

## REGRET IS WHAT YOU GET: THE EFFECTS OF MANIPULATING ANTICIPATED AFFECT AND TIME PERSPECTIVE ON RISKY SINGLE-OCCASION DRINKING

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**Abstract** — This study tested anticipated affect as a potential strategy for reducing risky single-occasion drinking (RSOD). The hypothesis was that asking respondents to focus on their anticipated affect *following* RSOD would lead to higher ratings of negative affect than those obtained when asking respondents to focus on their feelings *towards* RSOD. In turn, these negative affect ratings were hypothesized as leading to safer behavioural estimates and reductions in RSOD. The study is based on a self-report questionnaire administered at two time points. At Time 1, measures of past drinking and demographic information were collected, along with affect ratings of drinking within safer single-occasion limits and affect ratings of RSOD (within-subjects condition). Time perspective was manipulated whereby the experimental group was asked to focus on affective reactions *after* RSOD and the control group to focus on affective reactions *towards* RSOD (between-subjects condition). Two weeks later, drinking behaviour was measured. The findings showed that the time perspective manipulation resulted in significantly higher negative affect ratings in the *feeling after* condition than in the *feeling towards* condition. Further, females reported lower negative affect than males. No other main or interaction effects were found. The time perspective manipulation, however, failed to produce safer behavioural estimates and RSOD reduction at follow-up. No significant differences were found between ratings of negative affect when drinking within safe limits as compared with ratings of affect when drinking above such limits. Despite greater negative affect 'after' rather than 'toward' the target behaviour, anticipated affect following RSOD did not yield safer behavioural estimates and subsequent drinking reduction at follow-up. These findings are interpreted in the context of risk perception associated with RSOD. The implications of this study for design of interventions aimed at reducing RSOD are discussed. In particular, ways of intensifying negative affect for RSOD are considered.

### INTRODUCTION

Increasingly, concern about the harm caused by alcohol consumption is focusing upon moderate as well as heavy drinking. This change in emphasis follows reports of studies showing that harm may be associated with single-occasion drinking at lower levels of consumption than previously thought (Midanik *et al.*, 1996). There are significant correlations between the number of alcohol units consumed on a single-drinking occasion and alcohol-related harm, such as traffic accidents, crime, unwanted pregnancies, contracting sexually transmitted diseases such as HIV/AIDS, and mild

damage to the heart, liver, brain, and immune system (Morgan *et al.*, 1990; Department of Transport, 1992; Health Education Authority, 1996). To date, attempts to promote more sensible drinking habits have had limited success (Foxcroft *et al.*, 1997). One reason for this may be an incomplete understanding of the cognitive mediators of alcohol use (Coggans and Watson, 1995). Identification of such mediators could enhance the effectiveness of preventive programmes (Donaldson *et al.*, 1996).

Social cognition theories applied to health behaviours stress that formulating intentions to initiate an action represents a crucial step in behaviour change. However, empirical studies have found only weak associations between behavioural intentions and enactment (e.g. Schwarzer, 1992). Recent developments suggest that the performance of a recommended action is not solely determined by

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the formation of an intention, but is also dependent on the identification of the social processes involved in action initiation and regulation (Orbell *et al.*, 1994). Some development has been made towards generating models of enactment which outline the role of action planning and action control in goal achievement (e.g. Schwarzer, 1992).

It has recently been argued that the focus on planning should include affective processes, as these may have important effects on such planning and on emotions felt during action and therefore action control (Abraham and Sheeran, 1994). Recent studies suggest that the mere anticipation of post-behavioural feelings can influence people's behaviour, as behavioural choices have been found to be based upon anticipated emotional reactions following a particular behaviour (Richard *et al.*, 1996a). For example, the anticipation of tooth pain in the future can lead to making an appointment with the dentist. Research on the role of post-behavioural feelings has been tested with various emotions. These include guilt, sadness, and anger (Baron, 1992), regret and disappointment (Loomes and Sugden, 1986), and embarrassment and pride (Simonson, 1989).

In recent years, particular attention has been paid to the predicted effects of post-behavioural regret or as it has been referred to in the literature, 'anticipated regret'. This work has been based upon the regret theory (Bell, 1982), which assumes that the value of choosing one alternative is dependent on the alternatives simultaneously rejected and that people attempt to avoid decisions that could result in regret. This has been supported empirically by recent studies. Parker *et al.* (1995) looked at anticipated regret in relation to driving violations. Anticipated regret (measured by two items, each rated on a 'likely-unlikely' scale '*having committed the violation would make me feel sorry for doing it*' and '*my committing the violations would make me feel good*') was found to significantly decrease behavioural intentions to commit driving violations. This led the authors to suggest that affective reaction is an important factor in shaping intentions to perform behaviours that are antisocial or socially controversial. Richard *et al.* (1996a) investigated the effects of post-behavioural feelings in the health domain, specifically in the context of unsafe sexual practices. They investigated whether unsafe sexual practices (not using condoms with new and/or 'casual' partners) can be reduced by

requiring respondents to consider their post-behavioural feelings. They asked people to focus on their feelings after unsafe sex, expecting people to become increasingly aware of the negative affective consequences of unsafe sexual behaviour and to become more risk-averse, subsequently reducing their willingness to engage in unsafe sex. They found support for their hypothesis, with respondents in the *feeling after* condition reporting higher willingness to reduce their risk in future interactions and lower risk-taking behaviour over a 5-month follow-up period, than respondents in the *feeling towards* condition (those who were asked simply to focus on their emotions towards unsafe sex). Thus, the induced focus on post-behavioural emotions was successful in increasing the likelihood of expectations to engage in adaptive behaviours and subsequent behaviour change. Richard *et al.* (1996a) accounted for their results by suggesting that, when people think about enacting a behaviour, different cognitions and affects are salient, compared with when they think about the consequences of the action.

Richard *et al.* (1996a) found that focusing on post-behavioural emotions increased both behavioural expectations to engage in safer sexual practices and actual condom use. But can this finding be extended to the area of RSOD? Richard *et al.* (1996a) have argued that the distinction between peoples' feelings about an action and their anticipated feelings after the action is most relevant for domains in which there is a clear affective discrepancy between the behavioural activity itself and the possible post-behavioural outcome. For instance, in order to keep our teeth healthy, we need to see the dentist regularly. For some behaviours, then, there is clear discrepancy between the feelings one would experience after an action and the feeling one would experience about or towards the action itself. Arguably, the area of RSOD is one area in which such a discrepancy also exists. There is much evidence to suggest that favourable attitudes towards alcohol consumption are associated with greater alcohol consumption (Evans and Dunn, 1995). For example, Gustafson (1988) found that female students expected themselves to become happy when consuming large doses of alcohol. Since these beliefs are relevant to the activity of drinking at safer levels in drinking situations, peoples' feelings *towards* RSOD may be relatively positive. However, experienced drinkers are also

aware of some of the negative consequences of drinking: the 'morning hangovers' and the financial costs of alcohol consumption. Thus, if a person engages in RSOD, s/he may become concerned about the consequences of their actions and experience regret and other negative feelings. Since such worry, regret, and guilt are dysphoric feelings which can be experienced *after* RSOD, these feelings are likely to become more salient when respondents think about how they would feel after heavy drinking. In support of the above argument, Richard *et al.* (1996b) explored post-behavioural feelings for alcohol use amongst those for other behaviours. They reported that anticipated post-behavioural affective reactions were significantly more negative than attitudes toward the behaviour itself. They also found that, for alcohol use, anticipated affective reactions explained a significant proportion of the variance in behavioural likelihood and actual behaviour at a 4-week follow-up. These effects were over and above the contribution of other main components of the theory of planned behaviour, such as perceived behavioural control and subjective norms, leading authors to suggest that these negative anticipatory feelings could help to understand attitudes and behaviours and that they should therefore be incorporated into models of health behaviour (Van der Pligt and De Vries, 1998). The salience of anticipatory affective reactions in explanations of behavioural likelihood estimates and behaviour as found in the Richard *et al.* (1996b) study is congruent with other studies showing the effects of negative expectancies of post-alcohol consumption on alcohol use. This has led many researchers to suggest that a manipulation of these expectancies should be incorporated in education, treatment, and prevention approaches aimed at the reduction of alcohol consumption. Indeed, some studies show that incorporating post-consumption negative affect in programmes aimed at reducing alcohol consumption had beneficial effects on the reduction of alcohol consumption (McMahon and Jones, 1996).

The potential usefulness of focusing on the negative affective consequences of a risky behaviour is especially relevant in the context of RSOD, because with alcohol consumption being a frequent activity for many young people it is often also perceived as a relatively safe alternative to drugs and smoking (Health Education Authority, 1995a), the negative consequences of drinking are often

very likely to be discounted. Therefore interventions which stress the immediate post-behavioural affective consequences potentially could increase willingness to engage in preventive behaviour. By encouraging respondents to focus on their feelings after imagining the risky behaviours, it is expected that they would become increasingly aware of the negative affective consequences of that behaviour, which in turn will make them more risk averse and therefore likely to reduce their RSOD expectations and behaviour. The present study, then, was conducted to explore the hypothesis that a focus on post-behavioural emotions increases behavioural expectations to avoid RSOD on future drinking occasions and RSOD at follow-up.

The present study, consistent with Richard *et al.* (1996a), assessed affective reactions by asking respondents to select from an extended list a limited number of affect terms which most closely represent their feelings. This differed from the usual way of measuring attitudes when testing models of health behaviour, such as the theory of planned behaviour where semantic differential scales are used. Responses to these scales are then employed as multiple indicators of anticipated affect (see e.g. Richard *et al.*, 1996b). The use of semantic differential scales in the present work, however, was deemed inappropriate in a study of RSOD. The present study explored a behaviour where the perceived risk is low (Health Education Authority, 1995a) and so a methodology aimed at increasing the salience of anticipated regret and related negative emotions needed to be employed. In this study, therefore, the methodology of Richard *et al.* (1996a) was adopted. Their evidence that attitude and behaviour are easily changed if people are led to attend to a particular subset of beliefs (by being asked to focus on post-behavioural emotions) showed that this method can be effective for increasing condom use in situations where initial appraisal of risk is low, as it is also for RSOD. This seems therefore a more promising approach in attempting to reduce RSOD.

The potential effect of presenting information about the dangers of alcohol use on affective reaction ratings and RSOD behaviour was included as an additional experimental condition. Providing information as a strategy for enhancing motivation for change has been found to be effective in previous research findings (Moscowitz, 1989). The hypothesis that respondents in the 'feeling after'

condition who received such information would report higher levels of negative affect associated with RSOD than respondents in the 'feeling after' condition who had not received such information was explored.

In the USA and in other countries, such as Canada and Australia, previous investigations of single-occasion drinking have taken drinking in excess of 6U for both men and women as constituting increased risk of alcohol-related problems (frequently referred to as binge drinking) (Wechsler and Isaac, 1992; Smart and Walsh, 1993; Marlatt *et al.*, 1995). However, this limit has not been adopted uniformly. For example, one UK study has favoured a more generous limit of 10U for men and 7U for women (Bennett *et al.*, 1991). The current British advice is to restrict drinking to 3U/day for men and 2U/day for women (British Medical Association, 1995; Health Education Authority, 1996). However, as yet there is no evidence for favouring one cut-off point over another (Catarino, 1992; Health Education Authority, 1995*b*) and so RSOD research focuses on relative risk rather than absolute risk. In the present study, then, participants were informed that the risk of harm increases at the level of 6U/drinking occasion.

## METHODS

### *Design and predictions*

A questionnaire study was conducted with risky single-occasion drinkers where data were collected at two time points separated by 2 weeks.

The study was a four-factor mixed design, with repeated measures on one factor and three between-subjects factors. The names of the factors and their levels were as follows: the within-subjects factor was ratings of affect terms recorded for the two behavioural alternatives (risky/non-risky drinking); and the between-subjects factors were time perspective (towards/after), information about RSOD (present/absent), and gender. With the three between-subjects factors included in the study, there were thus eight experimental conditions.

The following predictions were made. Main effects of the time perspective and information conditions on ratings of negative affect were expected. A two-tailed hypothesis regarding the effects of gender on negative affect ratings was proposed.

Further, an interaction between time perspective and the two behavioural alternatives on ratings of negative affect was predicted, with the latter being maximized in the 'feeling after' condition wherein safer single-occasion drinking (SSOD) limits are exceeded. In addition, it was predicted that the provision of information prior to the time perspective manipulation would enhance ratings of negative affect in the RSOD scenario.

### *Participants*

A sample of 400 psychology undergraduates were recruited during lectures. Although given the opportunity to refuse to participate, none did so. Of these, 137 were identified as risky single-occasion drinkers and could therefore be included in the study. Ninety-nine of these respondents returned the second questionnaire. To allow matching of Time 1 and Time 2 questionnaires, while maintaining anonymity, respondents identified themselves with a personally generated code. The analysis of behavioural likelihood estimates (Time 1) is based on the data generated from the 137 respondents and the analysis of RSOD at follow-up is based on the data generated from the 99 respondents. Those who completed only the first questionnaire ( $n = 38$ ) did not differ significantly from those who completed both parts of the study ( $n = 99$ ) in the experimental conditions (time,  $t = 1.62$ , d.f. = 66.69,  $P = 0.109$ ; information,  $t = 0.12$ , d.f. = 66.68,  $P = 0.91$ ; and gender  $\chi^2 = 1.82$ , d.f. = 1, n.s.) as well as past drinking recency ( $\chi^2 = 0.08$ , d.f. = 1, n.s.) and frequency ( $t = 1.22$ , d.f. = 22.68,  $P = 0.22$ ). The two groups, however, did differ significantly in age ( $t = 3.46$ , d.f. = 96.70,  $P = 0.001$ ) with those who did not provide follow-up data, being significantly younger than those who did so (mean of 21 years for the former and 24 years for the latter). Of the 137 respondents, 54 were males (39.4%) and 83 were females (60.6%). Respondents' ages varied between 18 and 54 years with a mean of 23 years. The majority (89.1%) were single ( $n = 122$ ).

### *Materials*

The study questionnaire at Time 1 was composed of three parts: (1) a section eliciting demographic data and information about previous alcohol consumption; (2) a section concerning affect ratings of RSOD; (3) a section measuring behavioural likelihood of RSOD and likelihood of occurrence of drinking situations.

Specifically, Part (1) of the Time 1 questionnaire opened with a definition of a *unit of alcohol* by informing respondents that in the UK such a unit is equivalent to half a pint of beer or a small spirit. Thereafter, items to measure the following were used:

*Previous drinking experience.* Recency of RSOD was measured by the item 'have you consumed 6 units or more on one single-occasion in the last 2 weeks?'; frequency of RSOD was measured by the item 'how often do you drink 6 units of alcohol or more on one drinking occasion?'. A five-point response format was provided: 'most days', 'once or twice a week', 'once or twice a month', 'less than once a month', and 'never'

In Part (2) of the Time 1 questionnaire, the following subsections were included:

*Affective reactions experienced when drinking within the SSOD levels.* To measure affective reactions to RSOD, a list of positive and negative feelings relevant to RSOD was generated in a pilot study in which risky single-occasion drinkers were asked to articulate such feelings in relation to such an occasion. Those feelings selected for use here were: (a) most commonly identified by the risky single-occasion drinkers; (b) were identifiable as positive or negative in accordance with the taxonomy of Watson and Tellegen (1985) as used by Richard *et al.* (1996a). In total, 18 positive feelings and 22 negative feelings were selected, the former being *lively, good-hearted, comfortable, cheerful, feeling high, sociable, carefree, good humour, joyful, happy, pleasant, playful, vivacious, vigorous, light-hearted, energetic, elated, and good-natured*; and the latter being *embarrassed, annoyed, frustrated, anxious, alienated, fearful, feeling lethargic, panic, depressed, frightened, weary, disgust, scared, paranoid, melancholy, sad, regretful, gloomy, suspicious, guilty, feeling blue, and dull*.

Negative affect experienced when drinking within SSOD levels was measured by asking respondents to select a total of 10 of the 40 affect terms to denote how they would feel in the hypothesized situation. Each of the negative terms selected was scored by assigning it 1 point, with respondents receiving a score ranging from 0 to 10 for this behavioural alternative.

*Affective reactions when drinking above SSOD levels.* This measure was identical to the one detailed above, except that measurements were elicited for drinking above SSOD limits.

In Part (3) of the Time 1 questionnaire, the following subsections were included:

*Behavioural likelihood of engaging in RSOD.* Four items measured perceived likelihood, each of which related to four typical drinking situations. These situations had been elicited in a pilot study in which 10 self-identified excessive drinkers were asked to generate a list of their most typical drinking situations. Those most commonly reported were selected: drinking with a friend during a weekday; drinking with a friend at the weekend; drinking in a party or a night club; and, drinking at a dinner party or a celebration. These situations were incorporated into questionnaire items as follows: 'suppose one evening you meet a group of friends with whom you regularly drink, how likely is it that you would drink 6 units or more?'. A seven-point response format was provided for each item, with endpoints of 'extremely likely' and 'extremely unlikely' being designated (high scores indicating low likelihood of RSOD). The four perceived likelihood responses were summed to form a composite score of likelihood to engage in RSOD.

*Likelihood of occurrence of drinking situations.* Four items measured the extent to which each of the four likelihood situations could happen to the respondent personally, seven-point response formats being provided for each with endpoints of 'applies highly' to 'never applies' being designated (high scores indicating a low likelihood of event occurrence). The four responses were summed to form a composite score.

The study questionnaire at Time 2 contained measures of RSOD, as follows:

*Drinking behaviour at follow-up.* Recency of RSOD was measured by the item 'have you consumed 6 units or more on one drinking occasion in the last two weeks?'. Frequency of RSOD was measured using a four-point scale: 'most days', 'once or twice in the first week', 'once or twice in the second week', 'never'.

### *Procedure*

At recruitment (Time 1), respondents received two questionnaires: one was for immediate completion and the second was for completion 2 weeks later (Time 2). At Time 1, respondents completed the study questionnaire, providing demographic data and data about previous RSOD behaviour. Those in the *Information present* condition were then

presented with written information in the form of a leaflet produced by the Health Education Authority (1994) on SSOD limits and the harm associated with exceeding these. In the *Information absent* condition, participants did not receive this leaflet.

Next, respondents completed the affect ratings task. Respondents were presented with two scenarios describing a situation in which they meet a friend for a drink one evening. In one scenario they drink *less than 6U* of alcohol and in the other they drink *6U of alcohol or more* (the order of the two behavioural alternatives being counter-balanced over participants. Half the respondents were asked to indicate the feelings that they would have *after* the behavioural acts (*feeling after* condition), whilst the other half were asked to indicate the feelings that they currently have *toward* the behavioural act (*feeling toward* condition).

Following this, all respondents were asked to respond to items measuring behavioural likelihood and likelihood of event occurrence. Two weeks later, respondents filled in a second questionnaire measuring risky drinking consumption in the last 2 weeks.

## RESULTS

Data from respondents who on Part (1) of the study questionnaire indicated that they had never consumed 6U of alcohol or more on one drinking occasion were excluded from the ensuing statistical analysis. Also, any participant whose composite score on the four items measuring likelihood of occurrence of drinking situations which lay within the 'never applies' range was omitted from the subsequent analysis.

Table 1 outlines descriptive statistics (means, standard deviations and  $\alpha$ -coefficients) for independent and dependent variables included in the study. The salient features of Table 1 are as follows. Mean scores indicate that there was no change in drinking recency between Time 1 and follow-up. However, at Time 2, the table shows that mean drinking frequency had increased. The means for number of selected negative affect terms were similar for RSOD and SSOD. In addition, the low magnitude of these negative affect means indicates that participants selected positive affect terms more frequently than negative ones. The mean for behavioural likelihood of engaging in RSOD indicates, in

terms of the response format used for this measure, that participants were 'slightly likely' or did 'not know' whether or not they would engage in RSOD on future drinking occasions. The mean score for likelihood of event occurrence indicates that participants reported such occurrence of drinking situations as either 'often' or 'sometimes' applying to them.

### *Associations between measures*

Zero-order correlations ranged between 0.00 and 0.81. However, only one correlation was above 0.7, the correlation between past drinking recency and recency at follow-up. Additional correlations were computed between the two affect measures (affective reactions for RSOD and affective reactions for SSOD), behavioural likelihood estimated and RSOD frequency for the two time perspective conditions (before and after). The latter correlations were computed to explore whether stronger correlations would be observed for the 'time after' condition. No significant differences were found between the two time perspective groups (as none of the correlations exceeded 0.23).

### *Comparisons between respondents allocated to the eight conditions on past drinking measures, sex, and age*

Although all respondents in this study were classified as risky single-occasion drinkers, they were compared in terms of past drinking, sex, and age. This analysis was done to investigate and control for the differences between subjects across the eight conditions. A three-way factorial ANOVA was computed comparing respondents on past drinking frequency and age. Further, a  $2 \times 2$   $\chi^2$  test (time perspective by information) was carried out to compare respondents on past drinking recency. No significant differences between the groups were observed.

### *Testing for main and interaction effects of experimental conditions*

The aim of this analysis was two fold: firstly, to identify the relevance of time, information and sex to affective reactions related to RSOD, and secondly, to identify differences between affective reactions to SSOD and RSOD. It should be pointed out here that the within-subjects affective reactions variable was transformed to eliminate skewness. The transformation reversed the direction of the

Table 1. Cronbach's- $\alpha$ , means, and standard deviations for independent and dependent variables

Variables	No. of items	$\alpha$	Minimum–Maximum	Mean	SD
Past RSOD measures					
Drinking recency	1	—	1–2	1.28	0.45
Drinking frequency <sup>a</sup>	1	—	1–4	2.79	0.97
No. of negative affect terms					
Drinking less than 6U (SSOD)	1	—	0–10	2.07	3.36
Drinking 6U or more (RSOD)	1	—	0–10	2.42	3.51
Behavioural likelihood	4	0.77	4–28	15.77	4.48
Likelihood of event occurrence	4	0.89	4–28	13.76	6.91
Drinking at follow-up measures					
Drinking recency	1	—	1–2	1.29	0.45
Drinking frequency <sup>a</sup>	1	—	1–4	2.28	0.94

<sup>a</sup>Higher scores reflect lower risky single-occasion drinking (RSOD) consumption.

Table 2. Means, standard deviations, and main effects for between- and within-subjects factors

Within-subjects factors	Between-subjects factors								Within- and between-subjects main effects <i>F</i>
	Time perspective — 'before'				Time perspective — 'after'				
Drinking level	Information present		Information absent		Information present		Information absent		19.55 ***
	Males mean (SD)	Females mean (SD)	Males mean (SD)	Females mean (SD)	Males mean (SD)	Females mean (SD)	Males mean (SD)	Females mean (SD)	
									0.26
									5.80*
Safer single-occasion drinking	0.68 (0.36)	0.89 (0.26)	0.61 (0.37)	0.84 (0.31)	0.45 (0.38)	0.53 (0.40)	0.68 (0.42)	0.70 (0.39)	2.27
Risky single-occasion drinking	0.54 (0.31)	0.83 (0.32)	0.68 (0.35)	0.72 (0.36)	0.45 (0.33)	0.57 (0.40)	0.58 (0.41)	0.51 (0.41)	

Transformed mean scores are reported. Higher scores reflect lower negative affect. \* $P < 0.001$ ; \*\*\* $P < 0.05$ .

scores so that high scores then represented lower negative affect. To explore these aims, an ANOVA with repeated measures was computed (SPSS MANOVA). Table 2 displays the means, standard deviations, and the main effects for the between- and within-subjects factors. The within-subjects factor of affective reactions was derived from affect terms chosen when drinking less than 6U and from affective terms chosen when drinking 6U or above. There were three between-subjects factors, with two levels in each: time (before, after); information (present, absent); and sex (male, female). Exam-

ination of the within-subjects factor revealed no significant effects, as there were no significant differences between affective reactions when drinking at safer limits, as compared with affective reactions when drinking above the safer limits. Examination of the between-subjects factors revealed main effects of time with the 'after' condition containing higher negative affect than the 'before' condition. There was also a main effect of sex, with females reporting lower negative affect than males. There were no other main or interaction effects.

*The effects of time perspective, information, and regret on behavioural likelihood and future behaviour measures*

Separate ANOVAs were computed to explore the effects of time, information, and gender on behavioural likelihood and the following behaviour measures at follow-up: frequency of RSOD and change in frequency of RSOD. None of these analyses reached statistical significance (data not shown).

## DISCUSSION

The present study provided a test of inducing negative affect to RSOD as a strategy for enhancing SSOD behavioural likelihood estimates, and SSOD behaviour at follow-up. As predicted, consistent with Richard *et al.* (1996a, b), the study was successful in producing more negative ratings in the *feeling after* than in the *feeling towards* condition. These negative ratings, however, did not discriminate between occasions in which respondents engage in SSOD and those in which they engage in RSOD. Further, it should be noted that the induced manipulation of enhancing negative emotion failed to produce safer behavioural likelihood estimates and reduction in RSOD at follow-up.

In this study, higher negative affect ratings were observed in the 'feeling after' than in the 'feeling towards' condition. Focusing the attention of participants on the negative consequences of single-occasion drinking may be the first step in bringing about a desired change, as it is unlikely that respondents would alter their behaviour without being satisfied about the possible negative consequences of single-occasion drinking (regardless of the risks of that drinking). However, despite these encouraging results, the higher negative ratings in the 'feeling after' condition did not lead to safer behavioural likelihood estimates or a reduction RSOD at follow-up. The latter, it is argued, is likely to have been implicated in the patterns of negative affect ratings reported in this study. Specifically, the negative affect ratings did not differ as a function of the riskiness associated with single-occasion drinking, indicating that respondents do not associate higher negative affect with RSOD compared with SSOD. Further, respondents showed a preference for positive emotions overall

(regardless of the riskiness of drinking), with 32% showing no negative affect at all and only 13% reporting high levels of negative affect as being associated with single-occasion drinking. These results are in contrast to the findings by Richard *et al.* (1996a), in which for the risky behavioural alternative presented, namely, unsafe sex, the 'feeling after' condition was significantly more negative than the 'feeling towards' condition and the average ratings for negative affect were substantially higher than those obtained in the present study for both behavioural alternatives. The pattern of negative affect ratings reported in this study, in turn, is likely to be attributable to low risk perception and low fear associated with RSOD.

Whereas perception of risk for HIV infection is high, as people tend to overestimate the likelihood of contracting AIDS (Van der Pligt, 1996), risk perception of RSOD is low. There is ample evidence for the latter in the literature. For example, Moore *et al.* (1994) using a much more inclusive criterion for RSOD than the one used in the present study (10 U/drinking occasion), reported that only 42% of risky single-occasion drinkers felt that their levels of drinking were harmful to their health with only one-quarter wanting to reduce consumption. The Health Education Authority (1995a) showed that alcohol reduction is perceived to be a low priority by most young people and that the dangers of alcohol use are perceived to be minimal. In contrast, self-reported knowledge about HIV transmission has increased in recent years (e.g. D'Augelli and Hershberger, 1995), with the majority of people being convinced that condom use is an effective preventive strategy against contracting AIDS (Abraham *et al.*, 1994). Risk appraisal alone, however, is generally not sufficient to foster behavioural change. Nevertheless, it is generally assumed that individuals are unlikely to take precautions if they believe they are not at risk (Weinstein, 1988). The first requirement of a programme aimed at increasing preventive behaviour is that it convinces people of the possible negative consequences of certain practices. Therefore, people are less likely to experience negative affect following RSOD to which low perceived risk is attached than they are to experience negative affect following performance of a behaviour, the consequences of which are perceived to be catastrophic and irrevocable.

Closely related to risk perception is fear. Experimental manipulations that produce increases in

reported fear generally also produce increases in acceptance of the recommended action (Sutton, 1982). Furthermore, correlational analyses often reveal significant positive relationships between ratings of fear and intentions or other attitudinal measures (Wolf *et al.*, 1986). If fear is indeed what was being measured in this study, then this would account for the pattern of affect ratings reported. Research shows that the perceived irrevocable consequences of AIDS result in a feeling of fear (Abraham *et al.*, 1994), whilst personal worry about HIV was found to increase over time (D'Augelli and Hershberger, 1995). Further, fear was found to be implicated in willingness to consider an HIV antibody test (Abraham *et al.*, 1994) and condom-related intentions (Van der Velde and Van der Pligt, 1991). In contrast, little evidence for the role of fear in the area of alcohol has been reported. Individuals do not worry, for example, about the long-term effects of drinking on liver function (Health Education Authority, 1995a). However, findings from campaigns carried out by The Department of Transport in recent years using commercials aimed at enhancing fear of excessive alcohol consumption in terms of consequences, such as accidents, were found to contribute in part to the reduction in the proportion of drivers failing to refuse a road-side screening breath test (Department of Transport, 1995). Health education, thus, needs to focus on the enhancement of fear associated with RSOD-related harm.

The patterns of affective reactions reported in this study are congruent with the assumptions made by the regret theory, which argues that the extent to which people experience negative affect depends upon the comparison of that decision with the possible outcomes of other courses of action, and that negative affect would be especially discomforting when the choice is irreversible (Bell, 1982). If people do not perceive drinking as a problem, there is no reason to regret it 'afterwards'.

The results reported here suggest that effective RSOD interventions need to consider more intensive manipulations to promote negative affect regarding RSOD by enhancing the knowledge, perceived risk, and fear associated with RSOD, as well as by providing coping skills to accommodate change and by challenging the representations of RSOD-related problems in the media. One possible way of employing a more sophisticated experimental method for inducing negative affect is to

manipulate risk perception prior to asking respondents to focus on their post-behavioural feelings, thereby intensifying the negative affect felt following RSOD. When successful, anticipated affect is assumed to work by a process in which the person becomes more risk-averse; one which Richard *et al.* (1996a) referred to as a 'process of increasing awareness'. In the present study, risk perception was manipulated by the time perspective task, but also indirectly by the presentation of information about safer limits. The information, however, was given at a very general level in terms of absolute risk and not in terms of personal and relative risk. Research findings suggest that attempts to increase risk perception are more likely to be successful when people are encouraged to consider their own behaviour and their own vulnerability before confronting them with that of exemplary peers (Dolinski *et al.*, 1987; Hoorens and Buunk, 1991). Thus it is proposed that the time perspective task within the context of a more detailed attempt to manipulate risk perception might provide a useful way of intensifying the negative affect involved in RSOD. Alternatively, interventions aimed at reducing alcohol-related harm in young people favour changing social norms as another effective way of reducing alcohol misuse and alcohol-related harm (Donaldson *et al.*, 1996).

That women reported lower negative affect following RSOD than males may be related to sex differences in engaging in risky behaviours under the effects of alcohol. Studies show, for example, that significantly more men than women report having intercourse without using a condom, while under the influence of alcohol, suggesting that the consequences of alcohol consumption may differ between men and women (Jadack *et al.*, 1995). As men are more likely to engage in risky behaviours while intoxicated, it is to be expected that following RSOD men would show more negative affect. In terms of health education what this suggests is that affect-based interventions need to be sensitive to sex differences in terms of the context in which alcohol consumption takes place.

In conclusion, in this study, inducing negative affect on its own as a strategy for reducing RSOD was not successful in moderating RSOD. Given drinking-related norms in Western societies, potential beneficial effects of regret for behaviour change as offered by Bell (1982) which have been effective in altering risky sexual behaviour

(Richard *et al.*, 1996a) have not been so in altering RSOD intentions and behaviour. Successful interventions would need to consider more sophisticated ways of inducing negative affect before definite conclusions can be made as to the utility of this strategy for such drinking behaviour.

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