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Edited by: Ms Daniela Spanjaard, Dr Sara Denize and Dr Neeru Sharma
 School of Marketing, University of Western Sydney

Contact: ANZMAC
 Web site: <http://www.anzmac.org/>

2008 Conference Secretariat
 Promaco Conventions
 PO Box 890, Canning Bridge WA 6153
 Ph: +61 (08) 9332 2900 Fax: +61 (08) 9332 2911
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Plain Packaging, Pictorial Warnings and Tobacco Products: An Empirical Assessment

Janet Hoek and Philip Gendall, Massey University, New Zealand
Jordan Louviere, University of Technology Sydney, Australia

Abstract

Although tobacco marketing is restricted, tobacco product packaging continues to communicate brand imagery, thereby maintaining brand salience and potentially reducing the impact of health warnings. This study used respondent conditioning theory to predict how disruption of brand imagery would affect the attractiveness of known, unknown and generic tobacco packages. A best-worst study found that familiar branding offset the negative connotations created by a pictorial warning label (PWL). These are the first findings to document the combined effect of PWLs and plain packaging; they suggest generic packs will stimulate cessation attempts and deter smoking initiation.

Introduction and Review of Literature

Smoking is widely regarded as the leading preventable cause of death (Ministry of Health, 2005); however, regulating tobacco marketing has proved both contentious and difficult. Internationally, legal challenges to tobacco marketing restrictions have slowed the decline in smoking prevalence. For example, the proportion of smokers in New Zealand has decreased slowly and, at 19.9% (MoH, 2008), is nearly 50% higher than the US Centre for Disease Control's international goal of 12% for the year 2010 (Mendez & Warner, 2004). The continuing discrepancy between smoking prevalence targets and actual smoking penetration suggests that, despite national statutes and international treaties, such as the Framework Convention on Tobacco Control (FCTC), smoking remains a serious problem.

While more stringent regulations have removed the tobacco industry's ability to use mass media, the evolution of alternative media still enable tobacco manufacturers to reach existing smokers and attract new recruits. Hastings *et al* (2006) argued retail displays feature packages that invite attention, maintain brand salience, and attract new users, thus performing the functions advertising formerly fulfilled (see also Wakefield *et al*, 2002; Carter, 2003a). Unlike many other products, tobacco packaging is not removed and discarded but is used as a container until the contents have been consumed; it thus remains highly visible and is frequently exposed to users (and others). As a result, it delivers brand messages, reinforces brand livery and imagery, and maintains brand salience (Wakefield & Letcher, 2002). Pollay (1990) had earlier noted the importance of tobacco imagery to young smokers, whom he argued gain and convey a sense of identity from the brands they consume. He described tobacco as a "badge product" that provides: "*a living testimonial endorsement of the user on behalf of that brand and product*" and enables users to access and use "*some of the identity and personality of the brand image*" (Pollay, 1990, p.10; see also Eadie *et al*, 1999).

Pollay's comments recognise the effect powerful branding has on consumers' choices (see also Dewhurst & Davis, 2005), a fact evident in tobacco industry documents, which reveal how marketing has continued via point of sale displays and packaging. As Carter (2003a) concluded, imagery once communicated by advertising is now disseminated via other media. Of these alternative media, packaging has grown in importance, particularly since many

countries prohibited sponsorship, which largely replaced tobacco advertising. More than a decade ago, Slade (1997) wrote: “*As advertising restrictions loom or become a reality, the surfaces of the pack itself remain available for communication to customers and potential customers*” (p. 169). Pollay (1995) exposed the extensive research undertaken to design cigarette brand livery, while Hammond (2004) explained how this reassures smokers who feel anxious about the medical consequences of their addiction. Mahood (1999) also warned that sophisticated pack design elements, such as aspirational brand names, colours and designs, reduce the visibility and impact of health warnings (see also Carter 2003b).

Evidence that packaging promotes brand values and may thus undermine health warnings prompted tobacco control researchers to argue for two regulatory measures: stronger and more impactful on-pack warnings, such as pictorial warning labels (PWLs), and plain (or generic) packaging. Canada was the first country to mandate PWLs; recent evaluations suggest these have stimulated large increases in calls to “Quit smoking” services and a marked growth in smoking cessation attempts (Health Canada, 2006).

However, while PWLs have made health warnings more overt and less avoidable, their impact could be enhanced if tobacco products were presented in plain packages devoid of competing stimuli such as brand logos, colours and corporate symbols (Cunningham & Kyle, 1995). In 1989, the New Zealand Toxic Substances Board recommended introducing generic packaging for all tobacco products, and other countries also considered this proposal. At that time, research into pack design undertaken for W.D. & H.O. Wills noted that: “*generic packaging is likely to have a major impact on brand imagery*” (p. viii). While some addicted smokers thought changes to packaging would not influence their future brand choice, others noted that “*packaging might have played some role in their initial brand choice*” (Campbell, Hoare & Wheeler, p. 21). Rootman & Flay (1995) reported that young people regarded plain packages as old fashioned and boring, and thought fewer people would smoke if cigarettes were sold in plain packages. A New Zealand study found reductions in brand imagery were associated with higher recall of health warnings (Beede & Lawson, 1991; 1992).

These studies suggest reductions in brand imagery would diminish the attractiveness of tobacco products, promote cessation-related behaviours among some smokers, and reduce initiation. However, despite these findings, recent regulatory initiatives have focussed on PWLs and the elimination of misleading descriptors. Since the early 1990s, few studies have examined the likely effects of plain packaging or its interaction with other tobacco control measures, and none have explored the combined effects of plain packaging and PWLs.

Theoretically, tobacco brand imagery functions via respondent conditioning, where brand names, colours and other imagery become paired with psychological and emotional attributes (Pollay, 2004). These peripheral cues act as heuristics that do not require systematic processing, but are implicitly relied on by smokers to move from their actual self to their desired self (Arnett & Terhanian, 1998; Hastings & MacFadyen, 1998). Behavioural learning theory suggests familiar brand imagery will provide reassurance by eliciting learned responses and expectations, which are likely to reduce the salience and effectiveness of competing stimuli, such as PWLs (Childers & Houston 1984; Pieters & Wedel 2004).

Despite this reasoning, the tobacco industry has consistently opposed restrictions on tobacco marketing or that might encroach on their trademarks. Industry retained researchers have argued that plain packaging would have little effect on youth smoking initiation and may even increase smoking prevalence, since manufacturers could respond by lowering prices to

remain competitive, thus making tobacco more affordable (Luik, 1998). Although Freeman *et al* (2008) rejected these arguments; further research is required to estimate the influence of tobacco branding and its interaction with warning information. These findings will provide regulators with a stronger evidence base on which to draw when determining whether plain packaging is an appropriate and proportionate tobacco control measure.

Methodology

Respondent conditioning theory and findings from industry and independent studies into tobacco branding suggest tobacco brand imagery reassures smokers and confers a sense of identity on them (Wakefield & Letcher, 2002). The benefits gained from brand familiarity may therefore be sufficiently powerful to offset negative stimuli, such as PWLs. However, unfamiliar brand imagery, although more attractive than a generic pack, will not have developed the emotional pairings necessary to offset PWLs. We thus hypothesised that:

- H1 A familiar brand with a PWL will be more attractive than a generic pack featuring a text warning.
- H2 An unfamiliar brand with a PWL will be less attractive than a generic pack featuring a text warning.

To test the interaction between brand familiarity and warning label format, we designed a 3*2 experimental design that included three brand options and two warning formats. NZ Ministry of Health data showed Holiday was the most popular young adult brand. A second brand, Kool, was selected as an unfamiliar brand, as it is not sold in New Zealand. Finally, a plain or generic pack was developed. Each brand was used in a pack image that featured one of two warnings. The first, a text warning, read: “Smoking Kills” and is widely regarded as the strongest of the text-only warnings. The second was a PWL featuring a dissected human brain and the text: “Smoking is Brain Dead”; earlier research had established this as a powerful message that resonates with young adults. This process resulted in six brand-warning combinations that were used in a Best-Worst (BWS) experiment.

BWS was first outlined by Finn and Louviere (1992) as an alternative to discrete choice experiments. It requires respondents to evaluate and compare the utilities of different attribute levels that are presented to them; they then select both the best (highest utility) and the worst (lowest utility) option from the choices they have viewed. BWS assumes respondents select the pair of options that differ most on an underlying subjective dimension, such as “degree of preference” (Auger, Devinney and Louviere, 2004). This technique offers several advantages over data collected via rating scales and ranking questions, which frequently produce tied items. By contrast, BWS estimates enable ratio-scaled comparisons between the attributes estimated (Flynn *et al*, 2006).

Face-to-face interviews with a systematically selected sample of 245 young adult respondents were conducted on a university campus over seven days in September 2007. This cohort is of particular interest, since smoking initiation often increases when young people leave home and normal social constraints no longer apply (MoH, 2008). Respondents were asked to imagine themselves in a scenario in which they had just moved to university and were living in a hostel where they had developed a new group of friends with whom they had started smoking socially. A balanced incomplete block design (BIBD) using 10 showcards was developed and respondents were asked to select the pack they would be most likely (best) and least likely (worst) to buy to share with her or his new friends.

Among our sample, 55% were female and respondents' average age was 22. Two-thirds (66%) had smoked at least one cigarette, 10% currently smoked daily and a further 11% smoked less frequently. The majority of smokers had started smoking while at school, though 35% of our sample commenced between the ages of 18-22, a finding that highlights the importance of researching tobacco control measures among this demographic.

Results and Discussion

To test our research hypotheses, we first developed a general model that examined the overall pattern of preference. Table 1 contains these results. The first column contains the sum of the best minus the worst score counts while the second column contains standardised scores which are calculated thus:

$$\text{Standard Score} = \frac{\text{Count best} - \text{Count worst}}{5 * 245 \text{ (no. of exposures * sample size)}}$$

Table 1: BWS Estimates of Pack-Warning Preference

Pack Design and Warning	Best - Worst Scores	Standardised B-W Scores ¹
Holiday Text warning	863	.70
Kool Text warning	513	.42
Holiday PWL	37	.03
Generic Text warning	-171	-.14
Kool PWL	-361	-.29
Generic PWL	-881	-.72
Effect Size²		
Text cf. PWL warning = .65		
Familiar brand cf. unfamiliar brand = .30		
Familiar brand cf. plain pack = .80		
Unfamiliar brand cf. plain pack = .50		

1. The standardised scores are conceptually equivalent to standardised regression coefficients with the signs taken into account. They thus indicate the relative perceived effectiveness of the information formats tested.
2. Effect sizes were calculated by averaging the standardised differences between the variables of interest. Thus the text warning effect = $((.70-.03)+(.42+.29)+(-.14 + .72)/3) = .65$

The familiar brand, Holiday, was the most preferred option when paired with a text warning, followed by the unfamiliar brand (Kool), also when combined with a text warning. Although the PWL depressed pack attractiveness, brand familiarity still offset this negative stimulus. Thus, even when the Holiday brand was paired with a PWL, respondents were still more likely to prefer it to a generic pack with a text only warning. By contrast, when the unfamiliar Kool brand featured a PWL it was slightly less attractive than the generic pack with a text warning. These findings support the hypotheses and suggest familiar brand imagery overrides negative stimuli, even when these are intrusive and disconcerting. More generally, the findings support concerns that branding reduces the impact of health warning information.

The effect sizes show the difference between the familiar brand and plain pack was greater than the difference between the text and PWL warning (.80 cf. .65); this suggests plain packaging could decrease the attractiveness of smoking beyond the effects of PWLs. At the time the fieldwork was conducted, PWLs had not been introduced to New Zealand, thus

potential “wearout” effects would not explain the patterns in Table 1. To examine whether plain packaging and PWLs affect smokers and non-smokers differently, separate analyses were undertaken. Table 2 contains these results.

Table 2: BWS Estimates of Pack-Warning Preference by Smoking Status

Pack Design and Warning	Current Smoker (n=51)		Current Non-Smoker (n=194)	
	B - W Score	Stdstd B - W Scores	B - W Score	Stdstd B - W Scores
Holiday Text warning	206	.81	657	.68
Kool Text warning	130	.51	383	.39
Holiday PWL	-18	-.07	55	.06
Generic Text warning	-16	-.06	-155	-.16
Kool PWL	-98	-.38	-263	-.27
Generic PWL	-204	-.80	-677	-.70
Effect Size Smokers		Effect Size Non-Smokers		
Text cf. PWL warning =.84		Text cf. PWL warning =.61		
Familiar cf. unfamiliar brand = .30		Familiar cf. unfamiliar brand = .31		
Familiar brand cf. plain pack = .87		Familiar brand cf. plain pack = .80		
Unfamiliar brand cf. plain pack = .50		Unfamiliar brand cf. plain pack = .49		

Smokers’ preference for branded packs with text warnings was stronger than non-smokers’; smokers were also more likely than non-smokers to identify packs with PWLs as their “worst” choice. Although familiar branding offset the PWL among non-smokers, smokers’ preferences for the familiar brand paired with a PWL and the plain pack featuring a text warning were similar. These findings partly support the first hypothesis, but, not surprisingly, suggest smokers find the PWLs more impactful than do non-smokers. PWLs and plain packaging had similar effect sizes with respect to smokers (.84 cf. .87) whereas the plain packs had a stronger effect on non-smokers than did the PWLs (.80 cf. .61).

Conclusions

Respondent conditioning theory suggests removal of brand imagery would deter smoking initiation and promote cessation by extinguishing the “badge” status of tobacco products and eliminating an important communication channel relied upon by tobacco marketers. Our findings support these hypotheses; the PWL decreased the attractiveness of tobacco packages, particularly among smokers, and generic packages were markedly less attractive than branded packages, particularly when they featured a PWL. The results suggest PWLs disrupt brand imagery; each option was less attractive when paired with a PWL than with a text warning, and attractiveness declined in line with brand familiarity.

However, our study estimated the perceived appeal of different options, not actual behaviour, thus further work is required to test behavioural outcomes as well as the extent to which these apply to other populations. Nevertheless, our results suggest generic packaging would increase the salience and impact of PWLs, and reduce the influence of brand imagery. These findings are the first to estimate the interaction between brand imagery and PWLs; they quantify the importance of tobacco branding and illustrate how plain packaging could contribute to “best practice” tobacco control initiatives.

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