

# Proscription and its impact on anti-consumption behaviour and attitudes: the case of plastic bags

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- *This paper empirically examines whether proscription of a habitual consumption item can act as a mechanism to develop anti-consumption behaviour and attitudes. The paper tracks a legislated retail ban on single-use polyethylene plastic bags, analysing 1167 interviews with shoppers before the ban's announcement, during a 4-month phasing-out period (and demarketing campaign), and when the ban was in full effect. Two hundred and fifty three interviews are repeated with the same individuals to allow identification of individual-level attitudinal and behavioural change.*

*Anti-consumption is typically conceptualised as a phenomenon based on choice. This research investigates how shoppers react when forced into anti-consumption behaviour, and how supportive voluntary anti-consumers are of others being made to change.*

*Grouping shoppers according to their level of voluntary anti-consumption of plastic bags before the ban, the analysis finds that shoppers who voluntarily showed anti-consumption behaviour were the only group showing any voluntary shift in anti-consumption behaviours during the phasing-out period. These shoppers are supportive of forcing others to show anti-consumption, while the level of behavioural and attitudinal resistance from shoppers that showed little or no voluntary anti-consumption is low. These findings support the use of proscription to achieve anti-consumption behaviours, however, proscription does not necessarily engender full anti-consumption attitudes.*

*This study adds to knowledge on anti-consumption and shopper resistance to proscriptive interventions designed to reduce socially undesirable behaviours. It provides further evidence that demarketing campaigns, without accompanying negative reinforcers, may be insufficient to achieve widespread behavioural change alone.*

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## **Introduction**

Grocery shopping is a low-involvement, habitual activity (Winter and Rossiter, 1989; McDonald and Ehrenberg, 2002) with the use of free, single-use plastic bags to pack and transport purchased goods being an

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entrenched shopper behaviour since the early 1980s. Plastic bags have such common usage mainly because they are strong and convenient (Hayabuchi *et al.*, 2005). Globally, between four and five trillion plastic bags are produced each year (Ellis *et al.*, 2005). In Australia alone, 6.9 billion new plastic bags are consumed annually, with only 3 per cent of these bags being recycled and up to 80 million becoming litter (Smith, 2004; Wan, 2007). Plastic bags from supermarkets now account for over half of all the new plastic bags used in Australia (Smith, 2004), with an estimated average usage rate of 10 bags per week, per shopper (James and Grant, 2006). This makes the retail context an obvious starting point for interventions to reduce plastic bag usage, and in 2009 the state of South Australia banned single-use polyethylene plastic bags altogether from the retail environment. The ban was preceded by a 4-month phasing-out period, used to run a significant demarketing campaign educating retailers about the impending ban and encouraging shoppers to adopt the new behaviour of taking their own shopping bags. During this phasing-out period retailers could still provide free plastic bags, but they also had to offer paid-for alternatives such as compostable plastic bags and 'green' bags designed for multiple use. On 4 May 2009, the ban came into full effect and free single-use plastic bags could no longer be offered, with shoppers having to pay for any store-provided bags if they forgot to bring their own.

Rarely have anti-consumption interventions been so proscriptive, particularly on such a wide scale. Efforts to reduce consumption to date have more typically been concentrated on environmental taxes in the areas of air, water, energy and waste (Convery *et al.*, 2007). This leaves a gap in the literature as to how shoppers will respond to a proscription to achieve anti-consumption outcomes. Yet the greatest impact in addressing environmental problems usually requires large-scale and long-term changes in people's behaviours, often meaning intervention at a public policy level (Geller, 1989). This paper goes some way towards addressing this gap.

Prior to the ban, shoppers could exhibit three types of shopping bag behaviour. Some showed full voluntary anti-consumption behaviour, taking their own bags shopping. Others showed partial anti-consumption behaviour, inconsistently taking their own bags and relying at least partially on store-provided bags. The remainder showed no anti-consumption behaviour and were completely reliant on store-provided bags. This paper examines the attitudes and behaviours of shoppers across the spectrum of pre-ban behaviours, as the proscription came into effect. Prior research on plastic bags is reviewed, illustrating the case for why they are becoming a focus for intervention strategies. Anti-consumption, resistance, and demarketing literature is employed as background from which to understand the behavioural and attitudinal responses that might be seen in response to a proscription in this context.

Anti-consumption is conceptualised as a consumer-based phenomenon and one based on choice (Cherrier, 2008). A key contribution of this research is to examine if anti-consumption can be forced at a category-wide level. The research explores new territory through providing insight not only into how shoppers react when forced into anti-consumption behaviour, but also how supportive voluntary anti-consumers are of others being made to change.

### *The proscription on plastic bags*

In 2006, the state of South Australia took the decision to ban altogether, from the retail environment, single-use polyethylene plastic bags with handles, less than 35 microns thick. The ban applied to all retailers and take-away food outlets and, once implemented, there were on-the-spot fines for retailers of \$AU315 for breach of these regulations. South Australia was the first, and still is the only, Australian state to impose a proscription. It was estimated that there would be almost 400 million fewer plastic bags per year in South Australia as a result of this ban (Zero Waste SA, 2008b).

Compostable plastic bags that meet the Australian Standard AS 4736-2006, barrier

bags, paper bags, boutique-style bags and bags designed for multiple use such as 'green bags' can all be offered under the ban. These bags are typically charged to the consumer. Compostable bags start at around five cents and green bags cost up to around three dollars. Under the ban, a shopper can show anti-consumption behaviour by taking his or her own bags shopping. If they do not take their own bags, they can show a willingness to be compliant in the future through investing in 'green' reusable bags; or alternatively they can treat the ban more as a levy by paying for single-use plastic bags – but ones that are compostable.

The proscription occurred in stages. On 1 January 2009, a 4-month phasing-out period began, with the complete ban coming into effect on 4 May 2009. During the phasing-out period, retailers had to offer alternative bags for purchase so that shoppers had a choice to avoid the banned plastic bags if they were using store-supplied bags. During these 4 months Zero Waste SA, the government agency charged with implementing the ban, ran a significant demarketing campaign. The campaign required retailers to display signs at every register reminding consumers about the ban. An official retailer kit was sent to businesses, and a telephone hotline and website established. Additionally, a shopper campaign raised awareness of and reasons for the ban and reminded shoppers to take their own bags shopping. The shopper campaign ran across press, radio, television and outdoor, with an overall budget in the vicinity of \$AU800 000.

### ***Prior research on plastic bags***

Low recycling and reuse rates plague all recyclable plastics, but plastic bags in particular (Spokas, 2008). Plastic bags are produced from non-renewable resources such as petroleum, ethylene and coal (Environment Protection and Heritage Council, 2002; Wan, 2008). 'Green bags' require about four and a half times less energy to produce and have three times less impact on greenhouse gas emissions. Even compostable bags consume

less than one-third of the energy of polyethylene plastic bags to decompose (Zero Waste SA, 2008a).

Voluntary anti-consumption behaviour of store-provided plastic bags is low, with Hayabuchi *et al.* (2005) observing, at best, a 25 per cent level of voluntary shopper refusal to take store-provided bags. But given the strong rationale for their reduced usage, a wide range of tactics has been adopted internationally to discourage consumption. Ireland, China, New Zealand, Italy, Hong Kong, India, Bangladesh, Taiwan and Rwanda are among countries that have been at least partially successful in reducing consumption of plastic bags through plastic bag taxes, minimum thickness rules, demarketing, outright bans, encouraging retailers to charge for plastic bags and educating consumers to use alternatives such as 'green' bags (Clean Up the World, 2007).

Despite the increased focus in this area, surprisingly little academic research has been conducted to evaluate the effects of such policies. The 2002 introduction of a 15 euro-cent tax in Ireland is one of the few investigated, examining the levy from an economic perspective (Convery *et al.*, 2007). While the levy was shown to be effective in terms of actual reduced usage of bags, the evaluation focus was the impact on retailers. While acknowledging the restricted nature of their shopper sample, the authors draw the key conclusions that respondents were very much in favour of the levy – virtually all indicated they felt its impact on the environment was positive. However, these issues were not examined based on the whether the respondents were or were not engaged in the consumption of plastic bags prior to the levy, and the level of voluntary anti-consumption was not reported.

Other work by Cherrier (2006) on voluntary anti-consumption of plastic bags observed that there appeared to be no clear gender or age specific profile for 'green bag' shoppers, suggesting that this segment cannot be distinguished demographically. The author's existential phenomenological interviews

established that these shoppers displayed environmental consciousness and that the repetition of taking their own shopping bags had led to greater reflection on the environmental impact of plastic bag consumption. This finding suggests that moral avoidance is the key driver of anti-consumption behaviour for plastic bags, because of their ideological incompatibility with the individual's held beliefs (Lee *et al.*, 2009). This raises the question of whether proscription can be effective in creating attitudes that are consistent with the forced anti-consumption behaviour that such a move brings.

Clearly there are good reasons to encourage shoppers not to use plastic bags, but achieving this is a significant challenge given that the behaviours are entrenched and habitual, and plastic bags are provided free of charge.

### **Conceptualisation of the study**

#### **Anti-consumption**

Consumption is a behaviour that generally provides consumers with satisfaction of self-needs and comfort, and assists them in constructing their self-identity (Ewen, 1988; Zavestoski, 2002; Lee *et al.*, 2009). Anti-consumers are less likely than others to use consumption to satisfy these needs (Zavestoski, 2002) and instead cultivate non-materialistic sources of satisfaction and meaning (Etzioni, 1998).

The anti-consumption movement has seen considerable advancements in the last few decades, fuelled by increasing concerns for the environment, over-consumption and extensive advertising (Craig-Lees and Hill, 2002). Some anti-consumers downshift or significantly reduce their overall level of material consumption, in return for a simpler life (Etzioni, 1998; Huneke, 2005). Others may only reject certain product categories or brands (Iyer and Muncy, 2009). Regardless of the extent of the change, one of the main qualities of an anti-consumer is that they choose to become an anti-consumer voluntarily. Zavestoski (2002) explains anti-consumption as the distaste, resistance or resentment to consumption, suggesting that it

is not merely a behavioural phenomenon but also an attitudinal one (Cherrier, 2008). In other words, for consumers to become anti-consumers they need to hold attitudes that are in line with their anti-consumption behaviours (Iyer and Muncy, 2009).

Little is known about how consumers will react when forced to adopt anti-consumption behaviours, even when there may be convincing environmental and economic arguments for the change. It is unclear whether shoppers forced to cease consumption of plastic bags will develop attitudes congruent with this new behaviour, or whether they will simply be behaviourally compliant.

Furthermore, while it might be expected that shoppers voluntarily engaged in anti-consumption prior to the ban will be most supportive of its implementation, this is also unknown. In their study on boycotting, Kozinets and Handelman (1998) describe anti-consumption behaviour as a means to stand out from the crowd; an activity valued for its ability to convey uniqueness and define a personal morality. It may be that voluntary anti-consumers will disapprove of their chosen behaviour being forced upon others, depriving it of its power of self-expression.

There have been pleas to replace 'armchair theorising' with actual research to evaluate the effect of interventions encouraging anti-consumption, to help policy makers better understand and influence this behaviour (Stern, 1999; Zavestoski, 2002).

#### **The potential for shopper resistance**

Resistance is seen as a normal human response to change (Carrigan *et al.*, 2004). The overt marketing of a social objective, such as reducing plastic bag usage, gives rise to the opportunity for consumer resistance (Geller, 1989) with such actions potentially being viewed as 'manipulative' or Orwellian (Kotler and Zaltman, 1971). A widespread forced change in behaviour can cultivate perceptions of domination and cause the most resentment (Stern, 1999; Cherrier, 2006; Wall, 2007), particularly when the behaviour in question is habitual (Carrigan

*et al.*, 2004). All these aspects are present in the plastic bag ban. The proscription is, therefore, likely to result in some consumer resistance, potentially in the form of voter backlash (Wall, 2005), making it vital for policy makers to understand the impact.

There is some prior evidence of shopper resistance to plastic bag reduction initiatives, but the findings are limited and mixed. While Convery's (2007) research indicates consumer support, in New Zealand, a voluntary 5 cent retailer levy on plastic bags was reversed just 4 weeks after introduction when it met 'significant consumer resistance' (Weekend Herald, 2009). Media commentators in Australia, prior to the South Australian ban, reacted negatively towards it and alluded to expected shopper resistance (e.g. Razer, 2009; Abraham, 2009).

With the ban in effect, the main way shoppers are behaviourally empowered to show resistance is in their choice to bring their own bags or to buy from a retailer. They also have a secondary choice in what type of bag they buy from a retailer when they do not bring their own - whether they buy a 'green bag', signalling an intention to become behaviourally compliant on subsequent shopping trips, or opt for single-use compostable plastic. Understanding these choices will give insight into whether the proscription achieves its anti-consumption aim or whether shoppers are still opting for plastic, but now just paying for it. Additionally, resistance can be shown attitudinally through holding attitudes that are not in line with the cessation in behaviour. This would be exhibited as not supporting the ban and not feeling it is having any impact. Such a lack of moral avoidance underlying observed behaviours would contrast the findings of Cherrier (2006) and suggest anti-consumption, in the full sense of the word, cannot be created.

### **Interventions and the role of demarketing**

Demarketing involves using marketing tools such as increasing prices, reducing distribution outlets or stock, educational programs and/or reducing services (Kotler and Levy, 1973) to

help shape and change shopper demand. The concept has extended from its original product context to include situations where external agencies, such as government, seek to eliminate undesirable consumer demand (Wall, 2005; Wall, 2007; Shiu *et al.*, 2009).

To date, demarketing has been most notably applied to public programs in relation to smoking cessation, reducing binge drinking and reducing private car usage. Many demarketing programs have been information intensive, often failing to change behaviour (McKenzie-Mohr, 2000). As such, direct bans on behaviours have been found to be equally, if not more, effective than any mix of demarketing measures alone (Wall, 2005).

Nevertheless, in the context of taking own shopping bags, the importance of continuous environmental education campaigns for encouragement and habituation of new behaviours has been noted (Hayabuchi *et al.*, 2005). The 2009 voluntary retailer levy on plastic bags in New Zealand was not accompanied by a demarketing campaign of any magnitude. Such a program may have led to different outcomes in terms of shopper resistance and the decision to reverse the levy. In this respect, it is important to understand how demarketing activities are received and their impact on developing anti-consumption behaviours and attitudes.

The effectiveness of the demarketing campaign in achieving voluntary compliance during the phasing-out period, when plastic bags are still supplied free of charge, can identify the speed at which anti-consumption behaviour is adopted and whether it is achieved without the need for negative reinforcements. Accordingly, this research looks at the level of awareness and advertising recall of the demarketing campaign, and identifies the level of shopper resistance (both behavioural and attitudinal) during the phasing-out period.

### **Data and methods**

#### **Research design, respondent selection and data collection procedures**

The first research stage consisted of 510, 12-minute telephone interviews conducted

before the ban was passed as legislation and 4 months before the phasing-out began. This stage serves as a benchmark for behaviours and attitudes. The second research stage consisted of 403, 10-minute telephone interviews conducted 2 months into the phasing-out period. The data from this stage are used to evaluate the demarketing campaign and to determine the level of voluntary compliance with the ban in the absence of negative consequences. The third stage comprised 502, 14-minute telephone interviews, conducted 2 months after the ban had come into full effect. This stage is used to examine research questions relating to the full effect of the ban when negative consequences for non-compliance are in effect and also to assess change in behaviour and attitudes over time.

Data were collected using a quality accredited, commercial telephone interviewing field team. Respondents were randomly recruited from the electronic White Pages and screened for undertaking a minimum of half their household's grocery shopping (or being the main household shopper), to ensure that only shoppers on whom the ban would have a direct effect were included. All respondents lived in the state of South Australia where the ban was implemented. The sample was representative in terms of the regional and metropolitan spread of the population. Refusal rates at each stage were at standard telephone fieldwork levels, suggesting that the sample was a good representation of shoppers and not skewed to voluntary anti-consumers.

Stage 2 interviews were conducted with a different sample of randomly chosen respondents. For stage 3, the research design had a longitudinal element, with half of the sample from stage 1 being re-interviewed at stage 3. This re-interviewing allowed for the identification of real attitudinal and behavioural changes. Non-response bias amongst the re-contacts was unlikely as evidenced by a response rate of over 60 per cent in the follow-up interviews (Gendall, 2000) and by their pre-intervention bag usage behaviour profile matching that of the overall benchmark sample. The other 254 stage 3 interviews were

with a new cohort of randomly recruited respondents. Their results were compared with the re-interviewed respondents to ensure conditioning was not an issue and to be able to examine issues of awareness amongst the general shopper population.

### Instrument design and analysis

Respondents were asked to generalise about their own behaviour in terms of how many times out of 10 they would undertake a behaviour of interest. They were also asked about their last shopping trip behaviour so that specific (and perhaps more accurately recalled) as well as general behaviours could be established.

Key attitudinal measures included the respondent's support for the ban, which was asked at each stage of the research. In the third research stage, respondents were also asked if they felt the ban was having an impact, with responses recorded on a yes/no/unsure basis.

To obtain a level of sensitivity in the data, eleven-point (0 to 10) scales were used for many of the response sets. In these cases, '0' was attributed the verbal anchor of 'never' for behaviours, 'not at all supportive' for support statements and 'completely disagree' for agreement questions. '10' was attributed the verbal anchor of 'always' for behaviours, 'completely supportive' for support statements and 'completely agree' for agreement questions. Details of the behavioural and attitudinal measures can be found in Appendix 1.

Analysis was conducted using SPSS 17, with descriptive statistics, such as frequencies and means, being primarily used to address the research questions relating to each stage of the ban. Multivariate analyses of cross tabulations, ANOVAs, and independent two-sample *t*-tests were used for the independent cross-sectional data set analyses. Paired *t*-tests were used in analysis of the longitudinal data from the same respondents to also identify significant change between the benchmark and stage 3 research results.

## Results and discussion

### Benchmark behaviours and attitudes

Anti-consumption behaviour for this category was familiar to many shoppers prior to the ban, with 60 per cent of respondents claiming to 'generally take their own bags shopping', 22 per cent saying they used a mix of their own and store provided bags and only 18 per cent claiming exclusive use of store-provided plastic bags. This generalised behaviour claim defines the three anti-consumption segments.

The partial or complete anti-consumption behaviour was entrenched, with 76 per cent of respondents who said they took their own bags to meet all or some of their shopping needs claiming to have done so for over a year. But if approximately eight in 10 shoppers were taking their own bags consistently, there would have been no need for a ban. The estimate is also significantly higher than the 25 per cent incidence observed in prior research (Hayabuchi *et al.*, 2005), although this observation was made in Japan where retail conditions are different. This raises the question of respondents over-claiming their behaviour, or alternatively, response bias. Certainly over-claiming is likely, given it is a behaviour for which exhibiting anti-consumption is socially desirable, and that standard response rates seen for the fieldwork suggesting response bias is not driving the result.

Further detailed questioning revealed far less widespread and more inconsistent use of own bags, supporting the idea of over-claiming. Overall, 80 per cent of all respondents said that, in a typical week, they would use at least some store-supplied plastic bags. On average, shoppers who said they used their own bags to shop at least some of the time, estimated that they forgot their own bags on 2.4 out of 10 shopping trips. Similarly, these shoppers also estimated that they failed to take enough bags to carry all their groceries on 2.7 out of 10 trips. So, while the level of claimed own-bag shopping was high, it appears that many shoppers still ended up with plastic checkout bags due to unintended lapses in anti-consumption behaviour. Further support

comes from an examination of the respondent's last supermarket shopping trip. Only 45 per cent of the sample required no store bags on their last trip, 33 per cent were entirely reliant on store bags and 22 per cent used both. The one-third of the sample using plastic bags exclusively is higher than the 18 per cent who earlier claimed that they generally use this option and provides a more realistic picture of actual rather than generalised behaviour. These findings indicate that, while there was a group of shoppers that voluntarily demonstrated anti-consumption of plastic bags, the proscription would still have mass-market impact on over half of all shoppers, making such a campaign relevant.

In terms of being able to demographically identify the voluntary anti-consumption segment of shoppers, there appeared to be a skew to females. Only 15 per cent of females claimed to 'generally use plastic bags' compared to 32 per cent of males ( $\chi^2 = 24$ ,  $df = 4$ ,  $p < 0.001$ ). Furthermore, a higher proportion of females said they had taken their own bags on the last shopping trip (64%) compared to males (44%;  $\chi^2 = 19$ ,  $df = 3$ ,  $p < 0.001$ ). However, the shopper population is skewed to females. It could be that the males in the sample had less responsibility for shopping and so would be less entrenched in the behaviour of taking their own bags. Certainly the female shoppers in the sample had higher claimed responsibility for household shopping with 84 per cent claiming they did '90-100 per cent' compared to just 53 per cent of males ( $\chi^2 = 63$ ,  $df = 6$ ,  $p < 0.001$ ). When shopper responsibility was controlled for by just considering the '90-100 per cent' responsible shoppers, the gender effects are, however, still significant in the behaviour of taking own bags shopping on their last trip (67% females compared to 38% males,  $\chi^2 = 20$ ,  $df = 3$ ,  $p < 0.001$ ).

In support of the exploratory work of Cherrier (2006), age did not have a significant relationship with anti-consumption behaviour for either general behaviour claims or last trip behaviour. Other potential demographic identifiers examined were household structure,

household pre-tax income, respondent's highest completed education level, work status and metropolitan versus regional location. None of these demographics were identifiers of the voluntary anti-consumers.

Claimed awareness of the ban prior to legalisation being passed was high at 95 per cent and with half of the respondents saying they had been aware of the impending ban for 10 months or longer. However, of those aware of the ban, 75 per cent were unsure of when the phasing-out was to begin and only 16 per cent could name the correct start date of the ban. This again indicates scope for the demarketing campaign to educate, but highlights that shoppers using plastic bags were already aware of the need to change their behaviour.

The overall mean support score for the ban was 8.2 out of 10, indicating high levels of support for the ban and low levels of customer resistance. Shoppers voluntarily engaged in anti-consumption behaviour prior to the ban were most supportive. Shoppers generally claiming to take their own bags shopping ( $n=298$ ) gave a support score of 8.9, compared to 6.0 for those who said they used store bags exclusively ( $n=87$ ) and 7.7 for those who used a mix of both store provided and own bags ( $n=109$ ,  $F=22$ ,  $df=4$ ,  $490$ ,  $p<0.001$ ). This provides evidence that anti-consumers will be supportive of others being forced to adopt their behaviour, even though they themselves may adopt it in pursuit of uniqueness or self-expression (Kozinets and Handelman, 1998).

Interestingly, amongst those showing no voluntary anti-consumption behaviour, only 22 per cent gave a support score of three or lower for the ban, while 49 per cent gave a score of 7 or above, with 22 per cent 'neutral'. It appears that the majority of consumers were largely supportive of being forced into anti-consumption behaviour.

Amongst those who did not support the ban (those giving a support score of three or lower), key reasons for their views did not include the proscriptive nature of the ban. Perhaps the ban is not thought to impinge on

consumer freedoms to the extent that it would be perceived as domination or an unfair use of power, or the environmental rationale behind the ban was a strong appeal against any expected personal inconvenience.

### The phasing-out and demarketing campaign

Two months into the phasing-out period, awareness of the ban was almost total, and seven in 10 respondents said they were aware of the demarketing campaign. However, upon further questioning 40 per cent of these respondents were unable to describe any of the campaign's advertising executions. Of those who could, the most commonly recalled advertising was for retailer displays (refer **Table 1**). The other media had much lower levels of recall, highlighting the importance of a call-to-action close to the point where behaviour change is required. Across the whole sample, 42 per cent of respondents could recall, without prompting, at least one advertising execution. Approximately nine out of 10 respondents who recalled the detail of at least one advertisement were already taking their reusable bags shopping with them. This tendency for people to possess heightened awareness for communications portraying behaviours they are already engaged in is noted in marketing literature – people have a higher tendency to notice advertisements for brands they already buy (Sharp *et al.*, 2001; Romaniuk and Wight, 2009). The finding highlights the challenge communication campaigns face to move beyond 'preaching to the converted' and reach new audiences.

Awareness of the campaign rose when aided descriptions of each advertising execution were read to those who could not describe them unaided (refer Table 1). Overall, 84 per cent of the sample recalled at least one specific advertising execution either unprompted or aided. There was no difference in prompted recall between the different shopper segments, with awareness high across the board.

In terms of voluntary behavioural compliance, there was no significant change from pre-

**Table 1.** Recall of demarketing campaign (prompted and aided recall)

	Unprompted recall		Aided recall	
	<i>n</i>	%	<i>n</i>	%
Retailer in-store displays	88	31	275	68
Newspaper	41	15	142	35
Television	43	15	141	35
Radio	26	9	72	18
Outdoor	4	1	67	17
None of these	111	40	—	—
Total		>100		>100

ban claimed behaviour, with 63 per cent of shoppers saying they 'generally took their own bags shopping' and 68 per cent saying they had done so on their last trip. The segment of shoppers who said they were reliant on store-provided bags during the phasing-out claimed to receive plastic bags on their last trip in 93 per cent of cases. This is the same level as seen for this segment in the benchmark stage. Those who said they used a mix of store-provided and own bags also showed the same resistance to voluntary compliance, with no significant change in their receiving at least some plastic on their last trip. The anti-consumer segment, however, reduced their level of accepting a plastic bag on their last trip from 38 per cent acceptance in the benchmark to just 18 per cent during the phasing-out ( $t = 5.3$ ,  $df = 1$ ,  $p < 0.001$ ). This suggests that those already showing the voluntary compliance before the ban were those most responsive to the demarketing campaign, making their lapses in own-bag behaviour even fewer.

To further investigate shoppers' behavioural resistance to the demarketing campaign, the choices of those who took their own bags shopping but sometimes forgot or did not take enough (68% of the sample) were examined. In 65 per cent of cases, these respondents still chose to accept free plastic bags. It appears that the demarketing campaign was not sufficient, at least in the first instance, to effect behavioural change. This is consistent

with previous findings on the effectiveness of informational campaigns (McKenzie-Mohr, 2000).

Attitudinally, overall shopper support for the ban fell slightly but significantly in the phasing-out period, with the average support score dropping from 8.2 to 7.7 ( $t = 2.1$ ,  $df = 893$ ,  $p < 0.04$ ). Again, the pattern of higher support was seen from shoppers already showing voluntary anti-consumption (mean of 8.6), compared to those solely using store provided bags (mean 5.2) or a mix of own and store bags (mean 7.0,  $F = 34$ ,  $df = 2$ , 398,  $p < 0.001$ ). The drop in mean score fell across all the segment groups, and was not particularly driven by any one group, perhaps reflecting higher salience amongst the segments where effort would be needed to change behaviour under the ban, even if it was just to improve the consistency with which they took their own bags.

#### Ban in effect and resultant anti-consumption

Once the proscription was effective, behavioural compliance rose sharply with 95 per cent claiming generally to take their own bags, compared to approximately 60 per cent in the benchmark and phasing-out periods.

The newness of behaviour for many respondents was seen in their claimed last-trip behaviour. Examining just the respondents who were interviewed both pre- and post-ban, 94 per cent claimed to take their own shopping bags on their last shop compared to a 60 per cent incidence at the benchmark phase. The behaviour of taking own bags was also more prevalent and consistent with incidences of forgetting to take bags decreasing from 2.2 to 1.1 trips in ten ( $t = 6.3$ ,  $df = 202$ ,  $p < 0.001$ ) and not taking enough decreasing from 1.8 to 0.9 trips for the re-interviewed respondents ( $t = 4.8$ ,  $df = 202$ ,  $p < 0.001$ ). The proscription therefore achieved behavioural anti-consumption.

Again, the choices of shoppers who forgot to take bags or did not take enough (two-thirds of

all respondents post-ban) were investigated. In this scenario, 29 per cent said that they try to carry the groceries or to use the trolley instead, thereby avoiding a bag purchase of any kind. Twenty seven per cent bought more 'green bags', 18 per cent bought compostable plastic bags, while only 8 per cent changed shopping behaviour by buying fewer things (4%) or overfilling their existing bags (4%). The remaining respondents had not yet confronted the situation. This shows that behavioural compliance, in terms of avoiding bag use or purchasing reusable bags - although more widespread than in the phasing-out period - is still not universal. A segment of shoppers are opting to pay for old behaviours (purchasing single-use bags) in a significant number of instances when the choice is put to them. Examining just the re-interviewed respondents, those opting to buy compostable plastic bags could not be identified from their pre-ban segment membership. It does not appear that a segment exists that refuses to adapt behaviourally to the proscription.

Attitudinal support was effectively unchanged from benchmark levels for the new sample of respondents that were only interviewed post-ban (mean 8.3,  $t = .8$ ,  $df = 746$ ,  $p = 0.5$ ).

Overall, the re-interviewed respondents increased their support for the ban slightly once it was in effect. This is shown in **Table 2** with an increase in the overall re-interviewed sample mean from 8.2 to 8.5 ( $t = 1.4$ ,  $df = 251$ ,  $p = 0.15$ ).

Between the segments, we still see the pattern of the segment that was not voluntarily compliant pre-ban being less supportive of the ban than the voluntarily compliant pre-ban group. The support from shoppers that had shown voluntary anti-consumption behaviour was almost completely stable at 9.0 at the benchmark and 9.1 post-ban ( $p = 0.51$ ). However, the shoppers that were not compliant in the absence of the ban show significant change. The group of shoppers that were completely reliant on store provided bags before the ban, as well as those that had shown partial anti-consumption, both increased their support for the ban once it was in effect (gains

**Table 2.** Changing attitudinal support for the ban (re-interviewed respondents)

	<i>n</i>	Pre-ban Mean	Post-ban Mean
Voluntary anti-consumption	154	9.1	9.0*
Completely reliant on plastic bags	37	5.7	6.7**
Some own bag and some plastic	61	7.6	8.2***
Total	252	8.2	8.5

\* $t = -0.6$ ,  $df = 153$ ,  $p = 0.51$ .

\*\* $t = 1.7$ ,  $df = 36$ ,  $p = 0.11$ .

\*\*\* $t = 2.4$   $df = 60$ ,  $p = 0.02$ .

of 1.0 and 0.7 scale points, respectively). To identify what was driving these increases in mean scores, individual-level score changes were examined for these two shopper groups. Over half the respondents in the groups (54%) were stable in their ratings between interviews. For those that did change, the change was three or fewer scale points for over 70 per cent of the respondents, on the 11-point scale. In terms of change direction, 41 per cent who changed scores between interviews decreased their ratings, while 59 per cent increased. This reveals that just a few individuals radically changing their score did not drive the increase in ratings. It also shows that there was a small pocket of respondents attitudinally resistant to the enforced behaviour change, through their decreased level of support, but the majority who were forced into a behavioural change made no attitudinal adjustment.

Further post-ban data found that forcing people into anti-consumption behaviour does not see a corresponding increased link between the anti-consumption behaviour and a greater cause, even in the presence of a demarketing campaign. Those forced into anti-consumption were attitudinally less convinced that the ban was having an effect than those who undertook the behaviour voluntarily. Almost nine in 10 of the respondents that showed voluntary anti-consumption behaviour at the initial interview felt the ban was having an impact compared to only around seven in

10 (68%) who were exclusively reliant on plastic before the ban. Those with partial reliance on plastic sat somewhere between the other two segments (77%) for feeling the ban was having a positive impact.

These results suggest several learnings for anti-consumption. The first is that, at least in this context, experiencing the forced adoption of anti-consumption behaviour results in either a stable or more positive attitude towards the enforcement than just the threat of it, for the majority of respondents. A potential explanation for this is that the imagined behaviour changes were greater than the actual changes experienced, resulting in a readjustment of attitudes. Alternatively, the finding that people become more attitudinally supportive of the ban suggests a shift towards 'real' anti-consumption (i.e. attitudes fall in line with the behaviour). But the findings on the perceived impact of the ban (or lack thereof) suggest something additional – that the ban has not led to people being as attitudinally involved in the anti-consumption as if they had come to the decision themselves. This could come down to the distinction between attitudes towards the actual behaviour (e.g. people see it is not that hard to take your own bags, so support for the ban increases); and attitudes towards the object of anti-consumption (i.e. the moral avoidance/ideological incompatibility with beliefs) which are the drivers of true anti-consumption (Lee *et al.*, 2009).

### ***Conclusions and future directions***

This paper has examined voluntary anti-consumers driven by internal personal motivations and contrasted them against people forced into anti-consumption behaviour by an external government proscription.

The results confirm previous exploratory findings that the segment of voluntary anti-consumers cannot be identified demographically. Gender was the only variable significantly related to group membership. It appears that females are more pre-disposed to taking

their own bags shopping. A potential explanation for this is that 'green' shopping bags often come in a compact form so that they can be stored in a handbag – an option not available to many men.

The social demarketing campaign accompanying the proscription was shown to have high cut-through, with messages that were closest to the point of action (the cash register) achieving the best recall. The campaign as a whole had the highest unprompted recall amongst those already exhibiting the desired behaviour, highlighting the continued challenge for marketing communications to gain cut-through with the wider audience.

During the phasing-out period, levels of compliant behaviour remained close to pre-intervention levels with no increase in voluntary anti-consumption of plastic bags. This was seen both in the proportion of shoppers taking their own bags, and the tendency for shoppers who forgot their bags to accept single-use plastic bags. The implication is that people are unlikely to adopt voluntary anti-consumption behaviour for habitual and frequent behaviour, in the absence of negative reinforcers. This supports the notion that marketing communications alone are not enough and that for some changes to be effected, public policy is required (Geller, 1989).

Anti-consumption forces people to change their perspectives and focus (Lee *et al.*, 2009). The shoppers who were forced to change their behaviour were found, on the whole, to be attitudinally supportive, showing a slight rise in mean support for the proscription between its announcement and when it came into force. This suggests that shoppers might be resistant to the idea of a ban when they have not yet experienced its effects, but will be less resistant once they adjust to it. That said, there existed a small pocket of respondents whose support scores for the ban dropped with its introduction. Furthermore, a third of the respondents forced into anti-consumption did not believe their changed behaviour was having any impact on the environment. These shoppers may be behaviourally compliant, but would not be classified as anti-consumption

shoppers as their attitudes have not shifted in line with the cessation of consumption. If people are to become anti-consumers through holding attitudes that are in line with their behaviours (Iyer and Muncy, 2009), then this research suggests that proscription does not achieve this, at least not fully.

Of interest is that shoppers already exhibiting anti-consumption behaviour are, in the main, supportive of others being forced to also stop consumption. This is an interesting finding and shows that any moral, self-expressive or differentiating grounds for their behaviour (Kozinets and Handelman, 1998) did not lead them to be unsupportive of the anti-consumption being imposed rather than opted in to.

This paper adds to the knowledge on anti-consumption and shopper resistance to government efforts to reduce socially undesirable behaviours through proscriptive interventions. This knowledge is useful to anti-consumption lobbyists, who need to understand how and why individuals resist particular consumption (or anti-consumption) practices, who those individuals are and the attitudes they hold towards their participation (Cherrier, 2008). Our findings show that government-initiated, mass social demarketing approaches can contribute to anti-consumption, even when consumers may not personally enjoy the benefits of their sacrifices. Policy makers considering a retail ban on single-use plastic bags need not fear significant behavioural or attitudinal resistance from shoppers. However, this paper has also established that a communications program alone may not be enough to achieve anti-consumption behaviours, without the added use of negative reinforcers such as the requirement to pay for consumption. Additionally, a forced behaviour change will not necessarily be accompanied by a shift in attitudes. In this sense, anti-consumption is not achieved fully, merely behavioural compliance; but perhaps this is enough.

There is scope for future research to examine the reaction of proscription in other contexts such as: the outright ban of plastic

bags in other countries or states; consumer attitudes towards plastic bag bans in the absence of a demarketing campaign; and consumer resistance to the forced anti-consumption of other environmentally harmful or self-harming products.

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**Appendix 1**

Table 3 Key attitudinal and behavioural measures in telephone interviews

Construct	Measure used	Response set
Ban support	The plastic bag ban covers single use, light-weight polyethylene plastic bags generally used by supermarkets and takeaway food outlets. I would like to know how supportive you are of this ban. I would like you to answer on a '0' to '10' scale where '0' is 'not at all supportive of the phasing out' and '10' is 'completely supportive of the phasing out' and '5' is 'neither supportive nor unsupportive'. You can also choose any number in between. So your level of support for the plastic bag ban would be. . .	0 - not at all supportive 1 2 3 4 5 - neither nor 6 7 8 9 10 - Completely supportive
Ban impact	Do you feel the ban is having an impact?	Yes an impact No impact Unsure/refused
Generalized bag behaviour	When you are grocery shopping, do you take your own shopping bags or use ones from the store?	Take own Use ones from store Both It varies
Last trip behaviour	Thinking about just your last trip to the supermarket, did you take your own shopping bags or use ones from the shop?	Took own Used shop ones Bit of both
Forgetting own bags	How many times do you think you forget to take your own bags grocery shopping? In ten grocery shopping trips, how many times would this happen to you?	None Once Twice Three times Four times Five times Six times Seven times Eight times Ten times
Not taking enough own bags	And how many shopping trips do you not take enough of your own bags to carry all your groceries in? Out of ten grocery-shopping trips, how many times would you find that you haven't taken enough of your own bags?	None Once Twice Three times Four times Five times Six times Seven times Eight times Ten times
Choices when not enough bags	When you forget your own bags or don't take enough, what do you generally do?	Buy more green bags Buy alternative bags Go without/trolley/carry Overfill existing bags Other