Tobacco Descriptors: An Analysis of Adolescents' Beliefs and Behaviour

Janet Hoek, Ninya Maubach and Philip Gendall, Massey University

Abstract

The World Health Organisation's Framework Convention on Tobacco Control (FCTC) requires signatories to review regulation of descriptors used on cigarette packages, particularly the words 'light' and 'mild', which may imply health benefits the products do not deliver. Research that examined adolescents' perceptions of the descriptors 'light', 'mild' and 'smooth' found a substantial proportion associated these terms with less harmful attributes. The results of a stated preference choice experiment showed that 'mild' cigarettes were significantly more attractive than 'light' or 'smooth' variants, although responses varied according to respondents' smoking status. The findings highlight the existence of misconceptions among all groups, including groups at greater risk of being harmed by confusion, and strengthen calls for more stringent regulation of descriptors used on tobacco packaging.

Introduction

In response to detailed medical evidence documenting the adverse health consequences of smoking (OTC, 2004; WHO, 2004; Thun, 2005), the tobacco industry developed variants to allay smokers' concerns. Initial innovations included filter cigarettes, which were thought to ameliorate harm smokers might suffer from their habit; other developments reduced the quantity of tar and nicotine delivered (Kozlowski and Pillitteri, 2001). Known as 'light' and 'mild', the latter variants were promoted as alternatives to quitting (Joossens, 2001; Pollay and Dewhirst, 2002) and enabled smokers to assuage any guilt they felt about their habit, while reinforcing beliefs they would reduce their risk of suffering from diseases linked to regular tar products (Hurt and Robertson, 1998; Kozlowski *et al*, 1998; Shiffman *et al*, 2001; Borland *et al*, 2004).

However, subsequent research revealed that smokers of 'light' and 'mild' cigarettes did not suffer fewer health problems and concluded the new variants offered no health advantages over regular tar products (Benowitz *et al*, 1982; Etter *et al*, 2003). Research revealed that smokers of 'light' and 'mild' variants engaged in compensatory behaviours; many inhaled more deeply or frequently, or blocked filter ventilation holes designed to reduce tar intake (Burns and Benowitz, 2001; Kozlowski and Pillitteri, 2001), and thus consumed similar levels of nicotine and tar as smokers of regular cigarettes (Thun and Burns, 2001). Despite research findings showing all smokers were at greater risk of a range of illnesses, irrespective of the variant they consumed, a substantial proportion of smokers continue to believe 'light' and 'mild' variants are less harmful.

This evidence of widespread confusion led the WHO to request that signatories to the Framework Convention on Tobacco Control (FCTC) introduce "effective measures" to eliminate deceptive descriptors. The EU has already banned the use of 'light' and 'mild' and the European Court of Justice upheld the legality of this directive (BAT, 2002). More recently, the Australian Competition and Consumer Commission received enforceable undertakings from British American Tobacco, Philip Morris, and Imperial Tobacco that will see the removal of 'light' and 'mild' descriptors from Australian cigarette packaging (BAT, 2005; Philip Morris, 2005; Imperial

Tobacco, 2005). Legislation introduced to the US Senate and House of Representatives (S. 666 in the Senate and H.R. 1376 in the House) would transfer regulation of responsibility for tobacco marketing, including the use of descriptors, to the FDA (CFTFK, 2005).

Yet while some jurisdictions have responded quickly to the WHO's call to action, others have indicated they require more evidence of the alleged confusion, particularly if the tobacco industry challenges proposed regulation. While adult smokers' association of 'light' and 'mild' with less harmful attributes is now well established, evidence of how young people interpret these terms is scant. Many youth smokers view their habit as temporary and believe they will quit during their 20s or 30s (Shanahan, 2000); if descriptors create or reinforce beliefs that some variants are less addictive or less harmful, the case for regulation would be strengthened. Research is also required to assess whether alternative descriptors proposed by the tobacco companies, such as 'smooth', would reduce confusion (King and Borland, 2005). Knowledge of young people's perceptions of descriptors would aid the development of evidence-based policy and provide a basis for refuting legal challenges the industry may take.

The research reported here examined adolescents' perceptions of 'light', 'mild' and 'smooth' when used as cigarette descriptors on brands popular with youth, and their choice behaviour when presented with a scenario featuring brands bearing different descriptors. As social smokers (those who smoke less than once per week) typically do not see themselves at risk of addiction, a higher proportion of this group was expected to associate positive attributes with 'light', 'mild' and 'smooth' cigarettes. We therefore tested the following hypothesis:

H_1 A higher proportion of social smokers than smokers or non-smokers will associate positive attributes with 'light', 'mild' and 'smooth' cigarette brands.

If the descriptors implied some variants were less harmful than others, smokers may be more likely to select those options; the second research hypothesis was thus:

H_2 Brands featuring 'light', 'mild' and 'smooth' descriptors will be more attractive to smokers than non-smokers.

Method

Four local secondary schools were approached to provide access to students aged 13-15, the age range during which smoking typically begins (ASH, 2005); of the three who participated, two nominated specific classes, while the third provided access to all students in the junior school. A detailed consent process was undertaken to ensure both parents and students were fully informed of their rights. A total of 468 students participated in the survey; an overall response rate of 74%.

The questionnaire included three separately administered sections to control the question flow and maintain interest during the survey process. The first section collected demographic details, explored respondents' smoking behaviour, the smoking status of their friends and family, and examined their beliefs about smoking. The second section contained a stated preference choice experiment that manipulated two variables: brand and descriptor. Participants were asked to imagine they were going to a party and that it was their turn to bring cigarettes to share with the group (regardless of whether they themselves smoked). Each page of this section contained four randomly presented choice options; respondents identified the brand they would be most likely to

choose from those shown. The brands selected for this part of the research included the most popular brands smoked by this demographic (Freeman, 2005); these were manipulated to feature each of the test descriptors but in all other respects replicated actual cigarette packages. The final section tested knowledge of 'light', 'mild' and 'smooth' cigarettes with true/false statements.

Results

Respondents' smoking behaviour was used to develop three groups: non-smokers; social smokers, and regular smokers (all of whom smoked more than once a week). Further analyses showed these groups differed in the likelihood that they would smoke before the year's end, or accept a cigarette from a friend, thus confirming the classifications. To test the first hypothesis, the groups' interpretations of the descriptors were examined.

Table 1: Attribute association with 'light' 'mild' and 'smooth' cigarettes

Attribute Statement	Non-Smokers (n≈312)	Social Smokers (n≈60)	Regular Smokers (n≈85)	Sig.
'Light' Cigarettes	**% Identifying Statement as True**			
Less tar than regular cigarettes	59	52	49	.06
Just as harmful as regular cigarettes	54	60	60	.33
Easier to quit than regular cigarettes	26	32	33	.08
Nicer flavour than regular cigarettes	19	27	26	.00
'Mild' Cigarettes				
Just as hard to quit as regular cigarettes	68	77	79	.06
Milder taste than regular cigarettes	54	78	71	.00
Less tar than regular cigarettes	22	17	19	.05
Less harmful than regular cigarettes	20	7	17	.02
Not as addictive as regular cigarettes	14	20	18	.13
'Smooth' Cigarettes				
As much tar as regular cigarettes	51	52	61	.37
Nicer flavour than regular cigarettes	29	42	25	.00
Healthier option than regular cigarettes	25	21	32	.25
Less nicotine than regular cigarettes	24	23	25	.61
Less likely to addict people	17	13	25	.21
Easier to quit than regular cigarettes	17	23	24	.01

Around half the respondents agreed that 'light' cigarettes contain less tar than regular cigarettes; non-smokers were significantly more likely than smokers to hold this view. However, smokers were more likely to agree that 'light' cigarettes were easier to quit and that these had a nicer flavour. Between 25% and 50% mis-interpreted the term 'light'; only 17% gave correct responses to all three factual statements and 12% failed to classify any statement correctly.

A majority agreed that 'mild' cigarettes would be just as difficult to quit as regular cigarettes although a sizeable proportion did not share this view. Non-smokers were less likely to agree with this statement; their lack of experience of addiction may have made them more prone to

confusion. Fewer social smokers agreed that 'mild' cigarettes had less tar than regular cigarettes and were less harmful. Forty percent of the sample correctly answered the factual statements about 'mild' cigarettes; only 1% failed to answer any statement correctly.

As cigarettes are not marketed as 'smooth', statements about this variant were based entirely on respondents' perceptions. Table 1 shows that between 40% and 50% of all groups interpreted 'smooth' to imply that these cigarettes would contain less tar than regular variants. While most believed these cigarettes would not be healthier, or contain less nicotine, than regular cigarettes, a quarter still classified these statements as correct. A slightly lower proportion, around 20% overall, considered 'smooth' cigarettes would be less addictive and a similar proportion believed they would be easier to quit. These findings suggest young people associate the term 'smooth' with similar attributes to those evoked by the terms 'light' and 'mild', and question whether 'smooth' would be any less likely to mislead consumers than the terms it is proposed to replace.

Table 1 shows young people's understanding of 'light', 'mild' and 'smooth' varies; between a quarter and a third associated these descriptors with healthier, or less harmful, attributes. However, the hypothesised differences did not always emerge between the different risk groups. Aside from the flavour statements, social smokers were not consistently more likely to associate positive attributes with the descriptors and, in one instance, were significantly less likely to do so.

The second hypothesis was tested using a multinomial logit model; this assumes choices depend on the relative utility of the alternatives offered and that the utility of each alternative can be calculated by summing its attributes weighted by their multinomial logit regression coefficients. To estimate the model, respondents' choices were combined to produce aggregate frequencies for each brand in each choice set; these were then regressed against the matrix of attribute variables, which included brand, descriptor and risk group. Table 2 contains the main effects model.

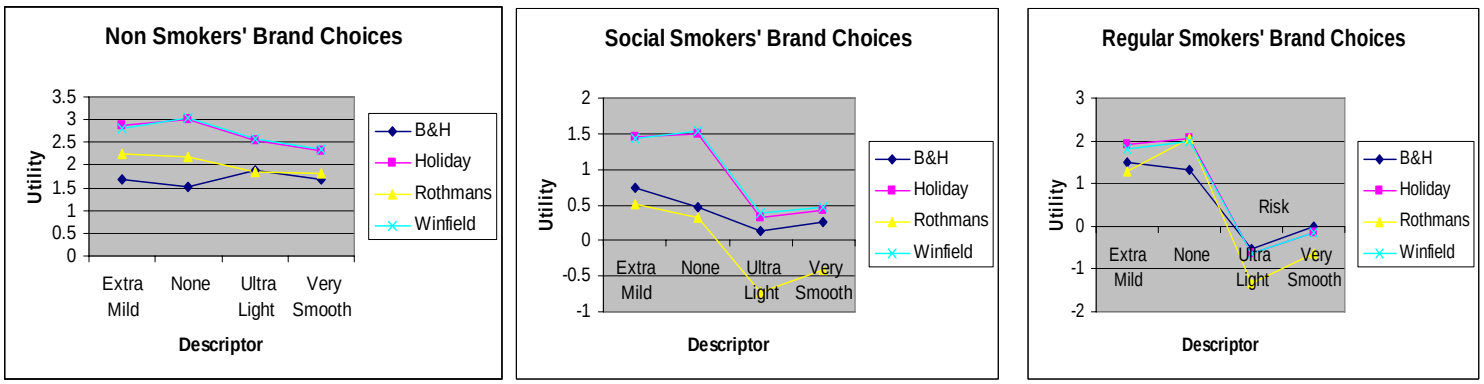
Table 2: Main effects model

Attribute	Co-Efficient	S.E.	Chi-Square	Sig.
Non-Smokers	1.6903	.18	90.37	<.0001
Social Smokers	.2670	.22	1.48	ns
Regular Smokers	0			
Benson & Hedges	0			
Holiday	-.1294		.17	ns
Rothmans	-.6391		10.81	.001
Winfield	-.1570		.86	ns
Extra Mild	1.4886	.19	62.89	<.0001
None	1.3059	.19	47.04	<.0001
Ultra Light	-.5274	.26	4.01	.04
Very Smooth	0			

All the descriptors had significant main effects and several significant interaction effects were evident. As Figure 1 shows, while the different brands' appeal varied among non-smokers, this reflected market share. The descriptors had similar appeals, a finding that reflects non-smokers' lack of knowledge of the product category. By contrast, as hypothesised, social smokers were influenced more by the descriptor, particularly the extra mild and plain options. This may reflect

the badge status of these options as well as the availability of both the most popular youth brands – Holiday and Winfield – as extra mild and unlabelled variants. None of the brands tested offers an ultra light variant and the results appear to reflect respondents' lack of familiarity with these variants. This conclusion is supported by the drop in attractiveness of Holiday and Winfield when these were paired with less familiar descriptors. As hypothesised, regular smokers' choice was strongly influenced by the descriptor, although this was also moderated by familiarity.

Figure 1: Brand Descriptor Utilities



Discussion and Conclusions

Considerable confusion over tobacco descriptors exists among adolescents, substantial proportions of whom view brands labelled 'light' or 'mild' as less harmful than regular cigarettes. 'Smooth' is unlikely to dispel the confusion created by the latter terms and seems likely only to replace one misleading term with another. While no uniform pattern of confusion emerged, analyses using a larger sample could reveal similar patterns to those found among adult smokers.

The choice experiment suggests social smokers were more responsive to brands and variants they knew, while regular smokers were attracted by the variants, and non-smokers showed a more random choice pattern. Established pairings were significantly more attractive than less familiar combinations; this highlights the desirability of avoiding brand-attribute links that enhance brands' appeal. The 'extra mild' variant was most attractive to social smokers, 20% of whom considered this to be less addictive than regular variants. Confusion levels of 15% have been sufficient to establish deception in intellectual property cases; evidence of greater confusion among adolescents supports initiatives to regulate descriptors. As young people often believe they will quit smoking in the future, and few regard themselves as addicted smokers (Elliott and Shanahan, 2000; Environics, 2001), descriptors may reinforce and augment existing confusion.

The proportion of adolescents incorrectly associating 'light' and 'mild' with less harmful attributes confirms the WHO's call to ban descriptors, but suggests caution is required before replacement terms, such as 'smooth' are introduced. It would be ironic if alternative descriptors created similar levels of confusion and further research into these is required to ensure the industry's proposed response does not circumvent regulators' intentions.

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