitude scale. The scale was reliable with a Cronbach's (1951) alpha coefficient of .87.

### Subjective norm

A direct measure of perceived pressure from people important to them to use amphetamines in the next 2 weeks was assessed using one item measured on a 7-point Likert scale ranging from 1 *strongly disagree* to 7 *strongly agree*.

### Intention

Two items were used to assess the strength of intention to use amphetamines. Items were scored on a 7-point Likert scale (e.g., “I intend to use amphetamines, such as speed and/or ecstasy, in the next 2 weeks”; 1 *strongly disagree* to 7 *strongly agree*). The two items were significantly inter-correlated ( $r = .91, p < .001$ ) and were averaged to obtain the intention scale.

### Behavioural willingness

Assessment of behavioural willingness was based on items used by Gibbons et al. (1998), with a time frame added. Participants were asked to “imagine that, in the next 2 weeks you were with some friends and one of them offered you amphetamines, such as speed and/or ecstasy”. The participants were then asked how willing they would be, under this circumstance, to: “Take it and use it,” “Leave the situation,” and “Tell them ‘no thanks,’” with each response using a 7-point Likert scale ranging from 1 *not at all likely* to 7 *extremely likely*. Responses to the negatively worded items were reverse-scored. The three items were then averaged to create the willingness scale, which was reliable with an alpha coefficient of .70.

## Results

### Data analysis overview

Two sets of multiple regression analyses were performed. The first analysis tested the theory of reasoned action and the prediction of intention to use amphetamines. The second tested the efficacy of the theory of reasoned action predictors (attitudes and subjective norm) in predicting behavioural willingness to use amphetamines. Analyses showed there were no significant main effects for sex on either behavioural intention or behavioural willingness. Therefore, analyses were performed using the data for both males and females.

### Descriptive analysis of amphetamine use

The means, standard deviations, bivariate correlations and alpha coefficients of the variables used are reported in Table 1. As hypothesised, the theory of reasoned action predictors were highly correlated with both behavioural intention and behavioural willingness. Both attitude and subjective norm were significantly correlated with behavioural intention and behavioural willingness. In both cases, attitude emerged as the strongest correlate.

Table 1: Descriptive analysis of amphetamine use: means, standard deviations, bivariate correlations and alpha coefficients.

	<i>M</i>	<i>SD</i>	Intention	Behavioural willingness	Attitude
Intention	1.24	.74	(.91) <sup>b</sup>		
Behavioural willingness	2.52	1.35	.46***	(.70)	
Attitude	1.65	1.09	.52***	.56***	(.87)
Subjective norm <sup>a</sup>	1.38	.92	.35**	.50***	.29**

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

a: Single item scale – Cronbach’s alpha not computed

b: Two item scale – Pearson’s correlation computed

### Analyses predicting behavioural intention

Scores for attitude and subjective norm were used to predict behavioural intention using multiple regression analysis. As shown in Table 2, the components of the theory of reasoned action accounted for a significant 31% (30% adjusted) of the variance of behavioural intention to use amphetamines ( $F(2, 75) = 17.15, p < .001$ ).

Table 2: Standard multiple regression analyses predicting behavioural intention and behavioural willingness.

Variable	<i>B</i>	<i>SE B</i>	$\beta$	<i>R</i> <sup>2</sup>
Intention				
Attitude	.31	.07	.46***	.31***
Subjective norm	.18	.08	.22*	
Behavioural willingness				
Attitude	.56	.11	.45***	.44***
Subjective norm	.55	.13	.38***	

\* $p < .05$ ; \*\*\* $p < .001$

Attitude ( $\beta = .46; p < .001$ ) and subjective norm ( $\beta = .22; p < .05$ ) each contributed significantly to the prediction of intention, with attitude emerging as the more significant contributor. These results indicated that participants who had a more positive attitude and perceived more pressure from significant others to use amphetamines were more likely to intend to use amphetamines. The results provided support for Hypothesis 1, which stated that attitude and subjective norm would predict intention to perform the behaviour.

### Analyses predicting behavioural willingness

A standard multiple regression was performed with attitude and subjective norm as the independent variables and behavioural intention as the dependent variable. As shown in Table 2, the components of the theory of reasoned action accounted for a significant 44% (43% adjusted) of the variance in behavioural willingness to use amphetamines, if offered by a friend ( $F(2, 75) = 29.58, p < .001$ ).

Attitude ( $\beta = .45, p < .001$ ) and subjective norm ( $\beta = .38, p < .001$ ) were significant independent predictors of the variance in behavioural willingness. These results indicate that those people who had positive attitudes towards amphetamines use, and perceived that significant others would want them to use amphetamines, would be more willing to use amphetamines were a friend to offer them.

### Discussion

The purpose of the study was to assess the efficacy of the theory of reasoned action predictors in explaining behavioural intention and behavioural willingness in relation to amphetamine use. The first aim of the study was to test the theory of reasoned action and its application to behavioural intention to use amphetamines. The results supported the theory of reasoned action, with the components accounting for a significant, proportion of the variance in intention to use amphetamines. The second aim was to examine the components of the theory of reasoned action in predicting behavioural willingness to use amphetamines. The results showed support for the components of the theory of reasoned action in predicting behavioural willingness. The theory of reasoned action determinants (attitude and subjective norm) accounted for a larger amount of the variance in behavioural willingness than behavioural intention, with a greater variability in participants' responses for willingness than intention.

The results supported the first hypothesis that attitude and subjective norm would predict intention to use amphetamines, such as speed and/or ecstasy. The standard model accounted for 31% of the variance in behavioural intention. The results showed that attitude was the strongest predictor of behavioural intention, twice the impact of subjective norm, which also emerged as a significant predictor. The results generally reflect the findings of previous research that has found the theory of reasoned action to be successful in predicting behavioural intention. However, the level of variance accounted for was lower in relation to most theory of reasoned action/theory of planned behaviour studies in the health domain, which, on average, account for over 40% of variance explained (for a review, see Godin & Kok, 1996). It is likely that there was little variability in behavioural intention as many people in the sample had strong negative attitudes towards amphetamine

use and did not intend to use amphetamines in the 2-week period.

The second aim of the study was to examine the efficacy of attitude and subjective norm in predicting the variance in behavioural willingness. Hypothesis 2 stated that the predictor variables of the theory of reasoned action (attitude and subjective norm) would explain a significant proportion of the variance in behavioural willingness. There was support for the hypothesis, with attitude and subjective norm both emerging as strong and significant independent predictors. These findings support these links of the prototype/willingness model (Gibbons et al., 1998).

It should be noted that the mean for behavioural willingness ( $M = 2.52, SD = 1.35$ ) was significantly higher than that for behavioural intention ( $M = 1.24, SD = .74; t(78) = 9.43, p < .001$ ). This result reflects the previous findings of Gibbons and colleagues (e.g., Gibbons et al., 1998, 2000). It is reasonable to assume that people's willingness to engage in drug-taking behaviour, given the right social opportunity, is greater than their (planned) intention to engage in drug-taking behaviour. This finding provides further support for the suggestion that behavioural willingness may comprise a particularly useful way of eliciting people's responses to risky behaviours.

The findings of the present study suggest that, for risky behaviours, intention may be unable to provide an accurate measurement of potential behaviour. It may be that decisions to perform risky behaviours, such as using illicit drugs, are not intentional or rational and may be more heavily context dependent, especially for young people (Gibbons et al., 1998). Gibbons et al. argue that young people are not likely to predict when they will encounter the circumstances conducive to risk behaviours and so their decisions will be more reactive than planned. Also, due to the likelihood of these behaviours rarely taking place when young people are alone, the social context takes on a larger importance in their willingness to perform the behaviour. Placing the performance of behaviour within a social context appears beneficial in tapping into people's behavioural tendencies (see Panagopoulos & Ricciardelli, 2005, for a discussion of contextual factors in decision making among recreational ecstasy users).

The current study did not test the full prototype-willingness model, given the central aim of the present research to examine notions of behavioural willingness compared to behavioural intention. It should be noted that the original measure of behavioural willingness used in Gibbons et al. (1998) was altered to include a time frame (e.g., "in 2 weeks") so as to be more consistent with the measures of other components in the theory of reasoned action and to potentially increase the reliability of the

measure. Future studies could confirm the usefulness of this inclusion. In addition, although not incorporated in Gibbons and colleagues' model, future studies could include a measure of perceived behavioural control to examine the extent to which high volitional control minimises the utility of the behavioural willingness measures. Inclusion of an assessment of perceived risks for behaviours such as illegal drug-taking and its associated impact on intentions and drug use may also be beneficial.

The fact that predictor components of the theory of reasoned action (attitude and subjective norm) explained a larger amount of the variance for behavioural willingness than for behavioural intention may be due to the effect of social response bias in the measurement of intention. In Gibbons and colleagues' (e.g., Gibbons et al., 1998) research, the question that elicits behavioural willingness construct is hypothetical in nature, and by asking participants to "imagine they are in a situation" implies that there is not the necessary assumption that they would be in the situation. The nature of the question also shifts the emphasis away from personal responsibility to more social and situational influences, a consideration especially important given the social nature of decision-making for drug related behaviours (see Gibbons et al.).

In an applied sense, the current findings suggest that professionals should emphasise a perceived readiness or willingness, rather than specific planning, to undertake illegal drug use in order to gain an accurate depiction of young people's potential behaviours in this domain. While personal attitudes and beliefs are important as a predictor of intentions and willingness, the role of the social context also emerges as important when considering potential situations for use. Thus, it is recommended that intervention programmes target attitudes, addressing the perceived positive benefits of amphetamine use, as well as the perceived risks, in order to discourage accepting amphetamines from friends. It is also recommended that programmes particularly target the influence of close friends and that it may be beneficial to invest the time and energy in recreating the social context in which the decisions are made to fully appreciate the determinants of behavioural decision-making; effective role play would include both personal and social considerations in relation to preparedness to accept amphetamines from friends.

The present study had several strengths. First, the study contributed to the evidence for the application of the theory of reasoned action in predicting drug-use intention. The study also provided a further test of the utility of behavioural willingness in relation to risky behaviours, and provided useful information about the determinants of behavioural willingness to use amphetamines. Finally, by comparing the

criterion variables of behavioural intention and willingness, the study provided some support for the behavioural willingness model as particularly useful in eliciting responses to risky behaviours such as drug use.

There are a few limitations of the current study. The study examined the predictors of behavioural intention and willingness rather than the intention-behaviour and willingness-behaviour relationships; a full examination of the TRA and prototype/willingness model, including the prediction of behaviour, is warranted. The measure of subjective norm was assessed using one item only and future studies should include multiple items for each construct under investigation. The sample size was small and the small number of male respondents may have contributed to the absence of any sex differences. In addition, it would be useful for future studies to consider studying intention and behavioural willingness within the social context of decision-making. As a greater incidence of drug-use is found in settings conducive to using drugs, such as club and bar precincts, it would be useful to conduct theory of reasoned action and behavioural willingness studies within these settings.

In conclusion, the study provided general support for the use of the theory of reasoned action in predicting young people's intention to use amphetamines. The study also provided support for the concept of behavioural willingness, in that more people were willing to accept amphetamines if a friend offered them, than were intending to use amphetamines. This finding suggests behavioural willingness is useful in eliciting people's responses to risky situations where more spontaneous, rather than deliberate, reactions may occur. Overall, the findings of the present study provide support for the theory of reasoned action, with evidence provided for the role of behavioural willingness as an outcome measure. Targeting and measuring willingness, rather than formed intentions, may prove useful for future health campaigns that take into account the often reactive and social nature of drug use for young people.

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### **Research Profile**

Rebecca Litchfield has nine years experience working with adolescents as a counselor and registered psychologist. For the past three years she has been working with young people with significant substance use and/or severe mental health issues in a youth detention centre.

Katherine White is a senior lecturer in the School of Psychology and Counselling at the Queensland University of Technology. She has research interests in attitude-behaviour relations, especially in relation to the prediction of health-related behaviours.