The Relationship Between Normative Beliefs and Tobacco Smoking: A Social Psychological Perspective

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The Relationship between Normative Beliefs and Tobacco Smoking:

A Social Psychological Perspective

Wendy Cannon

A report submitted in Partial Fulfilment of the Requirements for the

Award of Bachelor of Arts (Psychology) Honours,

Faculty of Computing, Health and Science,

Edith Cowan University.

October 2008

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Acknowledgements

There are many people I would like to thank for assisting me with the completion of this project. First and foremost, I would like to express my gratitude to my supervisors Dr. Eyal Gringart and Dr. Shelley Beatty, who have provided me with their extensive wisdom and guidance and devoted their time to support me throughout each stage of the project. Thank you both for your commitment and time, I am truly grateful. I would also like to extend my thanks to Carole Gamsby and Dr. Justine Dandy for their kind and approachable manner in assisting all the fourth year students. A special thank you to the Heads of Schools and unit coordinators in the Faculty of Computing, Health and Science who allowed me to approach students and recruit participants from within their courses, especially Dr. Chris Meredith and Barbara Howard for their extra efforts. Last but certainly not least, I would like to express my eternal gratitude to my parents, family, partner and close friends for their cooperation and support throughout this intense year. Thank you for all the little things you did to help me make it through and complete the final product.
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Abstract

Tobacco smoking has been classified as the single most preventable cause of death and disease in Australia. It has been estimated that 19,000 Australians die each year as a result of smoking tobacco. The highest level of smoking prevalence in Australia is among young adults aged between 20 and 29 years. While the pleasurable short-term effects of nicotine help to reinforce smoking behaviour, the long-term effects of the harmful chemicals in tobacco pose significant health hazards. This review provides background information on the effects of smoking and nicotine dependence, and discusses the individual and social costs related to tobacco smoking. Adapting a social psychological perspective and harnessing the Theory of Planned Behaviour (TPB) (Ajzen, 1991) as well as Social Identity Theory (SIT) (Tajfel, 1982), show promise in providing more comprehensive explanations for tobacco smoking. This review demonstrates whilst there is substantial knowledge of smoking initiation among adolescents, there is relatively little known about smoking maintenance among young adults even though of all age groups, this is the age that shows the highest smoking prevalence. Future research could investigate smoking maintenance among young adults from a social psychological perspective.

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The Relationship between Normative Beliefs and Tobacco Smoking in Young Adults: A Social Psychological Perspective

The regular long-term use of tobacco is considered a significant public health problem in Australia (Ministerial Council on Drug Strategy, 2004a) and research suggests half of all those who smoke tobacco regularly will die prematurely as a result (Department of Health, 2008). While treatment responses to tobacco smoking are necessary, the more cost-efficient primary prevention strategies are equally, if not more important. The highest level of smoking prevalence in Australia is among young adults aged between 20 and 29 years, with 21.4% of this age group smoking daily (Australian Institute of Health and Welfare (AIHW) (2008). The study of the mechanisms by which young adults adopt and maintain smoking behaviour is therefore of public health significance.

There is consensus that the use of tobacco is a learned behaviour and therefore broad-based psychosocial theories offer the most promising explanations of the initiation and maintenance of smoking tobacco (Bell, Ellickson, & Harrison, 1993; Botvin & Eng, 1982; Coombs, Santana, & Fawzy, 1984; Oostveen, Knibbe, & De Vries, 1996; Scheier, Botvin, & Baker, 1997; Wilks, 1988). While young adults engage in a variety of health-risk behaviours, for example binge drinking, illicit drug use, reckless driving and unsafe sexual activities (Dee & Evans, 2001; Johnson & Gerstein, 1998; Staton, Leukefeld, Logan, Zimmerman, Lynam et al., 1999; Windle, 2003), this review of the literature will focus on tobacco smoking. Whilst a comprehensive discussion is beyond the scope of this review, background information about the effects and consequences of smoking and nicotine dependence, the costs related to tobacco smoking, and public health initiatives
designed to minimise the uptake and continuation of tobacco smoking will be provided. Adapting a social psychological perspective, this review will mainly discuss explanations of the reasons people smoke, by looking closely at research on the relationship between tobacco smoking and the Theory of Planned Behaviour (TPB) (Ajzen, 1991) and Social Identity Theory (SIT) (Tajfel, 1982). The current review will show that while previous studies have found that the overestimation of smoking prevalence among adolescents can be used as a predictor of smoking initiation (Lai, Ho, & Lam, 2004; Nicols, Birnbaum, Birnel, & Botvin, 2006; Primack, Switzer, & Dalton, 2007; Wium, Torsheim, & Wold, 2006), little is known about the 20-29 year old age group. This group is of particular interest because, of all age groups, it shows the highest smoking prevalence (AIHW, 2008). Finally, it will be suggested that future investigations about tobacco smoking among this age group could benefit by exploring smoking maintenance, rather than initiation, from a social psychological perspective.

The Effects of Smoking and Nicotine Dependence

Tobacco smoke reportedly contains around 4,000 chemicals including nicotine, tar, carbon monoxide, carcinogens (cancer-causing agents), ammonia, hydrogen cyanide, acrolein and formaldehyde (Better Health Channel, 2007; Ryder, Salmon, & Walker, 2001). While for novice users the effect of nicotine typically causes feelings of nausea and dizziness (Ryder et al., 2001), tolerance is said to develop quickly and therefore these unpleasant feelings soon diminish (Fernando, Wellman & DiFranza, 2006; Shiffman et al., 2006). The absorption of nicotine into the bloodstream via the lungs causes physiological changes in the body as a result of the stimulation of nicotine receptors in the brain (Britton & Edwards, 2008; Fernando et al., 2006; Hatsukami, Stead, & Gupta,
2008; Julien, 1975). Nicotine also impacts on the central nervous system, making one feel either alert or relaxed, as well as affect the circulatory system by increasing blood pressure and heart rate, and slowing peripheral blood circulation (Britton & Edwards; Northern Territory Government, 2008). Tobacco smoking has also been shown to lower skin temperature, as nicotine causes blood vessels to constrict (Britton & Edwards; Northern Territory Government).

A number of other short-term physiological effects are associated with tobacco smoking and the carbon monoxide present in tobacco smoke. Carbon monoxide binds more readily than does oxygen to haemoglobin resulting in decreased transportation of oxygen throughout the body (Britton & Edwards, 2008; Northern Territory Government, 2008). Such interference weakens muscle performance in the short term (Ryder et al., 2001), and reduces lung capacity in the long-term, making it harder to breath and exercise for long periods (Northern Territory Government).

Tobacco smoking has consistently been associated with dependence (Fernando et al., 2006; Hatsukami et al., 2008; Klein, 2006; Shiffman et al., 2006) and its level of drug dependence is said to be similar to other drugs such as heroin and cocaine (Hatsukami et al.; Ryder et al., 2001). This is because of its nicotine content which acts on the body directly, producing effects such as pleasure, arousal, enhanced vigilance, relief of anxiety, reduced hunger, and body weight reduction, which in turn motivate an individual to continue smoking (Benowitz, Fredericks, & Covey, 2001; Fernando et al.). Dependence upon nicotine occurs rapidly with withdrawal symptoms and difficulties in quitting being experienced even by people who have not smoked for very long periods (Gervais, O’Loughlin, Meshfedjian, Bancej, & Tremblay, 2006; Klein, 2006; Ryder et al.). Ryder
et al. explained that once the body gets used to operating with a level of nicotine in the blood, it seeks to maintain this level, encouraging smokers to continue smoking. Furthermore the half life of nicotine is particularly short (Fernando et al.), which means that once it is inside the body, it breaks down very quickly, resulting in one’s desire to smoke more frequently to maintain its level and ensuing effects (Shiffman et al.). Therefore, while nicotine produces fairly pleasurable effects, as it has a short half life and dependence on it occurs quite rapidly, smoker’s desire to smoke more frequently, and in turn expose themselves to the harmful chemicals that are present in tobacco.

In addition to this, Benowitz et al. (2001) suggested nicotine also acts indirectly through a learning process that occurs when the direct effects of nicotine are experienced repeatedly in the presence of certain features or in the same environment. This learning process, known as classical conditioning (Pavlov, 1927), results in certain environmental factors or situations becoming cues for the direct actions of nicotine, which can be pleasurable in themselves or can become a trigger for lighting up a cigarette (Benowitz et al.; Fernando et al., 2006; Hatsukami et al., 2008). For example situations in which people often smoke, such as with an alcoholic beverage, become powerful cues that encourage individuals to continue smoking. Therefore, Benowitz et al. explained that when people stop smoking it is not only the direct effects of nicotine that must be given up, but they must also relinquish the indirect effects of nicotine, such as cues to smoke.

The harmful chemicals in tobacco smoke are absorbed through the lungs and transported in the bloodstream to numerous organs and tissues in the body (Better Health Channel, 2007; Hatsukami et al., 2008; Julien, 1975). Therefore, the regular long-term use of tobacco has implications for the health and wellbeing of individuals. As suggested
previously, tobacco smoke contains carcinogens which are cancer causing agents (Better Health Channel, 2007). Hence, tobacco smoking is known to cause various cancers including that of the lungs, throat, mouth, nose, and larynx to name a few, as well as respiratory diseases such as emphysema (AIHW, 2000; Britton & Edwards, 2008; Ruscio, 2006). Tobacco smoking is also said to increase the risk of coronary heart disease, stroke, and peripheral vascular disease, with one in four men, and one in five women in Australia at greater risk of heart attack, stroke, and peripheral vascular disease due to tobacco smoking (AIHW, 2000; Better Health Channel; Britton & Edwards). Thus whilst some pleasurable short-term effects have been identified to motivate smoking, the long-term effects of smoking are dangerous and lead to reduced health.

The Costs Related to Tobacco Smoking

Tobacco smoking is continually identified as the single greatest behavioural cause of death and disease in Australia (AIHW, 2000; Ryder et al., 2001; World Health Organization, 2004). The World Health Organization (WHO) (2004) has revealed that 19,000 Australians are killed each year by smoking tobacco. Collins and Lapsley (2007) have examined the costs of tobacco use in Australia and demonstrated that of the total social costs of drug use in 2004/2005 ($55.2 billion), tobacco accounted for $31.5 billion or 56.2%. Such costs included workforce and production costs, healthcare costs, and costs associated with the loss of a years living. In particular, in Australia for 2004/2005 tobacco was estimated to be the primary factor accounting for 14,901 deaths, 753,618 hospital bed days, and $669.6 million of hospital costs (Collins & Lapsley). Thus, the harmful effects of tobacco smoking significantly tax the health system.
Initiatives Used to Minimise the Uptake and Continuation of Smoking

Efforts aimed to reduce smoking in response to information on the individual costs (disease and death), and social costs of tobacco smoking have varied among health authorities, governments, and the community (Britton & Edwards, 2008; Klein, 2006; Ryder et al., 2001; WHO, 2004). In the 1970’s a comprehensive set of tobacco control guidelines were developed by the International Union Against Cancer and the WHO in the aim of reducing the scale of health problems associated with tobacco use (Ryder et al.; WHO). Such action was carried out in Australia in the 1970/80’s by non government health bodies, and state and federal governments (Ryder et al.; WHO). Tobacco control has remained a priority in Australia ever since (Ryder et al.; WHO).

Australia has a range of tobacco control obligations under the international WHO Framework Convention on Tobacco Control enacted in 1998 which aim to support measures that reduce the supply, demand and harm associated with tobacco use (WHO, 2004). In particular, price and tax measures have been implemented to reduce the demand for tobacco in Australia, as well as measures concerning the packaging and labelling of tobacco products (Britton & Edwards, 2008; Klein, 2006; WHO). For example, six rotating health warnings were introduced in March 2006 and presented on tobacco products in colour graphic, with particular regulations to the size and font of the writing, to increase awareness of the harms of tobacco smoking, and subsequently reduce the demand (Ministerial Council on Drug Strategy, 2004b; Ryder et al., 2001).

Various strategies are also incorporated to help control the supply of tobacco in Australia. Such initiatives include restricting the sale of tobacco to people aged over eighteen, mass media education campaigns, replacement of tobacco sponsorship for the
arts and sport, bans on advertising, sponsorships and promotion of tobacco, and restrictions on access to cigarette vending machines (Britton & Edwards, 2008; Klein, 2006; Ryder et al., 2001). Australia has also adopted strategies to help reduce the overall harm from tobacco smoking and in particular the harm from exposure to tobacco smoke. For example smoke-free workplaces and public places have been introduced in response to reports of the dangers of passive smoking (Klein; Ministerial Council on Drug Strategy, 2004b; Palin & Beatty, 2000; Ryder et al.). Evidence of the effectiveness of smoke-free venues was highlighted by Wakefield et al. (2000) and Stephens, Pederson, Koval and Macnab (2001), who found in jurisdictions which had introduced smoke-free laws, fewer children had taken up smoking, and the numbers of smokers and numbers of cigarettes consumed decreased relative to jurisdictions without such laws.

Furthermore, it has been reported that the levels of exposure to tobacco smoke in Australian pubs and clubs is among the highest in the world (Ministerial Council on Drug Strategy, 2004b). With this and other various factors in mind, Australia implemented a legislation on smoke-free pubs and clubs (Ministerial Council on Drug Strategy). Although this recent implementation is yet to be evaluated, since pubs and clubs are social venues frequently visited by young adults, perhaps this initiative will have certain implications for smoking among this age group? Thus, whilst those dependent on tobacco smoking find it difficult to quit, it is clear that the general public as well as the Australian government exert efforts to reduce this harmful behaviour.

Why Do People Smoke?

Despite there being considerable evidence to support the association between tobacco smoking and numerous diseases (AIHW, 2000; Britton & Edwards, 2008;
Ruscio, 2006), people continue to smoke. Whilst there are comprehensive explanations as to why people initiate and continue tobacco smoking such as stress or anxiety relief, pleasure, social pressure, associations or habits, weight control, curiosity, low self-esteem, loneliness, isolation, boredom, depression, and dependence (Carmody, Vietan, & Astin, 2007; Chinese Australian Tobacco & Health Network, 2004; Fernando et al., 2006; Hu, Davies, & Kandel, 2006; Palin & Beatty, 2000; QuitWA, 2008; Think Quit, 2007), a comprehensive review of these is beyond the scope of this paper. By adapting a social psychological perspective, two theories seem to explore plausible explanations for smoking. These theories include the TPB (Ajzen, 1991) and SIT (Tajfel, 1982).

Theory of Planned Behaviour and Tobacco Smoking

The TPB (Ajzen, 1991) has been consistently used to explain smoking behaviour (Cunningham & Selby, 2007; Lai et al., 2004; Nicols et al., 2006; Primack et al., 2007; Wiium et al., 2006). The theory’s notion is people form attitudes through a rational two-step process in which three factors (attitude, subjective norm, and perceived behavioural control) combine to influence intent, and intent then determines behaviour. It is anticipated that the more favourable the attitude and subjective norm, and the greater the perceived behavioural control, the stronger a person’s intention to perform the behaviour will be (Ajzen, 1991; Ajzen & Manstead, 2007). Ultimately, given an individual has sufficient control over the behaviour, they are expected to carry out their intentions when the opportunity arises (Ajzen; Ajzen & Manstead).

Adolescent overestimation of smoking prevalence has been consistently found as a predictor of smoking initiation (Cunningham & Selby, 2007; Lai et al., 2004; Nicols et al., 2006; Primack et al., 2007; Wiium et al., 2006). That is, adolescents who
overestimated the smoking prevalence in their age group were in significantly greater risk of smoking themselves. One’s subjective norms, made up of their normative beliefs and motivation to comply with others, can be used to further understand this discrepancy. For example, if an individual perceives that their peers see smoking as positive (this perception may be inferred simply from observing them participate in the behaviour), and the individual is motivated to meet the expectations of their peers, they will have a positive subjective norm, facilitating their intention to smoke. According to the theory this intention then determines the likelihood of their smoking behaviour.

Furthermore, the TPB would suggest the influence of one’s attitude on behavioural intent can also be predictive of their behaviour. Particularly, an individual’s attitude is said to be influenced by their behavioural beliefs about the likely consequences or other attributes of the behaviour (Ajzen, 2002). In the case of smoking, this would imply the intent of an individual to smoke is based on how they feel about smoking in relation to its consequences. For example an individual may feel that smoking aids relaxation, and therefore while the long-term consequences of smoking are negative, he or she views smoking in a relatively positive light. According to the theory, this would indicate an individual’s intention to smoke, and thus would precipitate their smoking behaviour.

The component of perceived behavioural control was included in the TPB to explain the non-volitional elements of certain behaviours (Ajzen, 2002). As many behaviours appear sometimes beyond volitional control, perceived behavioural control is explained to be made up of the ease or difficulty of performing the behaviour (actual control), and an individual’s perception about the presence of factors which may help to
impede or facilitate performance of the behaviour (control beliefs) (Ajzen). A high level of perceived control is considered to strengthen a person’s intention to perform the behaviour, and therefore increases effort and perseverance (Ajzen). Taking smoking behaviour for example, a smoker may feel as though quitting smoking is difficult, and the belief that he or she is dependent is hindering them from quitting successfully. Therefore since quitting is perceived out of his or her actual control, he or she is less likely to put sufficient energy into quitting, which would directly affect his or her behaviour. If this was true, the theory suggests while perceived behavioural control can influence intent, it also has the capacity to be a direct predictor of behaviour (Ajzen).

Given the components of the TPB, the application of the theory to tobacco smoking may therefore be very useful in furthering understanding of smoking behaviour. Particularly the social influences determining one’s normative beliefs have been the focus of previous studies, and have been shown to have significant predictive power in adolescent smoking initiation (Cunningham & Selby, 2007; Lai et al., 2004; Nicols et al., 2006; Primack et al., 2007; Wiium et al., 2006). One such study conducted by Wiium et al. addressed the concept of norms and whether these were associated with adolescent smoking behaviour. In particular their study examined two facets of descriptive norms: (1) the disaggregated perception of significant others’ smoking in the individuals’ environment and; (2) the perception of the proportion of people who smoke in the individuals’ environment. Their study also focused on desired societal norms in terms of how others should behave from the participants’ point of view. In doing so, Wiium et al. (2006) measured the injunctive norms, descriptive norms, subjective estimates of smoking prevalence, desired societal norms, attitude, perceived behavioural control, and
Young Adults and Tobacco Smoking

smoking behaviour of 1670 fifteen year old students across schools in Norway. Using a multilevel logistic regression analysis they revealed participants who perceived that many students from their class smoked were at greater risk of smoking. They also found participants who demonstrated a positive attitude toward smoking, for example strongly agreed to smoking on school premises, were more likely to be regular smokers. In addition a protective factor was highlighted in that participants, who believed that their parents and peers would disapprove of them smoking in the future, were less likely to be smokers. Wiium et al. stressed while these results could not show casual effect as the study adopted a cross-sectional rather than a longitudinal design, their results could be nationally representative and could thus be generalised to other schools in the country.

Similar results were documented in a study by Primack et al. (2007) which also measured normative beliefs. Their aim was to determine if these normative measures were independently associated with smoking in adolescence, even when they controlled for covariates. Their cross-sectional questionnaire was completed by 1211 male and female participants aged between fourteen and eighteen years, who attended a suburban, public high school outside of Pittsburgh. The questionnaire assessed two dependent variables; current smoking and susceptibility to smoking, in relation to their association with the three normative measures. Additionally the questionnaire controlled for multiple covariates previously shown to be associated with adolescent smoking, such as ethnicity, gender, and parental education. Their data were analysed via two multivariate logistic regression analyses, with the predictor variables set as age, gender, ethnicity, socioeconomic status, parental and sibling smoking, peer smoking, and each of the three normative measures. The criterion variable was current smoking. Results revealed that
adolescents who overestimated smoking prevalence in the general population and perceived that successful and elite people commonly smoke, were more likely to smoke themselves (Primack et al., 2007). Given these findings, and taking into account the protective factor they found consistent with findings from Wiium et al. (2006), three distinct ways to measure normative beliefs were proposed. That is, perception of smoking in the successful and elite; perception of the prevalence of smoking in the general population; and the perception of parents’ and friends’ approval or disapproval of smoking. These findings add particular support to the relationship between tobacco smoking and one’s perception of smoking prevalence. Such findings may be applicable to other current smokers, regardless of age.

An additional study by Smith, Bean, Mitchell, Speizer, and Fries (2007) examined the psychosocial factors associated with smoking. Their aim was to identify factors that may be related to non-smoking adolescents’ intentions to try smoking. In particular they focussed on perceived behavioural control, as well as perceived difficulty of quitting smoking if initiated among non-smoking adolescents. Furthermore they examined the constructs related to attitudes, subjective norms, and behavioural intentions regarding smoking in order to explain adolescents’ intentions to try smoking. They recruited 1002 males and females from three high schools in rural Virginia, and supplied self-administered, in class surveys. Missing data left only 785 eligible participants for analysis. Analysis of the data from Smith, Bean, Mitchell, Speizer, and Fries (2007) found participants who were self-identified non-smokers, had attitudes in common. That is, they had more favourable attitudes toward remaining tobacco free, their perceived norm was that cigarette use is discouraged, they had fewer friends who smoked, and they
perceived quitting as being difficult (Smith et al., 2007). All of these factors seemed to
decrease the likelihood of the intention to try smoking cigarettes in the 30 days and 6
months follow ups. Furthermore, the results suggested participants were particularly
influenced by their perceptions of what their friends think they should do, as well as their
perceptions of what their significant aged peers are doing. For example those who
perceived many of their peers to be smoking, were more inclined to have the intention to
try smoking. These findings show particular support for the relationship between the TPB
and smoking, by emphasising the influence of one’s perceptions of significant others’
attitudes towards smoking and smoking behaviour.

While many studies have focused on behavioural intentions related to smoking
initiation, the cognitive predictors of smoking continuation has received significantly less
attention. One study that did address smoking continuation and progression, however,
was conducted by Van Zundert, Engels, and Van Den Eijnden (2006). Specifically they
investigated the role of cognitive concepts derived from the TPB in adolescent smoking
reduction, continuation, and progression. They believed it was important to examine the
TPB factors as motivational processes involved in the continuation of smoking after
initiation, as they have been consistently shown to explain and predict smoking initiation,
and therefore are likely to play a role in smoking continuation as well. It was
hypothesised that pro-smoking attitudes, perceived social norms reflecting friends’
approval of smoking, and low self-efficacy to resist smoking in tempting situations,
would predict smoking continuation and progression (Van Zundert et al., 2006). To
determine this, a three wave longitudinal study was conducted among 397 adolescents
who had once tried smoking. Participants were recruited from first grade classes across
ten secondary schools in the Netherlands, with the questionnaires taking place throughout their first grade year. The final questionnaire was administered to them at the start of their second grade year. At baseline, the average age of their participants was 12.4 years. Smoking continuation, attitudes towards smoking, perceived social norms, and self-efficacy to resist smoking were set as their measures.

Concerning progression in smoking behaviour, Van Zundert et al. (2006) found that adolescents who had experimented with smoking, or had recently taken up smoking, and had a positive perception regarding smoking at time one, were significantly more likely to have increased their levels of smoking six months later. Similarly positive attitudes towards smoking, as well as low self-efficacy to resist smoking at time one, were predictive of progression in smoking one year later (Time three). Furthermore from a cross-sectional perspective, they found an interaction between the three factors at time three, demonstrating adolescents who concurrently experienced pro-smoking attitudes, pro-smoking perceived social norms, and who additionally had low self-efficacy to resist smoking, were twice as likely to smoke than adolescents not influenced by all three factors simultaneously. These findings are consistent with that of previous studies conducted on smoking initiation and the factors of the TPB (Primack et al., 2007; Wium et al. 2006); however they highlight the influence of these factors on smoking continuation and progression, rather than initiation. Additionally, this evidence may be applicable to young adults as well as adolescents, as smokers in this age group are more likely to be continuing their smoking behaviour, than initiating it (AIHW, 2008).

While the majority of research on behavioural intentions related to smoking behaviour has involved adolescents, there appears to have been little evidence gathered
on the normative beliefs of adults aged 20-29 years and whether these beliefs also affect their smoking status. One such study was conducted by Cunningham and Selby (2007). They set out to determine whether there was also a normative fallacy held by young adult smokers aged 19-24 years. Specifically, their study looked at whether young adults were more likely to overestimate the proportion of their peers who smoke as compared with the rest of the adult population. They used a random-digit-dialled telephone survey among a representative sample with 434 daily smokers aged nineteen years plus in Ontario, Canada. Respondents’ estimates of the prevalence of smoking were compared with the actual level of smoking reported on the 2004 Canadian Tobacco Use Monitoring Survey by age and gender. Results from Cunningham and Selby’s (2007) study demonstrated more than half of the smokers surveyed, regardless of their age, overestimated by 20% or more the proportion of people their age and gender who smoked, compared with the actual prevalence rates. In addition to this finding, Cunningham and Selby revealed 71% of young adults aged 19 to 24 years overestimated the number of people who smoked compared with 51% of smokers aged 25 years plus. It was also found that the sample of young adults studied, overestimated the proportion of peer smokers to a greater degree (30.4%) whereas older smokers estimated this proportion to a lesser extent (22.8%). While the perceptions of non-smokers were not used as a comparison, these findings imply that the normative fallacy about tobacco smoking is somewhat consistent among all age groups and suggests that perhaps smokers use this normative belief as justification for their smoking behaviour.

Cunningham and Selby (2007) highlighted although their sample size was robust, it was insufficient to explore the interrelation of the normative fallacy, age of respondents
and other demographic factors such as socioeconomic status. In addition to this limitation it may have been more explorative if they had also surveyed non-smokers as a subsequent control group for their perceptions of the proportion of smokers their own age and gender. Nevertheless, despite these limitations their results were interesting in demonstrating that a wide range of age groups have distorted normative perceptions with regards to tobacco smoking. Their findings encourage further research into the influence of normative perceptions on the smoking status in young adults. Investigating this latter age group is paramount as, of all the age groups, smoking is most prevalent among them (AIHW, 2008) and given the causal relationship between smoking and health problems, such as cardiovascular disease and various cancers (AIHW, 2000; Ruscio, 2006), it is likely they will suffer from these in the future resulting in both suffering and significant public health costs (Collins & Lapsley, 2007).

Social Identity Theory and Tobacco Smoking

Further to the discussion thus far, the SIT (Tajfel, 1982) also has the capacity to explain the findings of the relationship between normative perceptions and tobacco smoking (Falomir & Invernizzi, 1999; Lennon, Gallois, Owen, & McDermott, 2005; McLeod, White, Mullins, Davey, Wakefield, & Hill, 2008; Terry, Hogg, & White, 1999). In lay terms, the theory proposes people strive to achieve a positive social identity and will take the appropriate steps to improve the situation if they feel they have an unsatisfactory social identity (Olds, Thombs & Tomasek, 2005). The underlying assumption is that people want identities that are both positive and distinct, which may explain why Primack et al. (2007) revealed a positive relationship between the perception
that successful and elite people smoke; and adolescent susceptibility to smoking and current smoking status.

In addition, the theory suggests an individual will use one or several strategies (absorption, redefining characteristics, creativity or direct challenge) in order to enhance their social identity (Hogg, Terry, & White, 1995). The absorption strategy is described as the attempt to merge oneself into a majority group so as to share their rewards. This idea can be specifically applied to the discrepancy between perceived smoking prevalence and actual smoking prevalence, to further our understanding of why overestimation of smoking prevalence can lead to individuals smoking. For example, if an individual perceives that they have an inadequate social identity because they are a non-smoker whilst the majority of people around them are smokers, they will attempt to merge themselves into the majority group by changing their smoking status to fit in and become socially accepted.

Furthermore, as suggested by Falomir and Invernizzi (1999), the SIT can be used to determine the tendency of individuals to act in terms of their group membership. They proposed that such behaviour depends on the extent to which people define themselves in terms of a self-inclusive social category. For example, smokers who identify themselves as members of their social group based on their smoking behaviour will be more likely to continue smoking in order to maintain membership within the group and achieve a sense of belonging. Moreover, the SIT has been said to assume that individuals are motivated to achieve a positive social identity through group enhancement (Falomir & Invernizzi). Therefore individuals are seen to naturally evaluate their own group members more positively than those belonging to an out group. This suggests that since smoking
behaviour is becoming more and more negatively perceived in the general population, smokers are more likely to over-evaluate their in-group in a positive light and perhaps even overestimate the proportion of individuals who participate in such behaviour, in order to socially justify their behaviour, and maintain their positive identity. Therefore, relevant to understanding smoking behaviour is the question whether the observed overestimation of smoking prevalence mentioned above, serves as justification for smoking.

According to Terry et al. (1999) an important component of the SIT is that one's self concept is drawn from memberships in social groups and categories. It has been consistently suggested that social identities should influence behaviour through the mediating role of group norms, where people are more likely to engage in a particular behaviour if it is in accord with the norms of a behaviourally relevant group membership (Terry et al.). Therefore if an individual identifies themself as belonging to a group of smokers, and perceives that smoking is relevant to their membership in the group, then they should be influenced to continue this behaviour in accordance with the group's norms. Additionally, when the relationship between the SIT and the TPB was tested, in terms of group norms influencing behavioural intentions, Terry et al. (1999) found the perceived norm of a behaviourally relevant reference group was related to intentions for people who strongly identified with the group, but not for those who did not. Therefore for those whom the group membership was an important component of their self-concept, the perceived norm was particularly influential on their behavioural intentions. For example, when applying this finding to smoking behaviour, if a smoker belonged to a group that was particularly important to them, and perceived that most people in the
group smoked (perceived norm), then this should strongly influence their behavioural intentions to smoke, as they feel social pressure to conform to the group norms.

Building on this, it has been suggested social identity processes imply that smoking is seldom the purpose of social interaction, but rather an outcome of the social identity process (Stewart-Knox, Sittlinton, Rugkasa, Harrisson, Treacy, & Abaunza, 2005). If this is in fact the case, Stewart-Knox et al. (2005) said smoking is unlikely to be driven by a need to comply with social pressure (for example complying with direct pressure such as persuasion), but rather is more so related to one’s desire to conform to group norms (that is, perceived or indirect group pressure such as smoking to fit in with your friends because they are smoking). To explain the theory further, it was highlighted that the SIT proposes individuals identify themselves with those who are more like themselves and adhere to groups that positively enhance their social identity (Stewart-Knox et al. 2005). Such enhancement was said to take place through either social mobility, where one chooses to belong to a group whose members most closely resemble oneself, or social change, whereby individuals make themselves more like other group members by collaborating in activities that typify the group, such as smoking (Stewart-Knox et al.). Should these processes take place and influence one’s smoking status, perhaps this is the reason why previous studies have revealed smokers particularly overestimate the number of their peers who smoke (Primack et al., 2007; Wiium et al., 2006). Furthermore, perhaps the influence of one’s social identity and the tendency for one to look to enhance their identity, can be used to explain why smokers have been found to positively view their smoking (Smith et al., 2007) despite growing evidence that it is a health risk-behaviour (Department of Health, 2008).
A study by Lennon et al. (2005) used a social identity perspective to explore personal and social factors that influence the likelihood of smoking among young women. They posited that an individual, who identifies strongly with a group as part of their self concept, is likely to adopt the defining characteristics of that group and behave consistently with in-group stereotypical and normative behaviour. They recruited women between the ages of 16 and 28 years, and conducted both focus groups and intercept interviews to determine young women’s perceptions of the personal and social dimensions of smoking. By using thematic analysis they discovered that adolescents felt smoking played a role in helping them to fit in at the crucial time of starting high school. Similarly their results revealed that smoking was also a behaviour used by young adults to fit in, however young adult respondents saw this as a result of the normative status of smoking among this age group, particularly related to the social venues they typically attended (for example, pubs and clubs). Lennon et al. explained that this result was perhaps heightened for this age group because the majority of people their age experience greater financial freedom and lowered family responsibilities, with their social life as their primary concern. Lennon et al. (2005) demonstrated findings on the social aspects of smoking, and showed smoking behaviour to be a way of meeting people and bonding through a common activity. Most of their respondents denied that their smoking behaviour was a result of peer pressure; rather they felt it was a choice made in the expectation that they would feel a sense of fitting in better when they were smoking. These findings are consistent with the SIT (Tajfel, 1982) and suggest that smoking behaviour is influenced by in-group identification; where the incidence of smoking increases when individuals perceive it to provide them with group affiliation.
A similar study on the influence of friends on smoking uptake was conducted by McLeod et al. (2008). Consistent with the SIT, they suggested that an individual’s self-concept involves membership in social groups that are important to them. Applying the theory to smoking behaviour, McLeod et al. discussed how social groups develop their own set of values, beliefs and practices that are communicated to members and non-members through symbols such as clothing, music preferences, and smoking. The similarity in the smoking behaviour of friends was explained to be a result of friends adopting the norms and behaviours of their groups’ identity (McLeod et al.). Their qualitative study on identical twins examined the perception of the role of friends in determining smoking status (McLeod et al., 2008). Both members of 14 identical twin pairs who had always been discordant for smoking status were recruited for the study. All twins were registrants of the Australian National Health and Medical Research Council Twin Registry. Using semi-structured telephone interviews with each twin member, respondents described the social context of their smoking or non-smoking experiences, and their perception of the influence of any relationships or environments on their smoking status. Through the use of thematic analysis, results from their study revealed that those who were regular smokers described smoking in terms of social mobility (McLeod et al., 2008). For example becoming a smoker provided them with a connection to the group, and was part of the package of behaviour and activities shared by smokers and their friends. Most interestingly, McLeod et al. (2008) found the most common motivation for regular smoking was that it provided a social connection to people valued by respondents. As suggested by Lennon et al. (2005) these findings may be more apparent among young adults as their social life is of particular relevance to them and
thus having a social connection to the people they respect, is of primary importance.

Therefore with these findings in mind, relevant to the current study is the question whether this social motivation encourages individuals to perceive smoking more positively or negatively based on the perceived values adopted by their significant others.

Gaps in the Research and Needs for Further Consideration

The majority of research on tobacco smoking and its link with the overestimation of smoking prevalence has used adolescents as its participants, with little research conducted on older age groups, such as young adults. Therefore, while research by Cunningham and Selby (2007), Lennon et al. (2005), and McLeod et al. (2008) demonstrate a relationship between the factors from the TPB and the SIT with adult smoking, further research on these factors and what encourages young adults to smoke would be beneficial. Further consideration in this age group is paramount as the highest prevalence of daily smoking in Australia is among young adults aged 20-29 years (AIHW, 2008), and such behaviour has been linked with long term health and social consequences (Better Health Channel, 2007; Collins & Lapsley, 2007). Australia could benefit from research in young adults smoking behaviour, as findings established could make a unique contribution to the body of knowledge in regards to the social influences of smoking behaviour, building on the evidence already gathered on adolescents, and generate public health messages.

In addition, much of the research on adolescents and smoking has measured smoking initiation, rather than continuation and progression of smoking behaviour. While smoking initiation is particularly relevant to adolescents, this is not typically the case for young adults. As has been suggested previously, by the time individuals reach young
adulthood, the majority will have already experimented and initiated their smoking behaviour, and by this point will more likely have progressed to being either a smoker or a non-smoker (AIHW, 2008; Lennon et al. 2005). Therefore, while research has indicated that smoking initiation is influenced by certain factors illustrated in the TPB and the SIT, such as normative beliefs and social mobility, few studies have managed to demonstrate that these factors also influence smoking continuation.

Furthermore, the previous studies mentioned above have been limited in their explanations of why individuals overestimate smoking prevalence among their peers and its subsequent ability to predict smoking behaviour. Therefore, a worthy path for future research could be areas such as social justification, perceived behavioural control and the role of social identity, that have been somewhat overlooked in previous research, to help further our understanding of smoking behaviour. Particular findings in these areas could provide valuable information for health policies as well as practice, and have particular implications for public health anti-smoking campaigns directed at young adults. Together these can be used towards further reducing the prevalence and associated costs of smoking in Australia by preventing initiation and encouraging cessation.

**Summary and Conclusion**

This review of the literature highlighted background information on the effects of smoking and nicotine dependence, and suggested while the short-term effects of smoking may be pleasurable (Fenando et al., 2006), a smoker’s desire to smoke frequently can lead to long-term health consequences such as disease or death. The individual and social costs of tobacco smoking as well as the publicly supported government initiatives aimed
to discourage smoking were also reviewed. These demonstrated that tobacco smoking is harmful and socially undesirable.

The current review adopted a social psychological perspective and mainly discussed the TPB (Ajzen, 1991) and SIT (Tajfel, 1982) as frameworks for plausible explanations of tobacco smoking. While it was highlighted that previous research found the discrepancy between perceived smoking prevalence and actual smoking prevalence to be a predictor of smoking initiation in adolescents (Lai et al., 2004; Nicols et al., 2006; Primack et al., 2007; Wiium et al., 2006), it was noted that little is known about the 20-29 year old age group and whether they too overestimate smoking prevalence. This latter age group is of particular interest as of all age groups, it has the highest smoking prevalence (AIHW, 2008). Finally, this review suggested that future investigations about tobacco smoking among this age group could benefit by exploring smoking maintenance rather than initiation, from a social psychological perspective.
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Journal of Applied Social Psychology

Edited by:
Andrew Baum

Print ISSN: 0021-9029
Online ISSN: 1559-1816
Frequency: Monthly
Current Volume: 38 / 2008
ISI Journal Citation Reports® Ranking: 2007: 34/47 Psychology, Social
Impact Factor: 0.657

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The Relationship between Normative Beliefs and Tobacco Smoking in Young Adults:

A Social Psychological Perspective

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Abstract

The current study explored the relationship between tobacco smoking and normative beliefs and drew on components of the Theory of Planned Behaviour (TPB) (Ajzen, 1991) and Social Identity Theory (SIT) (Tajfel, 1982) to help understand smoking behaviour in young adults. Participants were 202 undergraduate students, aged between 20 and 29 years, who completed a survey instrument which asked about beliefs and perceptions of smoking. Based on previous research with adolescents, the current study hypothesised that young adult's overestimations of smoking prevalence would be positively correlated with their smoking behaviour. Further, it was hypothesised that young adults' smoking behaviour would be congruent with the principles of both the TPB and SIT. An additional research question asked whether social identity could predict smoking behaviours in young adults. The results identified three predictors of smoking status in young adults, namely social identity, perceived behavioural control (PBC) and personal attitudes toward smoking. There are several implications of the findings with regards to policy and legislations on tobacco use, as well as health promotion campaigns. Recommendations for future research are considered.

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The Relationship between Normative Beliefs and Tobacco Smoking in Young Adults:
A Social Psychological Perspective

Tobacco smoking has been classified as the single most preventable cause of death and disease in Australia (Australian Institute of Health and Welfare (AIHW), 2000; Ryder, Salmon, & Walker, 2001; World Health Organization, (WHO), 2004), with an estimation of 19,000 Australians dying each year as a result of smoking tobacco (WHO, 2004). In Australia, young adults between the ages of 20 and 29 years have the highest level of smoking prevalence, with 21.4% of this age group smoking daily (AIHW, 2008).

The study of the mechanisms by which young adults adopt and maintain smoking behaviour is therefore of public health significance. Despite there being considerable evidence to support the association between tobacco smoking and numerous diseases (AIHW, 2000; Britton & Edwards, 2008; Ruscio, 2006), people continue to smoke.

It is beyond the scope of the current study to offer a comprehensive review of the numerous factors considered as explanations for why people initiate and maintain tobacco smoking. Such factors include stress or anxiety relief, pleasure, social pressure, dependence, and associations or habits. The interested reader can see, for example, the following sources; Carmody, Vietan, and Astin (2007), Chinese Australian Tobacco and Health Network (2004), Fernando, Wellman, and DiFranza, (2006), Hu, Davies, and Kandel (2006), Palin and Beatty (2000), QuitWA (2008), and Think Quit (2007). Social psychological theories offer plausible explanations for smoking behaviour (Bell, Ellickson, & Harrison, 1993; Botvin & Eng, 1982; Coombs, Santana, & Fawzy, 1984; Oostveen, Knibbe, & De Vries, 1996; Scheier, Botvin, & Baker, 1997; Wilks, 1988) and these provided the focus for the current study. Specifically, the Theory of Planned
Behaviour (TPB) (Ajzen, 1991) and Social Identity Theory (SIT) (Tajfel, 1982) have been harnessed in the current study to further our understanding of smoking behaviour. As will be shown, social identity and aspects of TPB offer explanations as well as predictions about tobacco smoking.

**Theory of Planned Behaviour and Tobacco Smoking**

The TPB (Ajzen, 1991) has been used to explain smoking behaviour (Cunningham & Selby, 2007; Falomir & Invernizzi, 1999; Lai, Ho, & Lam, 2004; Nicols, Birnbaum, Birnel, & Botvin, 2006; Primack, Switzer, & Dalton, 2007; Wiium, Torsheim, & Wold, 2006). The theory’s notion is an individual’s behaviour is mediated by a two-step process in which three factors (attitude, subjective norm, and perceived behavioural control) combine to influence intent, and intent then determines behaviour (Ajzen, 1991). In the context of TPB, one’s attitude is explained to involve the evaluation of likely behavioural consequences (Ajzen, 2002). In the case of smoking, the theory would thus imply the intent of an individual to smoke is influenced by how they feel about the consequences of smoking. For example, an individual may believe that smoking aids relaxation and therefore has a relatively positive attitude towards smoking. According to the theory, this positive attitude would indicate one’s intent to smoke.

Previous studies lend support to the influence of personal attitude on smoking behaviour (Primack et al., 2007; Wiium et al., 2006; Van De Ven, Engels, Otten, & Van Den Eijnden, 2007; Van Zundert, Engels, & Van Den Eijnden, 2006). For example, studies have revealed adolescents who have a positive attitude towards smoking are likely to initiate smoking (Primack et al., 2007; Wiium et al., 2006; Van De Ven et al., 2007; Van Zundert et al., 2006). Similarly, Smith, Bean, Mitchell, Speizer, and Fries (2007)
established those who had a more favourable attitude to remain tobacco free, were less likely to try smoking.

The normative component of the TPB, otherwise known as subjective norm, is made up of an individual’s normative beliefs and their motivation to comply with others. It refers to one’s perception of the extent to which significant others think they should perform the behaviour (Ajzen, 2002; Ajzen & Manstead, 2007). For example, if an individual perceives that their friends see smoking as positive (this perception may be inferred simply from observing them participate in the behaviour), and the individual is motivated to meet the expectations of their friends, they will thus adopt a positive subjective norm, which would increase the likelihood of them smoking.

Existing evidence has demonstrated the predictive power of normative beliefs in adolescent smoking initiation (Lai et al., 2004; Nicols et al., 2006; Primack et al., 2007; Smith et al., 2007; Van De Ven et al., 2007; Van Zundert et al., 2006; Wiium et al., 2006). Specifically, the overestimation of smoking prevalence by adolescents has been shown to be related to subsequent smoking behaviour (Lai et al.; Nicols et al.; Primack et al.; Wiium et al.). For example, one study revealed adolescents who perceived many students from their class smoked, were at greater risk of initiating smoking (Wiium et al., 2006). Similarly, another study demonstrated adolescents who overestimated smoking prevalence in the general population were more likely to initiate smoking (Primack et al., 2007). Moreover, studies have found normative expectations are predictive of adolescent smoking initiation. These studies suggest adolescents are influenced by their perceptions of what their friends think they should do, as well as their perceptions of what their significant aged peers are doing (Primack et al.; Smith et al., 2007; Wiium et al.). Whilst
these studies measured adolescent smoking initiation, they highlight the importance of normative beliefs on smoking behaviour and therefore it is possible that these findings are applicable to other current smokers, regardless of age.

Lastly, the TPB states that perceived behavioural control (PBC) is fundamental to actual behaviour. It involves an individual’s perception of the ease or difficulty of performing the behaviour (actual control) and their perception about the presence of factors which may help to impede or facilitate performance of the behaviour (control beliefs) (Ajzen, 2002). A high level of perceived control is considered to strengthen a person’s intention to perform the behaviour, and therefore increases effort and perseverance (Ajzen; Ajzen & Manstead, 2007). For example, a smoker may feel as though quitting smoking is difficult, and the belief that he or she is dependent is hindering them from quitting successfully. Therefore, since quitting is perceived out of his or her actual control, he or she is less likely to put sufficient energy into quitting, which would directly affect his or her behaviour. The TPB suggests further to intent, PBC can direct and predict behaviour (Ajzen). Support for the influence of PBC on smoking behaviour has been documented (Smith et al., 2007; Van De Ven, 2007; Van Zundert et al., 2006). For example, a study by Smith et al. found adolescents perceiving quitting smoking as difficult (if initiated) was associated with decreased likelihood of intentions to try smoking in the future. Summarising their findings on PBC, Smith et al. proposed having positive perceived levels of control to quit, may augment intentions to experiment among youth not already using tobacco.

Whilst the majority of studies on smoking have focussed on smoking initiation, Van Zundert et al. (2006) investigated adolescent smoking continuation and progression
in terms of the motivational processes involved. Using a three-wave longitudinal design, results revealed adolescents who had experimented with smoking, or had recently taken up smoking, and perceived a positive social norm regarding smoking at time one, were significantly more likely to have increased their levels of smoking six months later. Moreover, they found positive attitudes, as well as low self-efficacy to resist smoking at time one, were predictive of progression in smoking one year later. These findings are consistent with that of previous studies conducted on smoking initiation and the factors of the TPB (Smith et al., 2007; Primack et al., 2007; Wiium et al. 2006). While these findings demonstrate influences of adolescent smoking continuation, they may also be applicable to young adults, as smokers in this age group are more likely to be continuing their smoking behaviour, than initiating it (AIHW, 2008).

Furthermore, despite smoking prevalence in Australia being highest amongst young adults aged 20 to 29 years (AIHW, 2008); most of the research on the TPB and smoking has involved adolescents. One study, however, conducted by Cunningham and Selby (2007) utilised a range of adults, aged 19 years plus and measured respondents’ estimates of the prevalence of smoking compared to the actual level of smoking. Results revealed more than half of the smokers, regardless of their age, overestimated by 20% or more the proportion of people their own age and gender who smoked. Moreover, younger smokers were shown to be more likely to overestimate smoking prevalence than older smokers, and also overestimated prevalence to a greater degree than older smokers. Cunningham and Selby suggested this finding could be the outcome of young adults’ heightened exposure to smoking due to their social surroundings. Whilst there was no control group of non-smokers to compare perceptions with, Cunningham and Selby’s
results demonstrated that a wide range of age groups have distorted normative perceptions with regards to tobacco smoking. Their findings thus encourage further research into the influence of normative perceptions on young adults’ smoking status.

Social Identity Theory and Tobacco Smoking

The SIT (Tajfel, 1982) has the capacity to explain the findings of the relationship between normative perceptions and tobacco smoking (Falomir & Invernizzi, 1999; Lennon, Gallois, Owen, & McDermott, 2005; McLeod, White, Mullins, Davey, Wakefield, & Hill, 2008; Terry, Hogg, & White, 1999). The theory’s underlying assumption is people want identities that are both positive and distinct, and will therefore strive to achieve a positive social identity, and take the appropriate steps to improve the situation if they feel they have an unsatisfactory one (Olds, Thombs, & Tomasek, 2005).

The SIT can be used to determine the tendency of individuals to act in terms of their group membership (Falomir & Invernizzi, 1999). Such behaviour was explained to depend on the extent to which an individual defines themselves in terms of their self-inclusive social category (Falomir & Invernizzi, 1999; Terry et al., 1999). Taking smoking behaviour for example, according to the theory, smokers who identify themselves as members of their social group based on their smoking behaviour will be more likely to continue smoking in order to maintain membership within the group and achieve a sense of belonging.

Building on this, it has been suggested social identity processes imply that smoking is seldom the purpose of social interaction, but rather an outcome of the social identity process (Stewart-Knox, Sittlinton, Rugkasa, Harrisson, Treacy, & Abaunza, 2005). If this is in fact the case, Stewart-Knox et al. (2005) said smoking is unlikely to be
driven by a need to comply with social pressure (for example complying with direct pressure such as persuasion), but rather is more so related to one’s desire to conform to group norms (that is, perceived or indirect group pressure such as smoking to fit in with friends because they are smoking, not because they are telling you to). Previous studies lend support to this notion (Lennon et al., 2005; McLeod et al, 2008; Terry et al., 1999). For instance, Lennon et al. (2005) found smoking was adopted as a way of helping people to fit in. In particular, their study revealed smoking was a choice individuals made in the expectation that they would feel a sense of belonging when they were smoking (Lennon et al.). Findings from McLeod et al. (2008) added to this, suggesting that becoming a smoker provided individuals’ with a connection to the group (sense of belonging).

Similarly, it has been suggested social identities should influence behaviour through the mediating role of group norms, where people are more likely to engage in a particular behaviour if it is in accord with the norms of a behaviourally relevant group membership (McLeod et al., 2008; Stewart-Knox et al., 2005; Terry et al., 1999). Therefore, if an individual identifies themself as belonging to a group of smokers, and perceives that smoking is a symbol of their membership in the group they would be influenced to continue this behaviour (McLeod et al.). For example, McLeod et al. demonstrated smoking as one of a collection of behaviours and activities shared by smokers and their friends, which was part of the scene in which they socialised.

Moreover, the SIT has been said to assume that individuals are motivated to achieve a positive social identity through group enhancement (Falomir & Invernizzi, 1999; Stewart-Knox et al., 2005). Therefore, individuals are seen to naturally evaluate
their own group members more positively than those belonging to an out-group. Such enhancement is said to take place through either social mobility, where one chooses to belong to a group whose members most closely resemble oneself, or social change, whereby individuals make themselves more like other group members by collaborating in activities, such as smoking, that typify the group (Stewart-Knox et al.). This proposed need for social identity and in-group behavioural congruence may explain previous findings that have revealed smokers particularly overestimate the number of their peers who smoke (Cunningham & Selby, 2007; Primack et al., 2007; Wiium et al., 2006). Furthermore, perhaps the influence of one’s social identity and the tendency for one to look to enhance their identity can be used to explain why smokers have been found to positively view their smoking (Smith et al., 2007) despite growing evidence that it is a health risk-behaviour (Department of Health, 2008; Ruscio, 2006).

Both the TPB (Ajzen, 1991) and SIT (Tajfel, 1982) can thus be harnessed to further understand smoking behaviour and the apparent discrepancy in prevalence estimations. The TPB would suggest that exaggerating the perception of smoking prevalence among role models and friends, as well as perceiving low behavioural control, holding positive views of smoking, and perceiving significant others’ views as positive, would all act as both justification and motivation for smoking behaviour. As for the SIT, it would suggest that smoking behaviour is influenced by in-group identification; whereby smokers view themselves as in-group members with other smokers. Therefore, knowing that smoking is unhealthy, smokers may find justification for their behaviour by exaggerating their perception of the prevalence rate thus rendering it normal behaviour practiced by an in-group majority.
The Current Study

As was suggested previously, the majority of research on tobacco smoking and its normative influences has examined smoking initiation and used adolescents as participants, with little research conducted on older age groups, such as young adults. Therefore, while the highest prevalence of daily smoking in Australia is among young adults aged 20 to 29 years (AIHW, 2008) little is known about what encourages them to continue smoking, and whether the factors from the TPB (Ajzen, 1991) and SIT (Tajfel, 1982) have a relationship with smoking among this age group. The current study addressed these gaps by examining smoking behaviour among young adults aged 20 to 29 years.

The aim of the current study was to investigate the normative beliefs of people between the ages of 20 and 29 years, and their association with smoking status. Since adolescents and young adults are at different developmental stages in their lives (Peterson, 2004) it was possible that results in the current study could vary from previous findings on adolescents. Based on the previous research mentioned above, however, the current study measured normative beliefs involving smoking in three distinct ways following the principles of the TPB. That is, perception of smoking prevalence among peers, perceived approval/disapproval of smoking by peers and parents, and perception of successful and elite people smoking. Furthermore, the current study defined a smoker as anyone who smoked daily, weekly or less-than-weekly. Specifically, the definition of a less-than-weekly smoker did not include individuals who had smoked one cigarette at some stage in their life; rather it included those that smoke regularly, for example fortnightly, monthly or less-than-monthly.
Five hypotheses and one research question were posed in the current study. The hypotheses posed were: (1) the more positive young adults' feel towards smoking; the more likely it is that they would smoke. (2) The more positively young adults' perceive their family, friends and peers view smoking, the more likely they would be to smoke. (3) The less control young adults' perceive they have over their smoking, the more likely it is that they would smoke. (4) The greater the degree that young adults' perceive successful and elite people smoke, the more likely it is that they would smoke. (5) Greater overestimation of the prevalence of smoking among peers would be related with more smoking behaviour. The current study poses one research question, what is the relationship between smoking status and social identity in young adults?

Method

Design

The current research utilised a quantitative cross-sectional survey design to investigate the relationship between smoking behaviour, normative beliefs, social identity and TPB factors among young adults aged 20 to 29 years and to identify predictors of smoking behaviour within this age group. These were achieved via assessing the correlations between variables and conducting a multiple regression analysis with self-reported smoking behaviour as the criterion variable.

The dependent variables that were correlated, and also used as predictors in the multiple regression analysis, were: overestimation among peers, overestimation among successful and elite, personal attitude, perceived family attitude, perceived friends attitude, perceived peer attitude, social identity, and perceived behavioural control.
Participants

The participants were undergraduate students, recruited across the Faculty of Computing Health and Science (CHS) at Edith Cowan University in Western Australia. This included students from Psychology, Human Biology, Engineering, Nursing, Addiction Studies, and Sports Science. Participation was voluntary and no payments were offered. A total of 339 students completed the survey. Of these students, 202 were aged between 20 and 29 years ($M = 22.35$, $SD = 2.59$) and therefore were considered the eligible participants for the study. Of these 202, there were 77 males (mean age = 22.73, $SD = 2.79$) and 125 females (mean age = 22.12, $SD = 2.43$). The survey was completed by 45 smokers of which 21 smoked daily, nine smoked weekly, and fifteen smoked less than weekly. There were 138 participants who had never smoked and nineteen ex-smokers.

Materials

The materials used for the current study included a survey and information letter which were used during the pilot stage of survey development, as well as the refined survey (Appendix A) and information letter (Appendix B) which were provided to the survey participants. In particular, the survey asked participants to answer whether they agreed, somewhat agreed, somewhat disagreed, or disagreed to statements such as "I view smoking positively" and "my friends view smoking positively."

Procedure

Having obtained ethics approval from the Research Ethics Committee of CHS and gaining the cooperation of the unit coordinator, first year psychology students were approached at the beginning of a lecture and asked to review and complete the survey.
Participation was voluntary. The survey was pilot tested with 129 psychology students, ranging in age from 17 to 57 (mean age = 23.42). Participants’ feedback on relevance (face validity), length, clarity, ease of understanding, and time to complete the survey were requested. Following the pilot stage, the first two items were changed by removing the percentage examples to reduce biases in responding. Further, item eight was reworded for clarity, and item eleven was reverse coded, as higher scores on it reflected the opposite direction to the rest of the items. Overall, participants commented that the survey was easy to understand, relevant to the topic, appropriate in length and adequate in time.

Following the piloting, refinement of the survey and obtaining the approvals of relevant heads of schools and unit coordinators, participants were approached in their lectures during the third and fourth weeks of their second semester at university. They were told briefly about the study and their voluntary participation was kindly requested. Information letters (Appendix B) and surveys (Appendix A) were handed out to every student in the lecture, and those wishing to participate were asked to complete the survey in their own time and return completed surveys by placing them in a box that was set up for that purpose in their schools’ main office. A total of 455 surveys were distributed. The participants were asked to provide demographic information such as gender, age and smoking status, and asked questions based on their beliefs and perceptions of smoking (Appendix A).

One week after the handing out of surveys the researcher visited the students again in their lecture to thank those who completed the survey for doing so, and remind those who were interested in participating but had not yet done so, where they could hand
Young Adults and Tobacco Smoking

their survey in. The researcher also offered surveys to those students who may have misplaced theirs or did not receive one initially. Having allowed about four weeks for data collection, survey boxes were collected at the end of week seven and a total number of 339 surveys had been completed. This gave a response rate of 74.5%. Of the 339 completed surveys, 202 were from students aged between 20 and 29 years. These students were considered the eligible participants for the current study. Data drawn from these participants were then entered into the statistical package for social sciences (SPSS version 14) and were analysed using bivariate correlations and multiple regression analysis.

Results

Prior to conducting the formal analyses, data screening was performed. Surveys were screened for any missing data prior to data entry and missing values were assessed following data entry. With the use of a $p < .001$ criterion for Mahalanobis distance, four multivariate outliers were detected. As this constituted less than 5% of the cases it was decided to keep them for analysis. Univariate outliers were assessed according to the 3 SD above and below the mean criterion. Three were identified for the dependent variable perceived family attitude towards smoking and three were found for the variable personal attitude toward smoking. These were adjusted and replaced by the highest value available according to the 3 SD criterion in their relevant direction. Whilst positive skewness was detected, following Tabachnick and Fidell (1996), the assumption of normality was deemed satisfactory because the sample size of 202 with eight dependent variables rendered the analysis robust.
Descriptive Statistics

Table 1.

Mean Scores and Standard Deviation for factors Overestimation, Successful and Elite, Personal Attitude, Perceived Family Attitude, Perceived Friends Attitude, Perceived Peers Attitude, Social Identity and Perceived Behavioural Control.

<table>
<thead>
<tr>
<th></th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
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<tr>
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<td>31.00</td>
<td>22.60</td>
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<tr>
<td>Personal</td>
<td>1.36</td>
<td>.66</td>
</tr>
<tr>
<td>Family</td>
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<td>.74</td>
</tr>
<tr>
<td>Friends</td>
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<td>.75</td>
</tr>
<tr>
<td>Peers</td>
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<td>.67</td>
</tr>
<tr>
<td>Social ID</td>
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<td>.88</td>
</tr>
<tr>
<td>PBC</td>
<td>3.47</td>
<td>.96</td>
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</table>

Analyses

A standard multiple regression was performed to test the hypotheses. Smoking status was set as the criterion variable. The predictor variables were: (1) Overestimation among peers (Overestimation). (2) Overestimation among the successful and elite (SuccElite). (3) Personal attitude (Personal). (4) Perceived family attitude (Family). (5) Perceived friends attitude (Friends). (6) Perceived peer attitude (Peers). (7) Social identity (Social ID). (8) Perceived behavioural control (PBC).

The multiple regression (Step 1) was significantly different from zero, \(F(8, 193) = 71.31, p< .01\). The Adjusted R Squared showed that the combination of all eight predictor variables predicted 74% of the variance in the criterion variable
Three of the predictor variables, personal attitude \( (B = .441, SE = .111, p < .01) \), social identity \( (B = .964, SE = .076, p < .01) \), and perceived behavioural control \( (B = -.214, SE = .060, p < .01) \), made a significant contribution to predicting smoking status. None of the other predictor variables had a significant contribution in predicting the criterion variable.

The regression analysis was run a second time using only the significant predictor variables of personal attitude, social identity and perceived behavioural control (Step 2). The multiple correlation was significantly different from zero, \( (F (3, 198) = 191.504, p < .01) \). The Adjusted R Squared showed that the combination of the three predictor variables, predicted 74% of the variance in the criterion variable \( (R^2 = .74) \). Each of the three predictors made a unique contribution. The analysis showed that, for the current set of data, the minimum number of predictors required for predicting smoking status is three. These are personal attitude, social identity and perceived behavioural control.

From these results a regression equation was formulated. The regression equation is: \( Y' = b_1X_1 + b_2X_2 + b_3X_3 + \text{Constant} \). Therefore, smoking status = 0.436 (Personal) + 0.986 (SIT) - 0.217 (PBC) + 0.522
Table 2.

*Predictors of Smoking Status among Young Adults*

<table>
<thead>
<tr>
<th>Variable</th>
<th>$B$</th>
<th>$SE B$</th>
<th>$\beta$</th>
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</thead>
<tbody>
<tr>
<td><strong>Step 1</strong></td>
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<tr>
<td>Constant</td>
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</tr>
<tr>
<td>Overestimation</td>
<td>-.003</td>
<td>.003</td>
<td>-.050</td>
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<tr>
<td>SuccElite</td>
<td>.003</td>
<td>.003</td>
<td>.048</td>
</tr>
<tr>
<td>Personal</td>
<td>.441</td>
<td>.111</td>
<td>.202*</td>
</tr>
<tr>
<td>Family</td>
<td>-.048</td>
<td>.077</td>
<td>-.025</td>
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<tr>
<td>Friends</td>
<td>.090</td>
<td>.078</td>
<td>.049</td>
</tr>
<tr>
<td>Peers</td>
<td>-.086</td>
<td>.084</td>
<td>-.043</td>
</tr>
<tr>
<td>Social ID</td>
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<td>.076</td>
<td>.626*</td>
</tr>
<tr>
<td>PBC</td>
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<td>.060</td>
<td>-.152*</td>
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</tr>
<tr>
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</tr>
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<td>.436</td>
<td>.095</td>
<td>.199*</td>
</tr>
<tr>
<td>Social ID</td>
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<td>.641*</td>
</tr>
<tr>
<td>PBC</td>
<td>-.217</td>
<td>.060</td>
<td>-.154*</td>
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</tbody>
</table>

Note $R^2 = .737$ for Step 1; $\Delta R^2 = .738$ for Step 2. * $p < .001$

To further investigate the relationships between variables, bivariate correlation analyses were performed among all the DVs. There were numerous significant correlations demonstrated. The correlation coefficients are presented in Table 3 on the following page.
Table 3.

Correlation Coefficients for the Variables Overestimation, Successful & Elite, Personal Attitude, Family Attitude, Friends Attitude, Peers Attitude, Social ID, PBC, and Smoking Status.

<table>
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<th>7.</th>
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<th>9.</th>
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<td>Overestimation</td>
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<td>2.</td>
<td>.576**</td>
<td>-</td>
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<td>SuccElite</td>
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<td>3.</td>
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<td>.039</td>
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<td>5.</td>
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<td>.434**</td>
<td>.216**</td>
<td>-</td>
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<tr>
<td>Friends</td>
<td></td>
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<tr>
<td>6.</td>
<td>.340**</td>
<td>.207**</td>
<td>.138</td>
<td>.223**</td>
<td>.373**</td>
<td>-</td>
<td></td>
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<tr>
<td>7.</td>
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<td>.038</td>
<td>.560**</td>
<td>.081</td>
<td>.182**</td>
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<tr>
<td>Social ID</td>
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<tr>
<td>8.</td>
<td>.009</td>
<td>-.015</td>
<td>-.336**</td>
<td>.012</td>
<td>-.150*</td>
<td>.000</td>
<td>-.527**</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>PBC</td>
<td></td>
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<tr>
<td>9.</td>
<td>-.074</td>
<td>.048</td>
<td>.610**</td>
<td>.094</td>
<td>.250**</td>
<td>-.027</td>
<td>.834**</td>
<td>-.558**</td>
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<tr>
<td>Smoking Status</td>
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<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>p&lt; .05; **p&lt; .01</td>
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</table>

Discussion

The first, second and third hypotheses were supported by the results. The fourth and fifth hypotheses were not. The first hypothesis, that predicted the more positive participants feel towards smoking, the more likely it is that they would smoke was supported by the results with personal attitude shown to be a significant predictor of smoking status. As can be seen in Table 3, a significant moderate correlation between personal attitude and smoking status indicated that the more positive an individual's attitude is towards smoking the more likely it is that they would be a daily smoker. These
findings are in accord with the TPB (Ajzen, 2002; Ajzen & Manstead, 2007). This finding is consistent with previous studies conducted by Smith et al. (2007), Van Zundert et al. (2006), and Wiium et al. (2006) who demonstrated having a more positive attitude towards smoking was related to smoking behaviour.

Mediated by personal beliefs about smoking, the prediction that the more positively participants perceive their family, friends and peers view smoking, the more likely they would be to smoke, was supported by the results. That is, in accord with the TPB (Ajzen, 1991), family, friends and peers influence personal attitudes, which in turn produce behavioural tendencies. As can be seen in Table 3, the results revealed significant, albeit low, correlations between personal attitude with family, friends and peers attitude, suggesting that young adults personal attitude about smoking is related to their perceptions of what their family, friends and peers think about smoking. Therefore, whilst perceptions of family, friends and peers views on smoking were not found to be predictive of smoking status in young adults, they influence the development of one’s personal attitudes towards smoking, which was found to be a predictor of smoking. This finding would imply that while young adults ultimately make smoking choices based on their own opinions, they still value the opinions of their friends and family, and will consider their views when deciding on their own personal perspective.

The results of the current study showed support for the third hypothesis that predicted that the less control participants perceive they have over smoking the more likely it is that they would smoke. PBC was shown to be a significant predictor of smoking status. In particular, the significantly moderate, negative correlation between PBC and smoking status (see Table 3.) implies the less control people perceived they had
over their smoking the more likely it was that they would be a daily smoker. This finding is consistent with the TPB, which suggests that PBC can directly influence behaviour (Ajzen, 1991; Ajzen, 2002) and is similar to the findings by Van Zundert et al. (2006), who reported that low self-efficacy to resist smoking in adolescents was predictive of smoking progression over time. This finding could be the direct result of nicotine dependence whereby individuals who perceive quitting smoking to be out of their actual control, therefore continue to smoke. By contrast, participants who were non-smokers reported high levels of perceived personal control over smoking.

Further support for hypothesis three can be seen in the significant moderate negative correlation (see Table 3) between social identity and PBC. This suggests the more an individual identifies themselves as in-group with other smokers the less control they perceive they have over their own smoking. Such a finding could be a result of the smoking cues that many young adults are presented with in social situations. For example, it has been suggested that the typical social venues attended by young adults become associated with cues for the direct actions of nicotine in tobacco, which can be pleasurable in themselves or can become a trigger for lighting up a cigarette (Benowitz, Fredericks, & Covey, 2001; Fernando et al., 2006; Hatsukami, Stead, & Gupta, 2008; Lennon et al., 2005). Being presented with these social cues may cause a smoker to feel as though their control of smoking (i.e. their ability to abstain from smoking in these situations) is limited. Furthermore, individuals that identify themselves as belonging to a group of smokers are likely to socialise with other smokers. Therefore they may be consistently exposing themselves to the behaviour, which would in turn affect their
perceived ability to quit, as they are constantly reminded of the behaviour within the social context.

A significant, albeit low, negative correlation (see Table 3) was found between personal attitude and PBC. This suggests the more positive an individual rates smoking, the less control they perceive they have over their smoking. This finding may be the result of nicotine dependence whereby an individual feels positive towards smoking due to the pleasurable effects of nicotine, yet also feels limited in their control of smoking due to their need to smoke frequently to enjoy these effects (Benowitz et al., 2001; Fernando et al., 2006; Shiffman et al., 2006).

The results of the current study did not support the fourth and fifth hypotheses. That is, the greater the degree that participants perceive successful and elite people smoke, the more likely it is that they would smoke (hypothesis four), and the greater the overestimation of the prevalence of smoking among peers would be related with more smoking behaviour (hypothesis five). As these hypotheses were based on previous research that was done with adolescents, the lack of support for these hypotheses may be a reflection of the different developmental stages of adolescents and the young adults who participated in the current study. It has been suggested that peer relationships and role models are far more important in adolescence than at any other stage of life (Peterson, 2004). During this transition phase from childhood to adulthood, adolescents commonly rely on their role models and peers for guidance and support. Furthermore, by the time individuals have reached adulthood they are expected to have formed their own sense of identity, valuing their individuality, and thus are more likely to make decisions independently (Peterson).
Whilst some of the findings of the current study are in discord with previous research on adolescents regarding the overestimation phenomenon among peers and the successful and elite (Lai et al., 2004; Nicols et al., 2006; Primack et al. 2007; Wiium et al. 2006), there was a significant moderate correlation amongst these variables (see Table 3). This finding would suggest the more an individual overestimates smoking among their peers, the more likely it is they will overestimate smoking among the successful and elite. Furthermore, a low significant correlation between overestimation among peers and perceived peer attitude was found (see Table 3), indicating the more an individual overestimates prevalence among their peers, the more positive they will perceive their peers to rate smoking. These findings support the idea that adolescents place greater emphasis on their peers, whereby previous studies showed greater significance for overestimations of smoking prevalence as a predictor of smoking status for that age group (Lai et al., 2004; Nicols et al., 2006; Primack et al. 2007; Wiium et al. 2006).

As for the research question that asked what the relationship between smoking status and social identity was, the results offered interesting and significant answers. Social identity was shown to be predictive of smoking status and a strong significant correlation between social identity and smoking status (see Table 3) was found. This implied that the more an individual identifies themself as in-group with other smokers, the more likely it is they would be a daily smoker. This is in accord with SIT (Tajfel, 1982), which suggests social groups develop their own set of values, beliefs and practices that are conveyed to group members and non-members by symbols such as smoking (McLeod et al., 2008). This finding supports McLeod et al. who found smoking to be part of the behavioural repertoire shared by smokers and their friends in their social context.
This finding could be related to the typical social venues in which young adults attend, for example pubs and nightclubs (Lennon et al., 2005). Additionally, as most people aged 20-29 years enjoy relative financial freedom and lowered family responsibilities, this finding may reflect the emphasis placed on their social life where their exposure to smoking is particularly heightened (Lennon et al.).

The current study found a significant moderate correlation between personal attitude and social identity (see Table 3), suggesting that the more positive an individual views smoking, the more they will identify themselves as in-group with other smokers. This finding is congruent with SIT and its notion that people will favour in-group over out-group behaviour, in order to enhance their group and maintain their positive identity (Tajfel, 1982; Terry et al., 1999). It also lends support to Van Zundert et al. (2006) who found that positive attitudes and pro-smoking social norms were significantly related to progression in smoking.

Limitations and Strengths of the Current Study

One limitation of the current study was the representativeness of its sample. While the utilisation of university students was cost and time effective they are not a random representative sample of the 20-29 year old age group in Australia. This places a limitation on the generalisability of the results. Future research could address this limitation by gathering data from random representative samples of this age group nationwide.

Whilst limited in generalisability, the current study employed a faculty-wide sample of undergraduate students. This allowed for various lifestyles and areas of interest
to be represented in the sample. For example, sedentary computer science students, physically active sport science students, engineering and psychology students.

The sample size of the current study was appropriate for its design and analyses and a survey instrument was especially developed, piloted and refined. The execution of the current study involved careful planning and liaising with heads of schools, unit coordinators, administrative officers and students. Care was taken to facilitate ease for respondents in terms of allowing them to complete the survey in their own time and by placing data collection stations in their respective schools’ offices.

Future Considerations

As the current study identified social identity and perceived behavioural control as predictors of smoking status in young adults, further research on these factors is warranted. For example, future research could focus on the social cues of smoking, as well as self-efficacy related to quitting smoking in order to further understanding of the influence of social context on smoking behaviour.

Future research could also benefit by utilising an additional qualitative element to supplement the data collected and analysed quantitatively. A mixed design has the ability to complement data obtained through a quantitative design. Moreover, as the current study adopted a correlational design, no causal effect can be inferred from the results. Therefore future research may also benefit by employing longitudinal and experimental designs to determine the influence of the TPB (Ajzen, 1991) and SIT (Tajfel, 1982) factors on smoking continuation over time.
Implications

As the current study demonstrated that perceived behavioural control is a predictor of smoking status among young adults aged 20-29 years, it therefore has implications for cessation programs improving perceived behavioural control by teaching techniques to increase self-efficacy. In addition, the finding that a young adult's social identity can significantly predict whether they smoke or not has implications for policy and legislations on tobacco smoking. Although public smoking in nightclubs and pubs is becoming more ostracised due to the recent legislations restricting use at these venues (Ministerial Council on Drug Strategy, 2004), the findings from the current study suggest that young adults are particularly affected by their social surroundings. Thus, further restrictions on the smoking of tobacco should be considered in order to reduce smoking cues presented to young adults in social venues, as well as reduce passive smoking. Moreover, these findings highlight the need for health promotion campaigns aimed at young adults to encourage attitude changes about smoking.

Given the current study demonstrated a relationship between social identity and perceived behavioural control, and suggested this could be the result of nicotine dependence and social smoking cues; it therefore has implications regarding the increase of young adults' awareness of resources available to combat dependence. Additionally, these findings encourage the increased provision of support services available to young adult smokers' which could help them to effectively manage their social smoking behaviour.

Policies, campaigns and legislations attempting to reduce smoking behaviour should consider the relationship between personal attitude, social identity and PBC that
have all been found to be significantly implicated in smoking behaviour in the current study. Specifically, the desire to reduce smoking should be perceived by people as representative of society and not as a top down prohibitive approach. This is because a top down approach will likely make people feel that their in-group as well as their own personal freedom are threatened, which would likely hinder the success of anti-smoking campaigns. Congruent with the results of the current study, as long as people perceive negative attitudes toward smoking by their family, friends and peers, they are likely to adopt negative attitudes toward smoking themselves. To the extent that individuals perceive other people having control over smoking, they are likely to believe that they too should have similar control.

The current study identified three predictors of smoking status and these should be further tested for their reliability. Following the results of the current study, it is suggested that using the survey instrument developed to collect data on social identity, personal attitude toward smoking and perceived behavioural control, smoking status could be predicted. This could be particularly useful as a preventative measure because, if the current equation proves reliable, it could be used to identify people at risk of smoking so that relevant interventions could be considered.

Conclusion

The current study explored the relationship between tobacco smoking and normative beliefs and drew on components of the Theory of Planned Behaviour (TPB) (Ajzen, 1991) and Social Identity Theory (SIT) (Tajfel, 1982) to help understand smoking behaviour in young adults. The results demonstrated various significant correlations and three predictors of smoking status, namely personal attitude, social
identity and perceived behavioural control. These findings showed support for three of
the study’s hypotheses and provided interesting results related to the research question on
social identity. Explanations for the study’s results such as nicotine dependence and
social cues were offered and implications of the findings were discussed. The current
study also explored considerations for future research, suggesting focus on social identity
and perceived behavioural control is warranted, particularly in relation to further
understanding of young adults’ smoking behaviour in the social context.
References


Appendix A

Please complete the following items providing your own personal views and not what may seem conventional or politically correct.

1. In your personal opinion what is the percentage of people, between the ages of 20 and 29, who smoke at least once per day? Please provide a percentage: _________.

2. In your personal opinion what is the percentage of successful and elite people who smoke at least once per day? Please provide a percentage: _________.

Please indicate, by circling ONE number only, the extent to which you agree with the following statements:

3. I view smoking positively.

   1. Totally Disagree  
   2. Somewhat Disagree  
   3. Somewhat Agree  
   4. Totally Agree

4. My family (including partner) view smoking positively.

   1. Totally Disagree  
   2. Somewhat Disagree  
   3. Somewhat Agree  
   4. Totally Agree

5. My friends view smoking positively.

   1. Totally Disagree  
   2. Somewhat Disagree  
   3. Somewhat Agree  
   4. Totally Agree

6. In general, other people my age view smoking positively.

   1. Totally Disagree  
   2. Somewhat Disagree  
   3. Somewhat Agree  
   4. Totally Agree

7. I identify myself as a part of the group of smokers within broader society.

   1. Totally Disagree  
   2. Somewhat Disagree  
   3. Somewhat Agree  
   4. Totally Agree

8. I have total control over my smoking.

   1. Totally Disagree  
   2. Somewhat Disagree  
   3. Somewhat Agree  
   4. Totally Agree
Demographics

9. Age

What was your age in years at your last birthday? ________

10. Gender

Are you a male or female? ________

11. Smoking Status

Please indicate, by circling ONE number only, the smoking status which best fits your own.

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</table>

*Never smoked*- never smoked 100 cigarettes or the equivalent in tobacco in your life.

*Ex smoker*- smoked at least 100 cigarettes or the equivalent in tobacco in your life, but no longer smoke.

*Less than Weekly Smoker*- smoke cigarettes fortnightly, monthly, or less than monthly BUT NOT WEEKLY.
Dear Student,

As part of my research for my Honours degree in Psychology at Edith Cowan University, I am studying young adults' smoking status and beliefs. Results from this study will build on existing knowledge of tobacco smoking and may also provide some useful public health insights. This research has been approved by ECU’s Faculty of Computing, Health and Science Human Research Ethics Subcommittee.

Your participation is kindly requested for this study. The survey will take between 2 to 5 minutes to complete and participation is voluntary. I hope you will participate, but if you do not want to, you do not need to explain why to anyone. Completion of the survey will indicate consent, so please consider this before participating.

Once surveys are completed they are to be handed in at your school’s reception, in Building 30, level 2, where they will be kept in a box marked “Surveys for Wendy Cannon” for collection. Your answers will remain confidential and anonymous and the required ECU procedures are in place to ensure your identity will not be exposed. Your answers will be analysed collectively with those of other participants and the results will be used as data for my Honours thesis, and will be processed and presented anonymously.

The questions in the survey require you to reflect on your beliefs about tobacco smoking. If you experience any discomfort or you would simply like to talk to someone about your experiences, the following contacts may be useful:

- Free ECU Student Counselling Service (08) 9370 6706 or counselling@ecu.edu.au
- Quitline 13 78 48
- ECU Psychological Services Centre (08) 9301 0011

If you have any questions or require any further information about this research project, you can contact myself on wcannon@student.ecu.edu.au, or either of my supervisors, Dr. Eyal Gringart (6304 5631) or Dr. Shelley Beatty (6304 5602). Alternatively if you would like to speak to someone who is independent of the research, you may contact: Dr. Justine Dandy, Fourth Year Coordinator, School of Psychology and Social Science, Edith Cowan University (6304 5105 or j.dandy@ecu.edu.au).

Yours sincerely,

Wendy Cannon
4th Year Psychology
The Journal of Applied Social Psychology will disseminate findings from behavioral science research that have applications to current problems of society. By publishing relevant research and emphasizing excellence of experimental design, as well as potential applicability of experimental results, the journal intends to bridge the theoretical and applied areas of social research. The Journal will serve as a means of communication among scientists, as well as between researchers and those engaged in the task of solving social problems.

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