Plain Cigarette Packaging as a Remedy to Reduce Smoking

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Abstract

Restricting cigarette packages to a plain format that would be devoid of logos and visuals is being considered by many countries including the UK, the EU and Australia. The removal of all but a standardized name of the brand in small font is argued to be an important further remedy for lowering cigarette smoking behavior. The package is argued to reinforce cigarette advertising and promotion. However, many of these same countries have banned all forms of advertising and promotion for many years, as well as more recent bans of retail displays of cigarette brands at retail venues. How does the peer reviewed and published empirical (quantitative and qualitative) research literature justify eliminating all branding on cigarette packages when there is no promotion of brands in those markets, with some bans in place for over three decades?

A review of the findings show that there is no evidence in these studies that the use of the branded package has more influence on present and future consumers than seeing other cues such as a lit cigarette, or someone smoking without the package visible. There is also no evidence that plain cigarette packages will lower youth initiation of smoking, increase quitting by smokers or reduce the relapse of smokers from quitting. Previous US experience with generic cigarette brands, often cited as a prototype for plain packaging by researchers, provides evidence that a “plain” package may have negative unintended consequences by increasing youth initiation of smoking and adult use of cigarettes.

Introduction

The concept of restricting cigarette packages to a plain format that would be devoid of logos and visuals is being considered by many countries including the UK the EU and Australia. The removal of all but a standardized name of the brand in small font is argued to be an important further remedy for lowering cigarette smoking behavior

(Beebe and Lawson 1992, Hammond et al 2009, Germain et al. 2010). These researchers argue that the present branded cigarette package reinforces the memory of advertising and promotion by cigarette companies. Many of these countries looking to require plain packaging have previously banned all forms of advertising, sales promotion and any retail point of sale (POS) display of cigarette brands. At the time of this submission, laws banning retail point of sale (POS) have been adopted in Iceland, Canada, Thailand, Australia and the UK (Paynter and Edwards 2009; Basham 2010). How does the research literature justify eliminating all branding on cigarette packages when there is no promotion of brands in those markets-some countries' bans have been in place for over three decades?

Research on Plain Packaging

Plain Packaging Defined and Claims of Efficacy

Moodie and Hastings (2009) provide a good definition of this often varied perspective of what constitutes plain cigarette packaging. "Definitions of plain packaging (also referred to as 'standardized', 'generic', 'homogenous' and 'dissuasive' packaging) from the 1980s onwards are generally consistent …the terms are often taken to cover the standardization of shape, method of opening and base color, with brand name required to be printed using a standard typeface, color and font size on the pack front…must be devoid of all promotional elements (trademarks, logos and product claims" (p. 3).

There are several ways the cigarette package is argued to cause smoking beyond its alleged effects in now banned retail displays (Beede and Lawson 1991; 1992; Donovan et al. 2002; Hoek et al. 2010).

1) The present cigarette package acts as an advertisement in a retail store point of sale (POS) display where some element of the package is visible to a store customer.

2) The package makes cigarette use appear ubiquitous and makes potential and new users believe smoking is more 'normal' than it is. The literature is

not clear on how plain packaging would change this perception beyond making the imagery of the user less glamorous.

3) The product package is visible to present smokers that want to quit, or have quit smoking, and the exposure to the branded package excites them and gives them cravings for tobacco and the "urge" to smoke again.

4) The prominent branding used on packs ensures long term loyalty from new users by providing favorable and compelling images they can continue to experience.

5) The present package reduces the effectiveness of present warnings by reducing their potential size and the competition from 'eye-catching' branding logos.

Focus of the Review

There is a significant body of literature that could be related to cigarette packaging alone. Building on Paynter and Edward's 2009 review of tobacco POS displays in retail sales, this review will limit the range of coverage to research relevant to cigarette packaging as a unique factor in smoking behaviors (initiation, experimentation, continued use, quitting and relapse from quitting). Similar to Paynter and Edwards, only peer reviewed published research using empirical data (qualitative or quantitative) will be covered. The pool of research to review was developed from an online search of plain cigarette packaging research and citations that published research used to support arguments. Although the findings of published studies will be critiqued for accurate interpretation, their methods for collecting, testing and interpreting analyses used to generate the results will generally be accepted for this review. Other reviews (e.g. Padilla and Watson 2010) have examined the veracity of the findings on plain packaging by evaluating the methods used to obtain the data.

There is also a body of literature that has analyzed the period of 1980 to 1995 in the US where discount and generic packaged cigarettes obtained more than 40% of cigarette sales in some geographic markets. While this packaging is not the exact same format as many tests of plain packaging, generic branded cigarettes used little or no branded packaging and no retail promotion beyond their much lower price. Nonetheless, these generic and discount brands obtained significant increases in brand

share while research from this period reports significant increases in smoking behavior associated with these ‘plain” packages.

Early Qualitative Research on Plain Cigarette Packages

The first specific reported empirical research on plain packaging was published in 1991 and 1992 by Beede and Lawson. They used qualitative methods – 80 focus group interviews of n=568 adolescent respondents with an average age of 13 years. The 1991 study used three cigarette packs from New Zealand and the US to make up four groups of brands: NZ brand packs, US brand packs, NZ generic packs and US generic packs. These packs were shown to focus groups who were then asked to describe the profile of the kind of smoker they imagined from the packages. Beede and Lawson reported that their interpretation of the group members comments were that the user profiles elicited were highly correlated with their interpretations of the cigarette pack images on the branded pack. Further, they argued that the foreign (US) brands elicited brand imagery even though the brand was not marketed in NZ. They surmised that the respondents must have obtained the imagery from the pack only, with no further marketing effort involved. On the other hand, they report that the generic brands from both countries generated comments of dull and boring from the focus group respondents. The authors further reported that some adolescent respondents said the plain generic packs would deter the interest to smoke in other young adolescents and that plain cigarette packages would lower the rate of smoking initiation. Beede and Lawson concluded that generic-like packaging would not produce the imagery that lured youth because it did not appear to do so in their focus groups. Unfortunately, the veracity of their report of focus group members’ comments cannot be supported because of the qualitative nature of the data collection. It isn’t clear how the questions were asked or answered in an environment that could have strong biases (e.g. leading questions and prompts for follow up responses) operating in the focus groups’ responses.

The 1992 Beede and Lawson study appears to use the data generated by the 1991 study (80 qualitative focus group interviews) but focused on the ability of focus group members to recall health warnings after being exposed to one of the four groups (NZ premium brands, NZ generic brands, US premium brands, US generic brands) of cigarette packs used in the 1991 study. Beede and Lawson (1992) note that , “the idea

of a ‘plain pack’ for cigarettes is taken from the concept of generic products, …as well as serving to inhibit the promotion of cigarettes, the format of plain packs should serve to increase the effectiveness of health warnings placed on packs” (p. 315). The authors reported that, “…respondent’s abilities to recall health warning information was significantly improved for the plain packs” (p. 320). However, tests of statistical significance were not conducted, and probably shouldn’t be tested given the qualitative nature of the focus group method of collecting data. The methodological limitations of Beede and Lawson’s 1991 and 1992 studies have also been documented by Padilla and Watson (2010).

Beede and Lawson also argued, “…over time, the learned associations between the physical product and the brand symbols (names, logos, colors, etc.) used in advertising would be extinguished” (p. 321). No citations were provided to support this statement by these health researchers.

Research on Branded Package and Cravings for a Cigarette

A 2001 article by Sayette et al. studied the cues that could elicit cravings for tobacco by heavy smokers and tobacco “chippers” (light smokers). They found that the urge to smoke among the 21 to 35 year olds was related to how long since the respondent smoked a cigarette and their level of use. The relevance to plain packaging for cigarettes is that light users, compared to heavy users, do not get cravings due to deprivation (not smoking over time). The need to smoke immediately after exposure to the cue like a cigarette pack was found significant only for heavy users of tobacco, not the light users. This supports the proposition that the regular branded package would not be expected to be a significant stimulus to adolescents for evoking tobacco cravings by itself, for initiation, experimentation and light use. Previous research has found (Moodie et al. 2009) that adolescent initiation to cigarette use is largely due to social pressure, not an urge to smoke.

Paynter and Edwards (2009) reviewed 12 peer reviewed studies that looked at the association between a self-report measure of the, “…exposure to tobacco promotion at the point of sale (POS) and their reported smoking initiation or susceptibility to smoking” (p. 25). Because most of the studies looked at the package as part of the POS display, the findings are not particularly relevant to the present review. However,

they cite an experimental study by Carter et al. (2006) that, "…found that a picture of collected cigarette packs elicited cravings for cigarettes among smokers" (p. 25). A portion of a table in Carter et al. that portrays the cravings score by photograph is shown in Figure 1. The higher the self reported craving for tobacco on a five point scale, the stronger the craving. The "deprived" (D) and "non-deprived" (ND) refer to the subjects' time since the last cigarette.

Figure 1: Carter et al. (2006)

		Mean	
Picture	Description	ND	D
401	Man smoking	3.71	5.00
402	Couple smoking	3.57	4.94
403	Woman smoking	3.73	5.00
404	Cigarette in ashtray	4.00	5.39
411	Man smoking	4.50	5.09
412	Couple smoking in bar	3.90	5.15
413	Cigarette in ashtray	4.27	5.00
414	Cigarette with coffee	4.18	5.52
415	Cigarette with beer	3.87	5.06
416	Woman smoking	3.80	4.94
417	Cigarette in ashtray	3.97	4.85
418	Cigarette packs	3.63	4.67
	All 12 cigarette pictures	3.93	5.05
	All 12 neutral pictures	2.67	2.07

Note. ND, nondeprived; D, deprived; D v. ND, deprived vs. nondeprived.

Looking at Carter et al. (2006), they reported that the photo of the cigarette (8 different brands shown) packs elicited, "…a craving for cigarettes that was higher than cravings induced by neutral photos (no smoking or tobacco imagery), but slightly less than for most other smoking-related images such as pictures of lit cigarettes and people smoking" (p. 30).

Given the small sample (n=63) the authors gave no test of statistical difference between the 12 pictures of smoking. However, the picture of eight different packs of cigarettes is probably not significantly different from some of the "neutral" non-smoking pictures. It appears viewing others smoking, or even a lit cigarette in an ashtray, evokes more reported cravings to smoke a cigarette than seeing branded packages of cigarettes.

Package Prompts Favorable Perceptions of Smokers

Donovan et al. (2002) exposed one hundred 10 to 12 year old students to a photograph of a package of cigarettes, or an ad for cigarettes, "…typical of point of sales advertising posters" (p. 191). The respondents then rated the user of the brand featured in the picture of the cigarette package or the POS ad. No rationale was given for using a picture of the package as a control, nor did the authors provide an explanation why or how seeing the package (two brands tested) alone would prompt smoking.

Only 11% of the subjects In the Donovan et al. study had "ever smoked", and only one subject had reported smoking in the "last seven days." In other words, this sample consisted almost exclusively of non-smokers. The authors found that for one of 12 Marlboro brand attributes ('adventurous') the POS ad prompted significantly more subjects (42% vs. 24%) to favorably rate the smoker of Marlboro than those viewing a photo of the Marlboro cigarette package.

However, the proportion of subjects that rated the typical Marlboro smoker favorably on the other attributes never rose above 36% (highest for the attribute "rich"). Only three attributes had more than 20% of the subjects rate the smoker of the brand favorably. The results do show that exposing cigarette packages to adolescents prompts less favorable ratings of the smoker than their exposure to a cigarette POS ad.

For example, the young subjects viewing a Benson and Hedges package tended to rate the smoker more favorably across many of the 12 smoker attributes, except for the smoker being 'healthy' (2% for both brands' packages). The highest proportion of the sample to favorably rate a Benson and Hedges user on an attribute was on "up-to-date" (50%). Thirty-four percent rated the smoker "rich" and 30% rated the smoker "adventurous". Only two other smoker attributes obtained more than 20% (22% for "someone I would like" and 24% for "relaxed") of the sample to rate them favorably.

This shows that a sample of largely non-smoking 10 to 12 year olds rated smokers of two popular cigarette brands very poorly when shown photos of the four branded packages. These would be packages used in 2002 so the warnings would be substantially smaller and less vivid than present Pictorial Health Warning (PHW) that graphically show pictures of negative smoking outcomes like cancer of the neck or mouth. A more appropriate gauge for the effects of the cigarette package would need to obtain the same ratings for subjects not exposed to photos of either the package or the POS advertisement. Perhaps a more appropriate comparison would be a cigarette-lit or unlit. That would account for the ambient imagery subjects would develop normally. Given the low ratings of smokers by the sample in this study, it would require a fairly large sample to detect any differences from those reported. It is quite likely that viewing the cigarette package would prompt no different ratings of users or perceptions of brand imagery by smokers and non-smokers, than viewing no cigarette package.

Smokers' Perceptions of the Influence of the Package on their Smoking

A 2008 study by Scheffels used in-depth interviews about brands and cigarette package designs with 21 Norwegian cigarette smokers between 18 and 23 years old. Scheffels suggests, "The cigarette package is likely to play a part in this (smoker's identity). When the pack is taken out of a pocket and opened to take out a cigarette, the pack is visible for all to see. In this way, it can make a statement about identity" (p. 118). She also comments on but doesn't test the "debate" on the required use of plain or "generic" packaging for cigarettes. "The aim of plain packaging is to take away the tobacco package's visual identity and appeal as an advertisement for the product" (p. 118). However, the 2002 article by Donovan et al. found that adolescents viewing a photo of a cigarette pack POS display had more favorable ratings on a few smoker attributes than adolescents viewing a photo of full branded cigarette brand packages.

From the qualitative and easily biased in-depth interviews, Scheffels interpreted three broad themes about how young smokers thought about their cigarette brand. The themes were the cigarette as social and local identity, brand choice as distinction and the cigarette package as an accessory of identity. There is no specific mention of the cigarette package until the "Cigarette as an accessory" section of the results. It isn't

clear what Scheffels asked about the package but she reported the respondents had many thoughts and introspections about the role of the packaging in their smoking. Scheffels interpreted the responses as showing, "…cigarette packages are talked about as being useful for expressing statements about the self, about style, about changes in style or identification and for 'dressing up' for special occasions …Characteristics of the package, such as color, illustrations and the font of the letters used for the brand name, are positioned as contributing to the symbolic meaning of the cigarette brand" (p. 121). To make a case that this is known and used by tobacco companies, she cites BAT documents that, "…explored how cigarette packs were appreciated as great to put down at a bar by young urban males" (p. 120). However, none of the discussion in the BAT company documents covered the role of the package in initiation to smoking or how packages prompted continued use of the product beyond for brand switching.

Perception of the Pack and Intentions toward Smoking

Wakefield et al. (2008) studied the perceptions of adult regular smokers that were exposed to one of 12 cigarette package options that featured three brands in original branded packages and three plain packaging options per brand (Figure 2). After exposure they were asked about their perceptions and intention regarding the brand. The visuals were exposed to the pre-recruited sample via an online survey. The authors report, "Compared with current cigarette packs with full branding, cigarette packs that displayed progressively fewer branding design elements were perceived increasingly unfavorable in terms of smokers' appraisals of the packs, the smokers who might smoke such packs, and the inferred experience of smoking a cigarette from these packs" (p. 416). However, that interpretation is not consistent with their results and they failed to note what did not happen.

After being exposed to one version of the package in an online survey, each was asked their agreement on an 11 point scale about several attributes of the brand/package (e.g. "attractive looking pack", "value for money"), the characteristics of a smoker of the brand/package (e.g. "Trendy/stylish", "confident/successful"), their perceptions of the sensory attributes of the brand/package ("rich in tobacco", "satisfying") and their agreement whether the brand/package is a "brand you might try/smoke".

Figure 2: Wakefield et al. (2008), p. 418

Because the 11 point scale (0 to 10) was not normally distributed, they decided to divide responses to the scale into two groups. Responses from 0 to 4 were labeled reflecting “disagreement to low disagreement”. Responses rated 5 to 10 were rated “moderate to high disagreement”. Logistic regression was used to generate odds ratios and measures of statistical significance. Even with accepting this questionable approach to improving the metrics (see Padilla and Watson 2010 for a critique), relatively few, and often counterintuitive results are evident.

The authors report that there were no differences by brand so they combined the data across the three brands in their analysis. One would have expected that if the package was a form of advertising, the smokers would report different brand perceptions in line with Beede and Lawson (1992). Even more surprising was that one "de-branded" version of the plain package (Plain Pack 1) did "worse" (gave more favorable perceptions) on every perception and characteristic than the original full branded package.

There were 19 statements the respondents rated. However, there was no evidence provided that these statements were associated with trial or intentions to try. Of the 76 (19 x 4 versions = 95 before combining across brands) ratings analyzed, 17 (22%) showed one pack rated significantly ($p<.05$) different from the others on that statement. Providing the appropriate adjustment to the statistical error level for multiple comparisons finds only 7 of the 76 (9%) comparisons would be significantly different. No perceived sensory perceptions (e.g., satisfying, rich in tobacco), normally seen as salient to smokers behaviors, were different between the plain packs tested and the original branded cigarette package.

Wakefield et al. (2008) argued that the respondents' perceptions of the brand, its user and their sensory perceptions of smoking the brand were linked to their future smoking behavior. Nonetheless, exposure to the plain package options did not significantly lower the smokers' rating of a "brand you might try/smoke". The ratings are remarkably close across the four package options (59% original, 56% pack 1, 53% pack 2, 52% pack 3). In other words, even the most plain version (Plain package 3) was not significantly different from the present package in terms of a measure of the respondents' intention to try/smoke the brand. It is clear that their perceived characteristics of the brand/pack and smoker, and the perceived sensory perceptions about the brand they measured, were not salient criteria for these smokers' decisions on trial or use.

Hammond and Parkinson (2009) conducted a mall intercept interview with 312 adult smokers and 291 adult non-smokers in Ontario, Canada. They exposed each subject to one of nine (9) comparisons of present packages with various descriptors (e.g. "6" vs. "10") and asked about which package "delivers less tar", has a "smoother taste" and

has a "lower health risk". Figure 3 shows the nine treatments and subject choices concerning those three perceptions.

Figure 3: Hammond and Parkinson (2009)

Perceptions of brand descriptors and design ($n = 604$).

	"Light" vs. "Full-Flavour"			"Mild" vs. "Regular"			"Smooth" vs. "Regular"		
			No Difference			No Difference			No Difference
Delivers less tar	91%*	5%	4%	93%*	4%	3%	91%*	5%	4%
Smoother taste	74%*	23%	3%	77%*	20%	3%	92%*	6%	2%
Lower health risk	87%*	7%	6%	86%*	9%	5%	80%*	11%	9%
	"Silver" vs. "Full-Flavour"			**"Ultra Light" vs. "Light"**			**"6" vs. "10"**		
			No Difference			No Difference			No Difference
Delivers less tar	83%*	12%	5%	89%*	7%	4%	90%*	5%	5%
Smoother taste	65%*	31%	4%	62%*	35%	3%	77%*	16%	7%
Lower health risk	73%*	17%	10%	76%*	17%	7%	84%*	8%	8%
	Lighter vs. Darker Colour			**White symbol vs. Grey symbol**			**"Charcoal Filter with picture"**		
			No Difference			No Difference			No Difference
Delivers less tar	83%*	6%	11%	71%*	11%	18%	77%*	20%	3%
Smoother taste	80%*	10%	10%	74%*	12%	14%	69%*	28%	3%
Lower health risk	78%*	8%	13%	73%*	12%	15%	76%*	19%	5%

Although no absolute "plain packages" were tested, the descriptors were associated with different perceptions about the three cigarette brand attributes. Note that relatively few subjects (2% to 18%) found "no difference" between the two packages they were shown in this study by Hammond and Parkinson.

Hammond et al. (2009) used an online survey in the UK of 516 adult smokers and 806 youth who were 11 – 17 years old. The sample was asked to compare one example of

different versions of a cigarette package, including levels of plain packaging, then report, "…on five measures of taste, tar delivery, health risk, attractiveness, and either ease of quitting (adults) or brand they would choose if trying smoking (youth)". The authors reported that, "…plain packs significantly reduced false beliefs about health risk and ease of quitting (adults)…and were tested as significantly less attractive and appealing to youth for trying smoking" (p. 1).

The format of this study with Hammond is similar to the design used in Hammond and Parkinson (2009) except more and different brands were used and plain packaging options were tested. The first three attributes ("delivers less tar", has "smoother taste" and has "lower health risks") were the same attributes used in Hammond and Parkinson (2009). One would expect that plain packages would prompt larger differences in perceptions when compared to fully branded packs, than was found for the descriptors like "6" vs. "10" prompted in Hammond and Parkinson (2009).

Figure 4 shows the comparisons used. With this Hammond study most adults and youth found no difference between most (82%) plain package comparisons with full branding packages. This is a very different result from the Hammond and Parkinson study in Canada where 18% or less ever rated "no difference" between two branded packs with different descriptors. The big differences in rating "no difference" between cigarette package options may in part be due to the method used (mall intercept vs. online). The mall intercept may have allowed for an effect of the interviewer to strongly bias the results by forcing a socially acceptable decision when they would tend to report "no difference".

For example, a comparison of a Lambert and Butler King Size vs. Lambert and Butler plain white background and small standardized type package had 69% of the youth sample finding no difference in their belief of lower health risk if they smoked cigarettes from that pack. A small and almost equal proportion of youth (15% full branding, 16% plain package) chose one of the two package options. These results support a later Germain et al. (2010) study that found that plain cigarette packages do not perform better than present packages on how the brand attributes are rated and how well the risk to health is viewed.

Figure 4: Hammond et al. (2009)

	Mayfair King Size White Background vs. Mayfair King Size 			Mayfair King Size Brown Background vs. Mayfair King Size 			Mayfair "Smooth" White Background vs. Mayfair King Size White Background 		
			No Difference			No Difference			No Difference
ADULTS									
Delivers less tar	26%	6%	68%	15%	14%	71%	55%	3%	42%
Smoother taste	16%	12%	62%	9%	18%	73%	66%	3%	31%
Lower health risk	20%	5%	75%	11%	11%	78%	42%	3%	55%
More attractive	13%	40%	47%	12%	39%	49%	15%	6%	79%
Easier to quit	16%	4%	80%	11%	7%	82%	24%	4%	72%
YOUTH									
Delivers less tar	22%	12%	66%	17%	16%	67%	55%	4%	41%
Smoother taste	15%	19%	66%	13%	20%	67%	67%	4%	29%
Lower health risk	17%	12%	71%	13%	16%	71%	44%	4%	52%
More attractive	6%	51%	43%	8%	49%	43%	18%	5%	77%
Try smoking	10%	30%	60%	8%	30%	62%	29%	7%	64%
	Lambert & Butler King Size vs. Lambert & Butler Brown Background 			**Lambert & Butler King Size vs. Lambert & Butler King Size White Background** 			**Lambert & Butler "Gold" Brown Background vs. Lambert & Butler King Size Brown Background** 		
			No Difference			No Difference			No Difference
ADULTS									
Delivers less tar	19%	13%	68%	9%	21%	70%	30%	7%	63%
Smoother taste	20%	11%	69%	13%	17%	70%	28%	6%	66%
Lower health risk	15%	9%	75%	6%	17%	77%	21%	5%	75%
More attractive	42%	9%	49%	39%	13%	48%	11%	6%	83%
Easier to quit	9%	10%	81%	5%	15%	80%	13%	4%	83%
YOUTH									
Delivers less tar	21%	18%	61%	15%	20%	65%	36%	8%	56%
Smoother taste	26%	12%	62%	23%	15%	62%	33%	6%	61%
Lower health risk	20%	13%	67%	15%	16%	69%	29%	6%	65%
More attractive	52%	7%	41%	52%	8%	40%	15%	6%	79%
Try smoking	33%	8%	59%	33%	9%	58%	21%	6%	73%

Hammond et al.'s (2009) measures of smoking behavior related to the brand package are novel for judging ease of quitting smoking and appear to have no previous use in

tobacco research or of their reliability and validity. The measure used for adult quitting was, “Which brand do you think would make it easier to quit smoking?” The youth were asked, “If you were to try smoking one of these brands which would you use?” The authors failed to provide any evidence that cigarette packaging is typically used or influential in that type of decision.

Cigarette Package Effects on Recall of Health Warning

Goldberg et al. tested regular branded and plain packages for cigarettes in terms of their potential effect on the correct recall of three health warnings. The evidence the authors used to base their expectation that plain packaging would get adolescents to, “…pay attention to the health warnings…” (p. 1434) was a 1995 Canadian document by the Minister of health Canada. The authors argued the effect of increasing the recall of health warnings, “…may be helpful…” in lowering smoking rates (p. 1434).The authors reported that plain packages with warnings obtained significantly higher recall of two of three health warnings, and worse recall for one message (“tobacco smoke causes fatal lung disease in non-smokers”). No association of the recall of cigarette warnings to decreased smoking was provided, nor was any evidence cited for the recognition of warnings being linked to smoking behavior.

Germain et al. (2010) reported on an experiment on plain vs. branded cigarette packages in Australia that was similar to Hammond et al. (2009). Hammond used a sample of UK adult smokers and 11 to 17 year old non-smokers (72% of sample) and others in various groups of smoking behavior. Germain et al. (2010) used a sample of Australian 14 to 17 year olds. Both studies used an online survey to expose their sample to comparisons of cigarette packages with decreasing brand visuals. Germain et al. added a plain package version to the experimental treatments used in Wakefield et al. (2008) that had a “morbid” pictorial health warning that accounted for 80% of the space.

The rationale for morbid warnings comes from the study of terror management and refers to strong visual warnings that are meant to instill fear in the audience. This fear is argued to reduce the person’s smoking. However, a recent study (Hansen et al. 2010) found these visuals may increase smoking in many smokers.

The present “morbid” warning takes up 30% of the space in Australia, and was used on all the other package formats (1-3) tested. Given the reports of how the present package has brand visuals that distract from the present warnings (Beede and Lawson 1992); Germain et al.’s method potentially offers an empirical comparison on recall of the warning. Figure 5 shows the treatments including the 80% of space warning with the plain package (pack 4 with a gangrene infected foot). This version of plain cigarette packaging has been recently proposed for required use in Australia (Roxon 2011).

Germain et al. (2010) found that overall recall of the health warning was 58% and was not significantly different by cigarette pack shown to the subject. There was no statistically ($p>.10$) significant difference between the present full branding cigarette package with 30% of the area covered in a visual morbid warning, or a plain cigarette package (only a small type size and standardized brand name) with 80% of the space covered in that “morbid” visual warning. The Germain et al. (2010) study shows the new warnings proposed for Australia won’t increase memory of the health warnings.

Figure 5: Germain et al. (2010)

Dissuasive effects of Cigarette Packaging

A very recent study by Hoek et al. (2010) tested the "dissuasive" effects of several cigarette packaging options reducing branding, and drastically increasing the size (to 50% and 75% of pack) of morbid warnings. Adult smokers 18 to 30 years old made up the sample that was exposed to 13 sets of photos with four pack options on each photo. This perspective is quite different from establishing the mere present package is a cause for continued smoking. The researchers are testing for the package that will best increase quitting behaviours and admit that the findings, "…may be affected by social desirability error. They (the findings) were not used to predict…the proportion smokers who would give up smoking, but to compare the relative effects of the two formats (present package and waning vs. small font brand name only with 75% of the pack covered in a morbid warning) p.3. However, one would expect most respondents to quickly realise that the experimenters were testing for packages that would dissuade smoking creating a bias called experimentally induced demand (Orne 1962).

Some evidence of this was noted by the authors in terms of inconsistent responses by respondents to some packages and "informal feedback" from some respondents that the morbid warning shown (advanced cancer of the neck) was more impactful (sic) than many of the graphics warnings in current rotation". Even if one accepted the findings as accurate, the findings did not show the mere present package and warning affected smoking behaviours.

Trade Press, Tobacco Company Documents and Smoker Audits

Moodie and Hastings (2009) published an article that used trade and smoker responses to changes in the UK cigarette packages over a five year period. The authors used what they termed a long-term audit (trade press articles, UK tobacco industry documents and an adult smoker's panel – average of n=20 at any time) that operated from April 2000 to September 2007. The composition of the panel was weighted for age (21 to 30 and 31 to 53), gender and social class. The panel used self completion diaries over a month. As Moodie and Hastings note, "The panel provided the opportunity to record any examples of tobacco marketing encountered (by smokers)."

Although the panel provided an insight into what adult smokers thought about the packaging over time, its small size and method obviously limits the extrapolation of their findings to any market. Nonetheless, it is interesting to note that tobacco industry documents and trade press reports were actively covering the evolution of new cigarette packaging. However, "The panel was highly price sensitive, with almost all reference to packaging relating to price-marking and value…the smokers' panel seldom mentioned image and innovation based packaging…" (Online company document).

Previous Experience with Generic Packages and Discount Brands

Two years after Beede and Lawson's 1992 publication, Howell et al. (1994) reported on the actual effects of generics and discounted brands on adolescents in the US market in the 1980s and early 1990s. This period was when the 'discount segment' share of the US cigarette sales went from about 2% in 1984 to more than 40% in 1993. Even after the major brands drastically lowered their prices on their premium brands, discount brands (including generics) accounted for 32 percent of the cigarette market three months later.

Cavin and Pierce (1996) reported on survey and sales data concerning the introduction of low cost and generic cigarette brands (from 1980 to 1993) on smoking behavior in California. Generic cigarettes were reported as the most frequently smoked brand by women over 45 years old. Did the significant rise in the share (20 – 40%) of these low price and generic brands act to suppress adolescent initiation and use, or lower adult smoker quitting as predicted by Beede and Lawson (1991;1992)?

Cavin and Pierce found that, "…recent quitting history was not a significant predictor of smoking generic brands after the effect of daily consumption was considered" (p. 20). Therefore, smokers using a generic brand with the same warning were no more likely to attempt to quit smoking than smokers that smoked a premium branded cigarette like Marlboro or Camel. This finding would not support the speculation of Beede and Lawson (1991, 1992) concerning the potential effectiveness of plain packages based on the data about generic cigarette sales in the US.

Adolescents in the Cavin and Pierce (1996) study reported lower purchase of generics (girls 7%, boys 3%) than the 12% in a DiFranza et al. 1994 study. The difference may be partially due to regional differences in the distribution of cigarettes in the two samples. Cavin and Pierce used California data while the earlier DiFranza et al. (1994) study was in Massachusetts. Nonetheless, Cavin and Pierce reported an increase in adolescent smoking during this period of generic and discount brand growth in cigarette market share that came after a long period of decreasing levels of adolescent smoking. The authors noted that, "…adolescents may be price sensitive…" (p. 20)… "we found no evidence to support the conjecture that US smoking prevalence declines may have been even larger in the absence of generics in the marketplace" (p. 21). It is clear that the popularity of these plain packaged "generic" brands, with little or no support by advertising and promotion, did not decrease the initiation of cigarette use by adolescents.

The role of reducing the price of cigarettes (generics were up to 40% less than premium brand prices) in young consumers' decisions was recently tested in Canada with longitudinal data that measured price reductions and increases from taxes. Sen et al. (2010) found a 10% drop in price was significantly associated with a 4% rise in youth smoking in 15 to 19 year olds and larger increases for 10 to 14 year olds.

Cummings et al. (1997) used two telephone surveys of adult smokers 25 to 64 years old to examine the characteristics of smokers who reported using discount and generic cigarettes in the US. The authors reported that discount/generic cigarettes increased from 6.2% in 1988, to about 23% five years later (1993). They cited other research that put the level at, "…37% of unit sales" (p. 525). They reported that, "respondents using discount/generic cigarettes were less likely to stop smoking or reduce cigarette consumption…compared with those using premium brand cigarettes" (p. 525). The authors noted that discount/generics made smoking more affordable (20 – 25% less for discount, 40 – 50% less for generics), "…which most likely has helped the cigarette industry retain customers sensitive to price, who might have otherwise reduced consumption or stopped smoking altogether" (p. 525). This evidence does not support Beede and Lawson's claimed effects of plain packages to reduce smokers' cravings for tobacco. Brand imagery developed from advertising and promotion aimed at consumers was not used so it could not be featured on the packages.

Siegel et al. (2000) looked at trends in adult smoking in California compared to the rest of the US from 1978 to 1994. Siegel et al. concur with Cummings et al.'s (1997) findings that there was an increase in the smoking initiation rates among 12 to 17 year olds, when discount and generic market share went from 11% (1988) to over 40% by June 1993. The percent of adult smokers buying generic brands, "…increased by 70% from 1990 to 1997" (p. 376). There was also no noticeable reduction of adult smokers quitting (quit ratio). Many smokers switched to discount or generic cigarettes in a bland or plain package with no brand name.

Summary and Conclusions

The support for further restrictions in cigarette packages should be based on whether there is evidence the present branded packages affects smoking behavior other than brand switching. This review of the peer-reviewed and published evidence shows that cigarette packages are important branding options that aid in differentiating brands (Keller 1991) in the eyes of the smokers. Although the research is mixed on whether most smokers can identify brands of cigarette without the package (Husband and Godfrey 1934; Ramond, Rachel and Mark 1950), the package can elicit perceptions by non-smokers and smokers about the attributes of the brands such as their taste, level of tar and attractiveness of the brand to the person. It has not been shown that smokers use the package in determining their use of cigarettes beyond associating it with the brand they are smoking.

- **Plain Packages Will Not Reduce Adolescent Smoking**

  There is no evidence that plain packages for cigarettes will affect youth smoking. Tobacco documents, government reports and academic research consistently report that adolescent users acquiesce to offers of a cigarette because of social pressure and their aspiration to be a member of the group that is smoking (Difranzia et al. 1994).

  The evidence that a plain package for cigarettes would tend to denigrate or de-normalize the image of the smoker(s) they want to emulate is anecdotal at

best. There is no empirical evidence that branded cigarette packages prompt favorable imagery linked to trial.

The research of Hammond et al. (2009) in the UK with youth 11 to 17 years old found most reported "no difference" between a plain cigarette package and a fully branded package in terms of their favorable view of the attributes of the brand or their interest to "try smoking". Germain et al. (2010) found that the 14 to 17 year old Australian youth in their sample reported similar levels of recall of the pictorial health warning irrespective of whether it was in the original brand packaging or a plain package with the "morbid" warning 267% larger (80% of the package) than the present warning. The present branded package is not more compelling to try for adolescents, and does not lower memory for the present warnings.

- **Plain Packages Will Not Reduce Tobacco Cravings**

The only study relevant for evaluating if plain cigarette packages induce fewer cravings for tobacco (Carter et al. (2006) found that even "neutral" photos without tobacco imagery evoked self-reported cravings for cigarettes by adult smokers. A photo of cigarette packages evoked the lowest cravings of the 12 photos of smoking, including photographs of others smoking or a lit cigarette in an ashtray. Therefore, one would expect far more craving evoking imagery from a smoker's observation of fellow smokers encountered throughout the day. Cravings for tobacco are not found with light users typical of adolescents' use (Shiffman et al. 1994). Viewing plain cigarette packages would not induce fewer tobacco cravings in smokers.

- **Plain Packages Will Not Make It Easier to Quit**

The literature covered on the effect of cigarette packaging using adults offers little published research that can provide evidence for quitting behavior. Wakefield et al. (2008) found there were no significant differences across the packs between present and plain packs in smokers' choice of, "a brand you might try/smoke" (p. 418). If this question is an indicator for future quitting, the

plain cigarette packages did not increase the smokers' perception of easier to quit.

Hammond et al. (2009) tested branded and plain packages with text descriptors (e.g., "King Size", "Gold") and asked, "Which brand do you think would make it easier to quit smoking?" (p. 2). When comparing brand packaging to their plain packaging options, only one of six perceptions (16%) showed a significant difference in terms of "easier to quit."

The research on the generic brand period (1980 – 94) in the US found adult smokers that wanted to quit tended to use generics as much as they used full branded or "premium" brand cigarettes (Cavin and Pierce 1996, Cummings et al. 1997). As the share of generics and no-brand options went up, quitting rates went down. The evidence is that generic cigarettes became very popular in the past. They would be expected to obtain a larger share of a market when the major brands lose their ability to differentiate their brand from other brands in the minds of consumers. Plain cigarette packaging has not been shown to help quitting based on the US generic and discount cigarette brand experience.

- **Plain Packages Will Not Reduce Relapse**

Relapse from quitting is often caused by peer pressure or cues in the environment that may be favorably associated with smoking and induce cravings for tobacco. Quitting smoking is typically an 18+ year old phenomenon. Carter et al. (2006) found that smokers that viewed a photograph of several full branded cigarette packages induced a lower level of craving than viewing five different photos of smokers without branding, or pictures of cigarettes in six versions of ashtrays (e.g., ashtray alone, with a cup of coffee). Quitting smoking went down (fewer smokers quit) during the generic packaging and discount brand period in the US, and those that reported smoking generic and discount brands were no more likely to quit than smokers of regular brands.

- **Plain Pack Will Not De-normalize Perceptions of Wide-Spread Use**
  Donovan et al. (2002) showed adolescents one of two branded cigarette packs and had them rate the smoker of the brand. Relatively few adolescents rated the cigarette brand user "someone they would like" (up to 22%) or "like me" (up to 20%). Further, the large generic package share increase in the US in the 1980s to mid 1990s failed to reduce the perceived or actual prevalence of youth smoking.

- **Possible Unintended Negative Consequences of Plain Cigarette Packages**
  There are a number of possible negative unintended consequences of requiring the plain packaging of cigarettes. To the extent that generic branded cigarettes represent an analogy to plain cigarette packaging, mandating plain packaging will not reduce smoking intake by adolescents, quitting rates or relapses from quitting. Generic and discount brands rise in market share (up to 40%) in the US was associated with an increase in the rate of adolescent initiation to smoking (Howell et al. 1994, Cavin and Pierce 1996) and a reduction in the level of smokers quitting smoking.

Although the present body of literature on requiring plain packaging is thought-provoking, it does not provide evidence that it will reduce smoking. There is substantial evidence that the use of plain cigarette packaging has no effect on intended trial or quitting in experiments comparing branded and plain packaging. Smoking by youth and adults increased when generic packaged cigarettes, often viewed as a prototype for plain cigarette packaging, were introduced in the US.

Bibliography

ALSOP, R. 1989. The American Way of Buying: Brand Loyalty Is Rarely Blind Loyalty – Rise in Coupons, Choices Blamed for '80s Erosion. Wall Street Journal. Oct. 19. p. 1.

BEEDE, P. & LAWSON, R. 1991. Brand image attraction: The promotional impact of cigarette packaging. New Zealand Family Physician, 18, 175.

BEEDE, P. & LAWSON, R. 1992. The effect of plain packages on the perception of cigarette health warnings. Public Health, 106, 315-322.

CARTER, O. B. J., MILLS, B. W. & DONOVAN, R. J. 2009. The effect of retail cigarette pack displays on unplanned purchases: results from immediate post purchase interviews. Tobacco Control, 18, 218-221.

CAVIN, S. W. & PIERCE, J. P. 1996. Low-cost cigarettes and smoking behavior in California, 1990-1993. American Journal of Preventive Medicine, 12, 17-21.

CUMMINGS, K. M., HYLAND, A., LEWIT, E. & SHOPLAND, D. 1997. Use of discount cigarettes by smokers in 20 communities in the United States, 1988-1993. Tobacco Control, 6, s25-s30.

DIFRANZA, J. R., EDDY, J. J., BROWN, L. F., RYAN, J. L. & BOGOJAVLENSKY, A. 1994. Tobacco acquisition and cigarette brand selection among youth. Tobacco Control, 3, 334-338.

DONOVAN, R. J., JANCEY, J. & JONES, S. 2002. Tobacco point of sale advertising increases positive brand user imagery. Tobacco Control, 11, 191-194.

GOLDBERG, M. E., LIEFELD, J., MADILL, J. & VREDENBURG, H. 1999. The effect of plain packaging on response to health warnings. American Journal of Public Health, 89, 1434.

HANSEN, J., S. WINSERAND S. TOPOLINSKI 2010. When death makes you smoke: a terror management perspective on the effectiveness of cigarette on-pack warnings. Journal of Experimental Social Psychology, 46, 2, 226-228.

HOEK, J. CHRISTING WONG, PHILIP GRENDALL, JORDAN LOUVIERE AND KAREN CONG 2010. Effects of dissuasive packaging on young adult smokers, Tobacco Control, online from Tobacco Control October 21, 2010.

HOWELL, C., CONGELIO, F. & YATSKO, R. 1994. Pricing Practices for Tobacco Products, 1980-94. Monthly Labor Review, 117, 3-16.

HUSBAND, R. W. & GODFREY, J. 1934. An experimental study of cigarette identification. Journal of Applied Psychology, 18, 220-223.

KELLER, L. (2001). Building customer-based brand equity, Marketing Management, 10, 2, 14-20.

MOODIE, C. & HASTINGS, G. 2010. Tobacco packaging as promotion. Tobacco Control, 19, 168-170.

MURPHY, C., C. LOVATO & m. KAISERMAN 2002. 2002 Youth Smoking Survey-Technical Report. Health Canada. 1-14.

ORNE, M. T. 1962. On the social psychology of the psychological experiment: With particular reference to demand characteristics and their implications.

American Psychologist, 17, 776-783.

O'LEARY, C. 2011. Tobacco firms set to fight packaging plan in courts. The West Australian, April 8, p. 16.

PADILLA, J. & WATSON, N. 2010. A critical review of the literature on generic packaging for cigarettes. Belgium: LECG Consulting Belgium.

PAYNTER, J. & EDWARDS, R. 2009. The impact of tobacco promotion at the point of sale: A systematic review. Nicotine & Tobacco Research, 11, 25-35.

RAMOND, C. K., RACHAL, L. H. & MARKS, M. R. 1950. Brand discrimination among cigarette smokers. Journal of Applied Psychology, 34, 282-284.

ROXON, N. 2011. World's toughest anti-smoking laws released. Media release, Australian Government, Department of Health and Aging. 7 April 2011.

SAYETTE, M. A., MARTIN, C. S., WERTZ, J. M., SHIFFMAN, S. & PERROTT, M. A. 2001. A multi-dimensional analysis of cue-elicited craving in heavy smokers and tobacco chippers. Addiction, 96, 1419-1432.

SCHEFFELS, J. 2008. A difference that makes a difference: young adult smokers' accounts of cigarette brands and package design. Tobacco Control, 17, 118-122.

SEN, S., ARIIZUMI, H., & DRIAMBE. 2010. Do changes in cigarette taxes impact youth smoking? Evidence from Canadian Provinces. Forum for Health Economics & Policy, Berkley Electronic Press. Vol. 13, No. 4.

SHIFFMAN, S., KASSEL, J. D., PATY, J., GNYS, M. & ZETTLER-SEGAL, M. 1994. Smoking typology profiles of chippers and regular smokers. Journal of Substance Abuse, 6, 21-35.

SIEGEL, M., MOWREY, P. D., PECHACEK, T. P., STRAUSS, W. J., SCHOOLEY, M. W., MERRITT, R. K., NOVOTNY, T. E., GIOVINO, G. A., & ERIKSEN, M. P. 2000. Trends in adult cigarette smoking in California compared with the rest of the United States, 1978-1994. American Journal of Public Health. 90, 372-379.

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Professor Mizerski was paid by Phillip Morris International to provide a critique of the research concerning the role of cigarette packaging in any initial and continuing effects on youth and adult smoking behaviours. Material from this review was subsequently peer-reviewed and accepted as a working paper and presentation at the 2011 Marketing and Public Policy Conference in Washington DC in June.