British American Tobacco response
to the
Department of Health discussion document
"Consultation on the future of tobacco control, May 2008" [1]

5 September 2008

[1] Gateway Reference 9874.

CONTENTS

SCOPE OF OUR RESPONSE

Consultation on the future of tobacco control, May 2008 is a Department of Health discussion paper inviting feedback on two specific regulatory proposals relating to tobacco product display (Question 8) and vending machines (Question 9) and also inviting feedback on several concepts raised for discussion.

Where the discussion paper raises concepts for consideration, we offer only preliminary comments. If any of these concepts were later to be developed into specific regulatory proposals, we would expect to be consulted so that we could respond more specifically.

EXECUTIVE SUMMARY

Introduction

British American Tobacco welcomes the opportunity to share our views on tobacco regulation in response to the Department of Health's discussion paper, *Consultation on the Future of Tobacco Control, May 2008*. We support the Government's objective of reducing youth smoking and agree that the manufacture, distribution and sale of tobacco products should be regulated. To this end, we support effective, evidence-based regulation that measurably reduces the public health impacts of tobacco products while respecting the choices and rights of adults who choose to smoke and allowing us to compete for their business.

We are pleased that the Department of Health has acknowledged that a wide range of stakeholders, including industry, have "valuable contributions to make in shaping the new [tobacco] strategy".[2] We see the Department of Health discussion paper as a valuable opportunity for an open discussion on tobacco regulation and welcome the opportunity to submit our views. We look forward to continuing constructive discussions with the Department of Health about topics in its discussion paper and about any future Government initiatives affecting our business. However, we are concerned that the draft Guidelines pursuant to Article 5.3 of the Framework Convention on Tobacco Control (FCTC) could result in less than full and proper consultation with the tobacco industry. Such a proposal would be inconsistent, not only with UK Government policy but with the European Commission's commitment to open consultation[3] and the OECD Recommendation on Improving the Quality of Government Regulation,[4] that "regulations should be developed in an open and transparent fashion, with appropriate procedures for effective and timely input from interested parties such as affected businesses."

We request that the UK Government promotes in international fora, such as discussions relating to the development of the FCTC Guidelines, the principles of better regulation to which it is committed, to ensure that all relevant stakeholders, including the tobacco industry, are properly consulted and listened to, now and in the future, on issues affecting their businesses.

Summary of our response to specific regulatory proposals

In this submission we respond to the two regulatory proposals pertaining to product display and vending machines, and offer preliminary feedback on the other points in the discussion paper.

Product display

We support retaining the current restrictions on the display of tobacco products in retail environments and we are opposed to a total product display ban. We believe that a total ban is neither a necessary nor a proportionate step to achieve the stated public health goals. A total display ban is not proportionate given:

- The absence of relevant and reliable evidence connecting a total ban to reduced cigarette consumption in the aggregate, reduced youth smoking initiation or increased cessation rates among current smokers;
- The fundamental right to freedom of commercial expression that is at stake;
- The unintended adverse consequences that would flow from a total display ban, such as increasing the illicit tobacco trade by driving legal tobacco sales 'under the counter'; and
- The disproportionate and anti-competitive impacts on tobacco retailers and tobacco companies.

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[2] *Consultation on the future of tobacco control, May 2008* at 12.
[3] *General principles and minimum standards for the consultation of interested parties by the Commission adopted on 11 December 2002*: http://ec.europa.eu/civil_society/consultation_standards/index_en.htm
[4] *Recommendation of the Council of the OECD on Improving the Quality of Government Regulation*, 15 Sept. 1995.

In addition, given the current regulatory environment prohibiting tobacco advertising and promotional activities and restricting point of sale display, we believe that a total ban would deprive consumers of their right to be informed about what they are buying and would deprive us of the ability to establish the availability of our products and to communicate product characteristics to consumers.

We believe that further retail display restrictions are unnecessary and unwarranted to meet the Government's health objectives and would be likely to lead to unintended adverse consequences. However, if the Government intends to introduce further restrictions, we expect to engage with the Government on such restrictions given the likely impact on our business.

Vending machine restrictions

We support the proposal requiring mechanisms on all tobacco vending machines to restrict under age access by young people in venues that are not themselves age-restricted. If age restriction devices are required, we recommend that this be done in close consultation with vending operators. We further recommend that the Government encourages strict adherence with existing legislation limiting access to vending machines by people under the age of 18.

Summary of our response to concepts raised for discussion

Plain packaging

We note that the Department of Health is seeking general feedback on the issue of plain packaging as "specific proposals are not being considered at present".[5] Should any specific Government proposal or initiative regarding plain packaging requirements be considered in future, the Department of Health would be required to undertake full lawful consultation with all relevant stakeholders, to which we would wish to respond.

British American Tobacco is strongly opposed to plain packaging of tobacco products. In the event of any such proposal, we would take every action necessary to protect our brands, our right to compete as a legitimate commercial business selling a legal product, and the interests of our shareholders.

The Government's power to introduce plain packaging is constrained by law, not only by the general principles of public law, the European Convention on Human Rights (ECHR) and EU law, but also by international law, including the WTO Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS). Against this background, the requirement for any future proposals to be properly evidence-based and proportionate is heightened. The introduction of plain packaging would have unintended consequences that run counter to the stated objectives of tobacco regulation.

Part A – Reducing smoking rates and health inequalities

British American Tobacco believes that children should not smoke and we recommend that the Government prioritise the following areas to continue the downward trend in under age smoking: (1) enforcement of existing laws forbidding retailers to sell to children and (2) enforcement of existing laws against the manufacture, importation and sale of illicit tobacco products. We also strongly support the Government's call for "a co-ordinated and multi-faceted response"[6] to tackle illicit trade. We also recommend, among other things, that the Government develops and implements a harm reduction strategy to reduce overall population harm caused by tobacco products. We do not believe that health inequalities can be attributed to a single factor such as smoking; the evidence indicates that many factors are associated with health inequalities in the UK.

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[5] *Consultation on the future of tobacco control*, May 2008 at 39.
[6] *Consultation on the future of tobacco control*, May 2008, at 20.

Part B – Protecting children and young people from smoking

British American Tobacco is committed to helping to ensure that only informed adults can access tobacco products and recommends measures to ensure compliance with and enforcement of laws restricting under age access to tobacco products. However, we do not believe that the initiatives in Part B are effective, justified and proportionate to protect children and young people from smoking. For example, rather than banning the sale of 10 packs, we believe that the Government should focus on compliance at the point of sale with the recently introduced higher minimum age of 18 and enforcement of the newly strengthened penalties for sales to the under age. In addition, British American Tobacco does not support attempts to ban or regulate smoking in private dwellings or vehicles as an appropriate means to reduce exposure to secondhand smoke, which is more effectively achieved through education.

Part C – Supporting smokers to quit

British American Tobacco supports policies aimed at making cessation services available to all smokers and which sustain the existing universal awareness of the risks of smoking.

Part D – Helping those who cannot quit

British American Tobacco supports the concept of a harm reduction policy and believes, along with others in the public health community, that regulators could achieve further public health gains through regulatory approaches that included reduced harm tobacco products. We seek and would greatly welcome further constructive discussion on a tobacco harm reduction approach with the Department of Health.

INTRODUCTION

About British American Tobacco

British American Tobacco welcomes the opportunity to respond to the Department of Health's discussion paper, *Consultation on the Future of Tobacco Control, May 2008.*

British American Tobacco is the world's second largest stockmarket-listed tobacco group by global market share, with brands sold in over 180 markets. Our companies employ over 53,000 people internationally, including 1,700 in the UK. In 2007, our business enabled governments to recoup over £17 billion in taxes, including excise duty on our products, more than 7 times the Group's profit after tax. In the UK, the tobacco industry collected £8 billion in the tax year 2007-08 in tobacco excise[7] and £2 billion in VAT.[8]

Our business has a UK market share of approximately 6%. It sells the cigarette and hand rolling tobacco brands Lucky Strike, Dunhill, Consulate, Craven A, Pall Mall, Peter Stuyvesant, Piccadilly, Rothmans, Royals, St Moritz, Vogue and Cutter's Choice, of which the most widely sold brand is Royals.

Support for effective, evidence-based tobacco regulation and better regulation-making

Because tobacco consumption poses real and serious risks to health, we agree that the manufacture, distribution and sale of tobacco products should be regulated. Any such regulation should, however, be consistent with Government's five principles of better regulation and be transparent, accountable, proportionate, consistent and targeted. [9]

We support effective, evidence-based regulation which can help measurably to reduce the public health impacts of the use of tobacco products, while respecting the choices and rights of adults who choose to use tobacco products and allowing our business as a part of a legal industry to compete for their custom.

We also believe that any tobacco regulation should be developed with regard to unintended consequences that could undermine its public health objectives, such as growth in illicit trade.

Support for listening to the views of those affected

We welcome the Government's commitment to listen to the views of those affected by potential regulation to ensure that proposals are fit for their intended purpose and that no unnecessary burdens are placed on businesses. We also welcome the Government's desire to design effective solutions to increase the likelihood that new policies will meet their objectives and to reduce the risk of unintended consequences.[10]

We are pleased that the Department of Health has acknowledged that a wide range of stakeholders, including industry, have "valuable contributions to make in shaping the new [tobacco] strategy".[11] We see the Department of Health discussion paper as a valuable opportunity for an open discussion on tobacco regulation and welcome the opportunity to submit our views.

We look forward to continuing constructive discussions with the Department of Health about topics in its discussion paper and about any future Government initiatives affecting our business. However, we are concerned that the draft Guidelines pursuant to Article 5.3 of the Framework

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[7] HM Revenue & Customs, Departmental Report 2008, at.8.
[8] Tobacco Manufacturers Association: based on an estimated £12.59 billion of consumer spending on tobacco products, 2007. http://www.the-tma.org.uk/page.aspx?page_id=45.
[9] Better Regulation Executive, Department for Business, Enterprise & Regulatory Reform: "The five principles of good regulation". http://www.berr.gov.uk/bre/.
[10] Better Regulation Executive, Department for Business, Enterprise & Regulatory Reform: "Better Regulation".
[11] *Consultation on the future of tobacco control, May 2008* at 12.

Convention on Tobacco Control (FCTC) could result in less than full and proper consultation with the tobacco industry. Such a proposal would be inconsistent, not only with UK Government policy, but with the European Commission's commitment to open consultation[12] and the OECD Recommendation on Improving the Quality of Government Regulation[13], that "regulations should be developed in an open and transparent fashion, with appropriate procedures for effective and timely input from interested parties such as affected businesses".

➔ We request that the UK Government promotes in international fora, such as discussions relating to the development of the FCTC Guidelines, the principles of better regulation to which it is committed, to ensure that all relevant stakeholders, including the tobacco industry, are properly consulted and listened to, now and in the future, on issues affecting their businesses.

[12] *General principles and minimum standards for the consultation of interested parties by the Commission adopted on 11 December 2002*: http://ec.europa.eu/civil_society/consultation_standards/index_en.htm
[13] *Recommendation of the Council of the OECD on Improving the Quality of Government Regulation*, 15 Sept. 1995.

OUR RESPONSE TO SPECIFIC REGULATORY PROPOSALS

Question 8: Product display

"Do you believe that there should be further controls on the display of tobacco products in retail environments? If so, what is your preferred option?"

Option one: Do nothing, retain current restrictions, maintaining enforcement of relevant legislation.

Option two: Regulate point of sale display more strictly by further restricting permitted advertising space and/or restricting display space or ways in which tobacco products are displayed.

Option three: Require retailers to remove tobacco products from display.

- ➔ British American Tobacco supports retaining the display of tobacco products in retail environments and we are opposed to a total ban.
- ➔ There is no proper evidence to suggest that a ban will achieve the Government's public health objectives. A ban would, on the other hand, further restrict the ability of manufacturers and retailers to communicate brands and their availability to customers, distort competition and have significant unintended adverse consequences.
- ➔ There is no proper evidence to support further retail display restrictions. If the Government is necessarily committed to introducing further regulation in this area, this must allow effective communication with consumers and brand competition at point of sale, and avoid unintended adverse consequences.

Product display serves important practical and commercial functions

Product display enables manufacturers to communicate product availability, brand variants and price to adult smokers and is necessary for fair brand competition amongst manufacturers.

Lack of evidence

There is no evidence that further regulatory interventions in tobacco products display are necessary to improve compliance with existing regulations at the point of sale. The Local Authorities Coordinators of Regulatory Services (LACORS) has found that "compliance with existing point of sale regulations has been generally good".[14] Moreover, as the discussion paper states, the purported "increases in the size and prominence of display of tobacco products since TAPA [Tobacco Advertising and Prohibition Act 2002] came into force have yet to be confirmed by research."[15]

If there is a genuine concern that retailers are contravening the spirit, if not the letter, of the current POS restrictions, as the discussion paper suggests at paragraph 3.21, we would be happy to discuss this with the Department of Health to find reasonable solutions to address such concerns. Indeed, we are somewhat surprised by the current proposals given the outcome of last year's exchanges on this matter between LACORS and the Tobacco Manufacturers Association.[16]

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[14] *Consultation on the future of tobacco control, May 2008* at 30.

[15] *Consultation on the future of tobacco* control, May 2008 at 31, paragraph 3.25

[16] In September 2006, Jane MacGregor of MacGregor Consulting Ltd issued a report on behalf of LACORS entitled *Tobacco Advertising and Promotion: What the Manufactures Did Next*, recommending "that urgent consideration be given to the need for further legislation to control the display of tobacco products at point of sale and to limit the size of packets that are permitted to be sold at retail level" at 12. The Tobacco Manufacturers Association sought to address the concerns raised by proposing a voluntary code. Dialogue however came to an abrupt end several months later when LACORS chose to abandon discussions.

The Department of Health's discussion paper states that a rationale for banning display is "to protect children and young people from the promotion of tobacco".[17] There is no relevant and reliable evidence establishing that display bans or restrictions would achieve the objective of driving down youth smoking initiation, reducing cigarette consumption in the aggregate or increasing cessation rates among current smokers.

These points are further detailed in an Expert Report of Dr. Jonathan Klick, a Professor of Law and Economics at the University of Pennsylvania and the Wharton School of Business and a Senior Economist at the Institute for Civil Justice of the RAND Corporation. British American Tobacco commissioned this Expert Report and we submit it as part of our response to the discussion paper (attached at Appendix A).

Dr. Klick concludes that:

- All but two of the studies relied on by the Department of Health in the discussion paper in support of further restricting product display relate to research on the effects of broad forms of advertising, and not the effects of product display. Advertising of tobacco products in the UK is already banned, except for very limited advertising at the point of sale.
- The only two studies specifically investigating the effect of product display on smoking outcomes and cited in the discussion paper do not provide reliable or direct scientific evidence that product display triggers smoking behaviour in youth and/or stimulates purchases among adult smokers, including those trying to quit smoking.
- The methodology of the literature relied on by the Department of Health in support of a total display ban is flawed and does not provide a sound basis for regulation.
- Data from countries that have implemented product display restrictions (e.g. Iceland, Canada and Australia) do not support the proposition that such restrictions are effective in driving down consumption or youth initiation, or lead to increases in rates of cessation. Where product display restrictions have been implemented, there has not been a material reduction in levels of smoking among young people, and in some cases levels of smoking have increased. For example, during the period 2002-2005 there were more stringent restrictions on display in the Australian State of Tasmania than in the Australian State of Western Australia. Nevertheless, the incidence of smoking in Tasmania increased whereas the incidence of smoking in Western Australia fell.[18] The Canadian province of Saskatchewan was the first Canadian province to prohibit retail displays and yet the percentage of smokers actually increased from 21% in 2002 to 24% in 2003, during the 19 months when the ban was first introduced.[19]

The discussion paper itself acknowledges that "as with all measures in tobacco control it is difficult to disaggregate the precise benefits of specific changes".[20] The Government's policy on Better Regulation calls for decisions to be based on sound evidence. The Better Regulation Commission expressly calls for measures to be taken to ensure that the "precautionary principle is not misused to bring in legislation in an opaque or smothering way without a sound evidence base or risk analysis".[21]

There is no sound evidence for a complete ban on tobacco display. Indeed, the discussion paper itself acknowledges that Health Canada's 2006 consultation on the issue questioned any direct

[17] *Consultation on the future of tobacco control, May 2008* at 7.
[18] Roy Morgan Smoking Monitor, January 2002 - December 2005.
[19] Tobacco Control Program, Health Canada, Canadian Tobacco Use Monitoring Survey (CTUMS), Annual 2002 and 2003.
[20] *Consultation on the future of tobacco control, May 2008* at 34.
[21] Better Regulation Commission. *Risk, Responsibility and Regulation: Whose Risk is it Anyway?* October 2006.

causal link between banning display and reductions in tobacco consumption, finding any link "very speculative". [22]

Moreover, despite the statements to the contrary in the discussion paper, there is no reliable evidence establishing that tobacco product displays in retail environments cause consumers who had no intention of purchasing tobacco products to purchase these on impulse. In support of this position, we submit the Expert Report of Dr. Christine Wood, a PhD in Experimental Psychology and the current Director of the Human Factors practice at Exponent, a scientific and engineering consulting firm. British American Tobacco commissioned this Expert Report and we submit it as part of our response to the discussion paper (attached at Appendix B).

Dr. Wood's conclusions include that:

- The display of tobacco packages in retail stores will not increase the initiation or prevalence of smoking or discourage those attempting to quit.
- For continuing smokers, product display will not increase smoking prevalence because the decision to buy cigarettes is a planned purchase made well before a smoker enters a store.
- For those experimenting with smoking, product display should not affect their smoking behaviour because, assuming most experimenters are adolescents, adolescents should not be allowed to purchase cigarettes through the retail environment due to age limit laws. Moreover, other factors, such as family and peers, have been shown to influence smoking initiation separately from and unrelated to the display of cigarettes in retail stores.
- For smokers attempting to quit smoking, there is no reliable empirical basis to conclude that removing product display would have an effect on quitting behaviour.
- For those who do not intend to smoke, product display will not increase smoking initiation because they are unlikely to pay attention to the product display.
- The display of cigarette packages in the retail environment does not have an effect on the decision to purchase cigarettes but it may have an effect on the choice of brand.

On the issue of impulse purchasing, the discussion paper appears to support Dr. Wood's opinion that cigarettes are not the sort of consumer goods that are likely to be purchased on impulse.[23]

Denormalisation as an end in itself is an improper basis for regulation.

The Department of Health's discussion paper includes "denormalisation" as a stand-alone policy objective listed among the several reasons advanced for a potential banning of tobacco products display at retail. The denormalisation of a legal and taxed consumer good is not a legitimate State objective. The sale of tobacco products is legal. As the Government has chosen not to criminalise the sale or use of tobacco products, it should not seek to impose a moral code that stigmatises and marginalises the use of such products as 'illegitimate'.

Denormalisation of tobacco products encourages and sanctions attacks on the reputation and integrity of individuals who are associated with the manufacture, sale or use of such products. Such attacks are contrary to law and infringe the guarantees of privacy, right to reputation and freedom of expression. The Government should neither interfere in the moral choices of citizens to sell and/or use a legal product nor encourage others to do so.

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[22] *Consultation on the future of tobacco control, May 2008* at 34.

[23] *Consultation on the future of tobacco control, May 2008* at 33, noting that published studies establish that an overwhelming majority of smokers make up their minds about which brand of cigarettes to buy before they enter the store.

Display bans would disproportionately penalise small retailers and specialist tobacconists.

If display bans were implemented, small retailers, who derive up to a third of their revenue from tobacco products, would be less likely to be able to bear the costs of compliance involved in refitting their stores. Small retailers would also be more likely to lose sales to larger stores, as the display of products helps to counteract the incorrect assumption that larger stores have a bigger range of products available.

Display bans would distort competition and impinge upon manufacturers' ability to communicate with consumers.

Display bans would obstruct and distort competition in the market by inhibiting new product launches and new market entrants. The High Court of Justice (Queen's Bench Division Administrative Court) has reviewed the appropriate parameters for regulating tobacco advertising and promotional activities, and has recognised that tobacco product retail display represents one of the key methods available to tobacco manufacturers to establish the availability of their products and to communicate product characteristics to consumers. In short, the ability to display tobacco products at retail is essential to any proportionality analysis of any proposed display restrictions.[24]

Contrary to the Department's assertions to the contrary[25], we believe that the proposal to ban tobacco product retail display would violate freedom of commercial expression protected by Article 10 of the European Convention on Human Rights (ECHR)[26]. In the present circumstances, where almost every other means of communicating with adult consumers is precluded by existing laws, a ban on display would effectively amount to the elimination of legitimate communication of product information at the point of sale, which is necessary for consumers and for manufacturers to compete with each other. Considering the Department's own acknowledgement that the evidence in support of such a ban is "not conclusive",[27] we consider that the Department could not justify this violation of rights under Article 10 ECHR.

Display bans are disproportionate and would defeat the reasonable expectations of manufacturers and retailers.

The Tobacco Advertising and Promotion (Point of Sale) Regulations 2004 (the 2004 Regulations) were previously challenged in judicial proceedings by British American Tobacco and other members of the tobacco industry.

In assessing whether the 2004 Regulations were proportionate, The Honourable Mr Justice McCombe held that: "I do not consider it to be disproportionate to meet the objective of promoting health by restricting advertising at point of sale to a single advert of the type to be permitted. **Displays of the products for sale will continue and, in addition to the A5 advert, price lists will also be allowed. Simply casting one's eyes over the photographic evidence of existing POS [point of sale] advertising, it is not difficult to see that the combination of display, price list, generic advertising and the limited A5 advertisement proposed could have a significant effect of demonstrating, at POS, the products available, their prices, the pack sizes available and their characteristics (such as tipped or un-tipped, menthol, content**

[24] See R (on the application of British American Tobacco UK Ltd.) v. The Secretary of State for Health [2004] EWHC 2493 (Admin) at 51.
[25] *Consultation on the future of tobacco control, May 2008* at 81.
[26] Article 10 ECHR provides that: "Everyone has the right to freedom of expression. This right shall include freedom to hold opinions and to receive and impart information and ideas without interference by public authority and regardless of frontiers."
[27] *Consultation on the future of tobacco control, May 2008* at 34.

size and the like). The traditional shop gantry and display will remain and the customer will be able to see what is available and he or she can ask for other information, if it is needed."[28]
The High Court of Justice clearly recognised that product display represented one of the key means available to tobacco manufacturers to establish the availability of their products and to communicate product characteristics to consumers. The ability to display cigarette packs at retail was essential to the Court's finding of proportionality.[29]

This is very similar to the position of the Department of Health in the Full Final Regulatory Impact Assessment of the 2004 POS Regulations, where the Department stated that it was "satisfied that the regulations as drafted are proportionate and strike a balance between the overarching aim to protect public health and the need to ensure that those selling tobacco products are able to communicate with their customers".[30]

Against this background, any proposal for an outright ban on tobacco product display at retail is not only disproportionate but is contrary to the reasonable expectations of the industry that derive from these various pronouncements. The Government clearly recognised at the time of the POS regulations that the remaining means of communication with consumers struck an appropriate and proportionate balance between the protection of consumers on the one hand, and the right to give and receive information on legally available products and to allow inter-brand competition to continue on the other. As the Department of Health accepts, compliance with the POS regulations has been "generally good"[31] and no attempt has been made to raise any concerns with either manufacturers or retailers.

Bans on retail tobacco display would lead to the unintended consequence of increasing the illicit tobacco trade by driving legal tobacco sales 'under the counter'.

The UK's large illicit trade in tobacco products continues to flourish despite this trade operating within a de facto 'display ban'. Banning the display of legitimate, duty-paid tobacco products could only further incentivise illicit trade by:

- Impeding the ability of enforcement agencies to identify illegal stock;
- Preventing adult smokers from distinguishing between counterfeit and genuine tobacco products before making a purchase;
- Making it easier for unscrupulous retailers to mix illicit 'under-the-counter' tobacco products with legitimate stock;
- Blurring the distinction between legitimate and illicit product, which would all be 'under cover', making it harder to reinforce public appreciation that smuggling, counterfeit and piracy are crimes.

Display bans are likely to lead to the unintended consequence of increased consumption.

As further explained in the Klick Expert Report, display bans are likely to lead to increased price competition, resulting in consumers down-trading to cheaper brands - or cheap illegal cigarettes -

[28] See R (on the application of British American Tobacco UK Ltd.) v. The Secretary of State for Health [2004] EWHC 2493 (Admin) at 51.
[29] The Court's recognition of the importance of display is not surprising as, at the time of the development of the 2004 Regulations, the Government considered that the 2004 Regulations struck the right balance between protecting consumers and the "legitimate interests of the tobacco industry and retailers, and the right of consumers to be aware of the products available and their prices". The Government also argued strongly that the remaining means of communication left to tobacco manufacturers at point of sale, including display and the A5 size advertisement, meant that inter-brand competition would continue.
[30] UK Department of Health Full Final Impact Assessment, The Tobacco and Promotion (Point of Sale) Regulations 2004, March 2004 at paragraph 65.
[31] *Consultation on the future of tobacco control, May 2008* at 30.

and thus increasing tobacco consumption. Putting cigarette brands under the counter would lead to a commoditisation effect whereby, without the ability to differentiate one brand from the next at the point of sale, consumers are likely to perceive all cigarettes as the same.

Option two: Retail display restrictions

As we have explained, we do not consider a display ban, or any further controls or restrictions on our rights to communicate with consumers and to compete with other manufacturers through the display of tobacco products in retail environments, to be necessary or justified as a means of achieving the Government's public health objectives.

However, if notwithstanding the lack of any credible evidence as to their efficacy and the real risk of the unintended adverse consequences which we have identified in this response, the Government is still intent on introducing restrictions on tobacco products' display, we would be prepared to engage with the Government to identify possible measures (which are envisaged under option two in the discussion paper) which should address any concerns the Government might have as to the way tobacco products are currently displayed. Any such possible measures should also, however:

- Allow British American Tobacco, other manufacturers and retailers to communicate products and prices effectively with consumers;
- Permit effective competition between manufacturers and allow new products and new entrants into the market;
- Mitigate the potential financial and other impacts to retailers, particularly to small retailers and specialist tobacconists; and
- Avoid, or at least minimise as far as possible, the adverse unintended consequences outlined above, particularly the potential for increased consumption and illicit trade.

Question 9: Vending machine restrictions

"Do you believe that there should be further controls on the sale of tobacco from vending machines to restrict access by young people? If so, what is your preferred option?"

Option one: Retain the status quo and allow tobacco products to be sold from vending machines with no legislative restrictions on where vending machines are located or the requirement to include age restrictors on access.

Option two: Require mechanisms on all tobacco vending machines to restrict under age access by young people.

Option three: Prohibit the sale of tobacco products from vending machines altogether.

- ➔ In venues that do not themselves have age control measures, we support option two, the proposal for mechanisms on all tobacco vending machines to restrict under age access.
- ➔ Should age-restriction devices on vending machines be adopted, we recommend that technical solutions be developed in close consultation with vending operators to ensure that any proposed solutions and implementation timeframes are feasible.
- ➔ We also recommend that the Government encourages strict adherence with the National Association of Cigarette Machine Operators (NACMO) Code of Practice on the positioning of machines, which requires cigarette vending machines to be installed in a part of the premises that can be supervised to restrict access by people under the age of 18.

We acknowledge the Government's concerns about youth access to vending machines and recognise that tobacco vending machines, like any other tobacco retail channel, require responsible management within a sensible regulatory framework. We therefore believe that in venues that are not themselves age-restricted, it is appropriate for access to tobacco vending machines to be controlled by a remote-control or other device as the most appropriate means of verifying age. Age-restriction devices have also been recognised as an effective and proportionate response to curbing youth access to vending machines in other highly regulated countries such as Australia and New Zealand. This solution allows for "a routine age check prior to purchase"[32], thus addressing the Government's concerns.

We do not support prohibition of tobacco vending machines. Vending machines provide a secure point of sale that enables hotels, restaurants, bars and similar venues to prevent stock theft and reduce the burden on busy staff.

[32] *Consultation on the future of tobacco control, May 2008* at 37.

OUR RESPONSE TO CONCEPTS RAISED FOR DISCUSSION

Question 1: Smoking prevalence rates

"What smoking prevalence rates for all groups (children, pregnant women, routine and manual workers and all adults) could we aspire to reach in England by 2015, 2020, and 2030, and on what basis do you make these suggestions? What else should the Government and public services do to deliver these rates?"

We believe that the setting of aspirational smoking prevalence rates is a matter for health authorities. Our business is based on meeting the preferences of informed adults who choose to buy legal tobacco products.

Government research indicates that the Department of Health's smoking prevalence targets are being met or exceeded: "overall adult smoking prevalence has been reduced in England over the past decade from 26% in 1998 to 22% in 2006…since 1998; the number of smokers in England has fallen by 1.9million".[33]

We believe that children should not smoke. It is therefore encouraging that the Department of Health's most recent survey of smoking amongst school age children[34] shows a significant and long-term decline in the proportion who has ever tried smoking, from 53% in 1982 down to 33% in 2007. It also finds that smoking amongst 11-15 year olds has reached a 25 year low, with the percentage that smoke at least once a week down from 9% in 2006 to 6% in 2007, the lowest since the survey began in 1982.

➔ To see continuing reductions in under age smoking, we believe that critical areas are:

- Compliance and enforcement of penalties for retailers who sell to children; and
- Enforcement to combat the significant UK problem of the illicit trade in tobacco products.

As the Department of Health discussion paper notes, there have been numerous tobacco regulatory interventions over the past decade, which the paper states have established the UK as "a leader in Europe and across the world in effective tobacco control"[35]. These include public place smoking bans; bans on advertising of tobacco in print, on billboards and on the internet; stringent restrictions on tobacco advertising at the point of sale; a higher minimum age for the sale of tobacco products; increased sanctions for retailers who persistently sell tobacco to people under 18; larger health warnings on tobacco product packaging and cessation support including pharmaceutical aids, quit advice and public education programmes. Further new legislation requiring pictorial health warnings on tobacco product packaging will take effect in October 2008.

➔ If contemplating any further regulatory interventions, we would expect the Government to assess the impacts of the extensive range of existing laws and regulations governing the manufacture, sale, distribution and promotion of tobacco products in the UK in order to determine whether further regulatory interventions are necessary and would be proportionate. This should include assessing recently implemented measures and newly adopted legislation that has not yet been implemented.

Please also see our responses to Question 3 on the Government's six-strand strategy; Questions 4 and 5 on tackling illicit trade in tobacco and Question 6 on youth smoking prevention.

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[33] *Consultation on the future of tobacco control, May 2008* at 14.
[34] Fuller E, *Smoking, Drinking and Drug Use Among Young People in England, 2007* at 108.
[35] *Consultation on the future of tobacco control, May 2008* at 10.

Question 2: Reducing health inequalities

"What more do you think could be done to reduce inequalities caused by tobacco use?"

Evidence suggests that health inequalities are not associated with a single factor such as smoking, but with many differences in the circumstances in which people live and work.[36]

A study of health inequalities in Europe published in 2008 in the *New England Journal of Medicine* concluded that both lifestyle choices and patterns of use of health care are likely to be driven by inequalities in general living conditions, caused by political, economic, social and cultural forces. [37] This conclusion was echoed by another recent study published in the European Journal of Epidemiology, showing that it is very difficult to isolate any single cause of health inequalities in populations. [38]

In epidemiological cohort studies on the contribution of smoking to socioeconomic inequalities, higher smoking prevalence in lower socioeconomic groups does not account for the socio-economic differentials in mortality.[39]

The Department of Health's discussion paper refers to a suggestion that smoking prevalence may be higher in poorer socio-economic groups because "nicotine 'rewards'…are felt more powerfully by people living in difficult circumstances or whose lives tend to lack other rewards".[40] Dr. Martin Jarvis, whose research is cited in support of this proposition, indicates that "[it] is difficult to think of evidence which would strongly support this hypothesis".[41]

The discussion paper also suggests that part of the explanation for higher smoking prevalence in lower income groups "may lie in the fact that socially disadvantaged smokers show higher levels of nicotine dependence than do smokers from more affluent backgrounds".[42] However, much of the published literature indicates that for economically disadvantaged people, it is primarily social circumstances that influence smoking.[43] According to Dr. Jarvis, although smoking is a form of addiction to nicotine, such dependence "does not mean that smoking behaviour is entirely explicable in terms of pharmacological factors" and that social, economic, personal and political influences all play an important part in determining successful cessation.[44]

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[36] M. Marmot, *Smoking and inequalities*. Lancet, 2006, 368 (9533), 341-2.
[37] J.P. Mackenback et al, *Socioeconomic inequalities in health in 22 European Countries*, N. Engl. J. Med. 2008, 358 2468-81.
[38] E. McFadden, et al., *Occupational social class, educational level, smoking and body mass index, and cause-specific mortality in men and women: a prospective study in the European Prospective Investigation of Cancer and Nutrition in Norfolk cohort* (2008) 23(8) Eur. J. Epidemiol: 511-22, stating in pertinent part that: "There is little debate regarding the need to reduce health inequalities, however the appropriate focus of policies is less clear. Changing individual health behaviours is a key aim in the USA and the UK. However, our results and previous research suggest that despite strong socioeconomic differentials in health behaviors, such differences only account for a modest proportion of social inequalities in mortality. Part of the gradient was explained by education, as expected since it strongly affects the type of job people can hold, while the remaining independent association implies additional casual processes are at work...These potential pathways require further investigation."
[39] CTM van Rossum, Shipley M.J., van de Mheen H., Grobbee D.E., Marmot M.G., *Employment grade differences in cause specific mortality. A 25 year follow-up of civil servants from the first Whitehall study,* (2000) 54(3) J. Epidemiol. Community Health, 2000, 54 (3), 178-84.
[40] *Consultation on the future of tobacco control, May 2008* at 19.
[41] M. J. Jarvis and J. Wardle, *Social patterning of health behaviours: the case of cigarette smoking,* in Marmot M. and Wilkinson R. (eds.), Social Determinants of Health, Second Edition Oxford University Press (2006) at 232.
[42] *Consultation on the future of tobacco control, May 2008* at 19, 2.15.
[43] M.J. Jarvis, *ABC of Smoking Cessation, Why People Smoke*, (2004) 328 BMJ, 277-279, at 278.
[44] M.J. Jarvis, *Patterns and Predictors of Smoking Cessation in the General Population*, in Bollinger, C.T. and Fagerstrom, K.O. (eds.), The Tobacco Epidemic, Prog. Resp. Res., Karger, Basel (1997) 28: 151-164, at 151.

- ➔ Given the risks of tobacco use, we support a policy intention aimed at making cessation services available to all smokers and which sustains the existing universal awareness of the real and serious risks of tobacco use. We believe that the Government and health authorities should ensure that there is adequate provision of such services.
- ➔ Health inequalities cannot be attributed to a single factor such as smoking. They are associated with many differences in the circumstances in which people live and work.

Question 3: The Government's six strand strategy

"Do you think the six-strand strategy should continue to form the basis of the Government's approach to tobacco control into the future? Are there other areas that you believe should be added?"

The Department of Health's six-strand strategy to tackle smoking focuses on:

Supporting smokers to quit;

Reducing exposure to second-hand smoke;

Running effective communications and education campaigns;

Reducing tobacco advertising, marketing and promotion;

Effectively regulating tobacco products; and

Reducing the availability and supply of tobacco products.

Inclusion of a harm reduction strategy

➔ We believe that the Government should add a seventh strand to its tobacco control strategy, namely the development and implementation of a strategy for reducing overall population harm caused by the use of tobacco products. Please see our response to Question 17 on harm reduction.

Regulating tobacco products

This strand of the Government's strategy appears to cover three areas: controlling the sale of tobacco products to the under age, the labelling of tobacco product packaging, and regulating "contents and emissions of tobacco products". [45]

Sales to the under age

As previously mentioned, the Department of Health's most recent study for 2007[46] has found a long-term decline in the percentage of school age pupils who have ever tried smoking and a 25 year low of 6% of 11-15 year olds who smoke. However, its study for 2006 found that almost four out of five of the 11-15 year olds who do smoke regularly (78%) said they had bought cigarettes in shops, typically newsagents, tobacconists or sweetshops.[47]

We believe that to achieve further sustained reductions in under age smoking, the Government should focus on enforcement of existing laws in the critical area of sales to the under age before contemplating any new laws or regulations, especially as the higher age for tobacco sales, to 18 years from 16, and stricter penalties for retailers who break the law are relatively new measures.

Please see our response to Question 6 on youth smoking prevention.

Labelling of packaging

The Government has implemented a number of measures in this area, including larger and pictorial health warnings on tobacco product packaging.

Please see our response to Question 10 on plain packaging.

Regulating contents and emissions

Limits on tar, nicotine and carbon monoxide yields in cigarette smoke are mandated in the UK pursuant to European legislation. In addition, the major tobacco companies in the UK submit an annual list of cigarette ingredients to the Department of Health.

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[45] Department of Health, "Regulating tobacco products". http://www.dh.gov.uk/en/Publichealth/Healthimprovement/Tobacco/TobaccoGeneralInformation/DH_4083845.

[46] Fuller E, *Smoking, Drinking and Drug Use Among Young People in England in 2007*, at 109 - 110.

[47] Fuller E, *Smoking, Drinking and Drug Use Among Young People in England in 2006*, at 26.

- ➔ Should further regulation of the contents of, and emissions from, tobacco products be contemplated, we would expect it to be based on sound scientific evidence that changes to tobacco products can reduce the health risks they pose.
- ➔ As a legitimate manufacturer of tobacco products, we have considerable product knowledge that could support this aim, based on an extensive and long-standing research and development capability that we would be pleased to share with the Government.
- ➔ We caution that any potential regulatory interventions aimed at attempting to make legitimately-manufactured tobacco products unpalatable to smokers would be likely to drive them towards the already significant trade in illicit tobacco products.

Please see our responses to Questions 4 and 5 on tackling the illicit tobacco trade.

Reducing the availability and supply of tobacco products

The Department of Health's website indicates that this strand of the Government's strategy focuses primarily on reducing the supply of smuggled and counterfeit tobacco products, reflecting the UK's significant problem of a large illicit tobacco market.

- ➔ We urge the Government to carefully consider the potential effect of any new regulation of the legitimate market in tobacco products upon the sizable market in illicit tobacco. Distorting the market in legitimate tobacco products, manufactured by legitimate companies and sold by legitimate retailers, has considerable potential to encourage both adult and under age smokers to turn to the unlawful and unregulated market and thus to undermine public health objectives.

Please see our response to Questions 4 and 5 on tackling the illicit tobacco trade.

Questions 4 and 5: Tackling illicit trade in tobacco

The illicit trade problem

High tobacco tax rates in the UK relative to the rest of the EU have contributed, and continue to contribute, to demand for cheap counterfeit and smuggled products and to large amounts of 'cross border shopping' of cheaper tobacco products from other EU countries on which UK tax is not paid. This demand translates to significant lost revenue for the Government and gives rise to negative consequences that flow from the illicit market such as organised crime.

HM Revenue & Customs (HMRC) currently estimates that 13% of the UK cigarette market and 56% of the UK hand-rolling tobacco market are illicitly supplied.[48] Including cross border shopping, the figures are even higher at 21% of cigarettes and 67% of hand-rolling tobacco. In 2006, HMRC put the Government's losses from the illicit tobacco trade at £2.9 billion a year, equivalent to 1p off the basic rate of income tax.[49] HMRC has estimated the last five years' losses from illicit tobacco and cross border shopping at £10.4 billion at least and £17.8 billion at worst.[50]

Collaboration on enforcement

"How can collaboration between agencies be enhanced to contribute to the inland enforcement against illicit tobacco?"

We strongly support enforcement against illicit tobacco. We agree that "a co-ordinated and multi-faceted response"[51] is very important in tackling the illicit tobacco trade both locally and internationally.

Our collaboration

In the UK, British American Tobacco supports cooperation among HMRC, the Border Agency, the Serious Organised Crime Agency (SOCA), Trading Standards, the Metropolitan Police and the Department of Health. We work actively with these agencies to tackle illicit trade, helping their efforts to secure the market and providing intelligence, training, equipment and other support.

Examples of our support include:

- Analysis in our laboratories to identify counterfeit brands seized by Customs;
- Sharing intelligence and cooperating on enforcement with SOCA and the Metropolitan Police against organised gangs involved in the illicit tobacco trade;
- Providing training to HMRC on identifying counterfeit products entering the market and on our anti-illicit trade activities worldwide;
- Providing scanners and training for HMRC and Trading Standards;
- Voluntarily including a covert authentication device on our products to differentiate them from counterfeit products; and
- Working with HMRC representatives in the UK and in countries such as China, Germany and Poland to share intelligence and explore joint operations on civil and/or criminal action against criminal syndicates outside the UK.

We play an active role in multi-sector associations such as the Anti-Counterfeiting Group, British Brands Group, International Trademarks Association and International Chamber of Commerce,

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[48] HM Revenue & Customs, *Measuring Indirect Tax Losses – 2007*, mid-point figures, illicit and cross border shopping market share.
[49] HM Revenue & Customs, *Reinforcing the Tackling Tobacco Smuggling Strategy, 2006*, at 6.
[50] HM Revenue & Customs, *Measuring Indirect Tax Losses – 2007*, at 11, table 3.3 and 12, table 3.5.
[51] *Consultation on the future of tobacco control, May 2008* at 20.

which work to reinforce the importance of intellectual property rights. This includes raising awareness amongst governments and the judiciary about the threats posed by counterfeiting and working to strengthen the enactment and enforcement of intellectual property laws globally. In the UK, many of these associations support Government initiatives to achieve national coordination of intellectual property rights and awareness-raising amongst law enforcement agencies, consumers and other industry bodies.

➔ We encourage the Government to continue building on inter-agency collaboration and on collaboration with the tobacco industry, and we offer our continued support in this regard.

➔ We believe that closer collaboration between HMRC and the Department of Health would help to ensure that the potential unintended consequences of tobacco regulation, such as illicit trade, are taken into account during the development of public health policy.

International collaboration

Illicit trade is an international issue. Illicit tobacco products in the UK originate predominantly from other countries. We believe it is essential for UK law enforcement agencies to collaborate with those in other countries, particularly the European Anti-Fraud Office (OLAF), the US Bureau of Alcohol, Tobacco and Fire-Arms, and Interpol. We have worked with many of these organisations and have been involved in connecting UK law enforcement agencies with several of them while cooperating against illicit manufacturers and traders importing product illegally into the UK.

We also support collaboration amongst regulators, governments and bodies such as the World Customs Organisation, the World Trade Organisation (WTO), the World Intellectual Property Organisation, Interpol and the World Health Organisation (WHO) in seeking to eliminate all forms of illicit tobacco trade.

➔ We ask the Government to push for stronger international compliance. Many developing countries do not make enough effort to stop their citizens illegally manufacturing counterfeit tobacco products and exporting counterfeit and smuggled products illegally into the UK.

World Health Organisation Illicit Trade Protocol

The WHO is working to produce an Illicit Trade Protocol pursuant to the Framework Convention on Tobacco Control (FCTC).

➔ We ask the Government to participate fully in the activities of the Protocol's International Negotiating Body (INB) process to ensure that the focus of the Protocol is on the perpetrators of the illicit tobacco trade and that it does not place disproportionate burdens on the legitimate tobacco industry.

➔ We call on the Government to engage the INB to ensure that the Protocol focuses on three key areas, which it currently omits:

- Strong laws and tough penalties for those who engage in illicit trade;
- An open and flexible track and trace standard for tracking legitimate tobacco products, rather than a prescriptive, defined system, to ensure that all tobacco companies, both large and small, participate in this positive way of strengthening supply chain security;
- Better oversight and enforcement capabilities in Free Trade Zones, which are not mentioned in the draft Protocol, but which the World Customs Organisation and the Organisation for Economic Cooperation and Development agree play a significant role in facilitating illicit trade. Free Trade Zones are frequently used for storage and onward shipment of illicit cigarettes and for production of counterfeit product. Authorities should target such vulnerable links in the supply chain that provide 'safe havens' for smugglers

and counterfeiters. Increased oversight of Free Trade Zones would greatly enhance the effectiveness of the Protocol and have a profound impact on reducing illicit tobacco trade.

Inland enforcement

We believe that formally giving a single body overall responsibility for coordinating activities, prosecuting cases and developing an agreed national strategy against illicit tobacco products is key in enhancing inland enforcement efforts. This would facilitate decision-making based on up-to-date market intelligence and would ensure that all stakeholders are working efficiently towards the same goal. Given its experience and expertise on this issue, HMRC is best placed to perform this role. However, we believe that HMRC's resources should be increased to allow it to deal with a significant and increasing problem. HMRC should also continue to get the support of the police with intelligence-gathering and investigations and of Trading Standards in the area of administrative remedies against counterfeit products. In addition, the industry often has much vital intelligence on criminal gangs operating in this field both locally and from overseas and it is essential that HMRC continues to collaborate with the industry.

Collaboration on intellectual property policy

It is important to note that the UK's significant illicit tobacco problem is characterised by a significant and growing problem – counterfeit cigarette brands.

In 2001-02, counterfeit represented 15% of HMRC's large seizures. In 2004-05, this figure had risen to 48%. HMRC reports that in 2004, "85% of cheap cigarettes sold in London were found to be counterfeit, rising to 100% in some particular hotspots".[52] The Tobacco Manufacturers Association, which conducts regular surveys, has estimated that 3% of all tobacco consumed in the UK is counterfeit.[53]

This significant and growing threat indicates that there is also a need for a 'joined up' Government public policy approach to intellectual property protection and enforcement.

Responsibility for intellectual property issues is currently shared across numerous Government departments, including the Home Office; the Department for Culture, Media and Sport; the Department for Innovation, Universities and Skills; and the Department for Business, Enterprise and Regulatory Reform.

- ➔ We believe that the current structure within the Government to coordinate the enforcement of intellectual property rights across all sectors, including tobacco, is ineffective. We believe that a high-level intellectual property coordinator should be appointed and should chair an inter-agency committee that will produce and implement a joint strategic plan to enforce intellectual property laws. The committee would comprise the Intellectual Property Office, HMRC, Trading Standards and other relevant units.
- ➔ We call on the Government to avoid destroying or commoditising legitimate tobacco brands, or forcing them out of display and 'under cover'. If smuggling, counterfeit and piracy are to be effectively combated, the intellectual property rights pertaining to legitimate tobacco brands must be properly protected and enforced, to ensure that they are clearly differentiated from illicit counterfeit product.

Please see our responses to Question 10: plain packaging and Question 8: product display.

[52] HM Revenue & Customs, *Reinforcing the Tackling Tobacco Smuggling Strategy, 2006* at 12-13.
[53] Tobacco Manufacturers Association: Monthly 'Pack Swap' Survey, 2007.

Increasing understanding of the risks of smuggled products

"What more can the Government do to increase understanding about the wider risks to our communities from smuggled tobacco products?"

Public education campaigns can, and have, enhanced efforts to increase understanding about the wider risks from smuggled tobacco products, including counterfeit.

Campaigns we have helped to fund in the UK and elsewhere have typically warned consumers not to buy illicit products. Further campaigns might focus on the prevalence of illicit trade, stress that smuggling and counterfeit are not 'victimless crimes', show how consuming or distributing illicit tobacco products contributes to criminality and terrorism and explain the damaging wider economic effects of counterfeiting and piracy.

Along with the other tobacco companies in the UK, we have funded campaigns with HMRC in 2003 and, through our trade association the Tobacco Manufacturers Association, with Retailers against Smuggling in 2005 and 2006.

These campaigns rely on being able to warn consumers only to buy tobacco products from legitimate retailers, not from street corners or other under-cover sources. This important distinction would be severely undermined by attempts to ban the visibility of legitimate product in legitimate retail outlets.

We attach sample posters from these campaigns at Appendix C.

We also support multi-sector campaigns by groups such as the Anti-Counterfeiting Group, the International Chamber of Commerce, the International Anti-Counterfeiting Coalition and others to raise awareness about these wider risks amongst the public, manufacturers, retailers and other businesses involved in the supply chain.

- ➔ We stand ready to offer further financial support for UK public education campaigns to draw attention to the impact of the illicit trade.
- ➔ However, we believe that increasing public understanding will only be effective as part of a holistic approach to tackling illicit trade that includes: better enforcement of laws against the manufacture, importation and sale of illicit tobacco products; addressing the high tax differentials between tobacco products in the UK and other EU countries; and protecting and enforcing the intellectual property rights that clearly distinguish legitimate tobacco brands from the counterfeit products that are manufactured and smuggled by criminals.

Question 6: Youth smoking prevention

"What more do you think the Government could do to:

- ***Reduce demand for tobacco products among young people?***
- ***Reduce the availability of tobacco products to young people?"***

As previously mentioned, the Department of Health's most recent study, for 2007, has found an encouraging long-term decline in the percentage of school age pupils who have ever tried smoking and a 25 year low of 6% of 11-15 year olds who smoke.[54] As we do not want children to smoke and do not direct our products at the under age, we welcome these findings.

Demand

The decline in under age smoking evidenced in the Department of Health's research indicates that educating young people about the risks of tobacco use, including through the National Curriculum in schools, is having the desired effect. We believe the Government should continue with this successful approach.

Availability

To address availability of tobacco products to the under age, we believe that the key areas are:

- Compliance and enforcement of penalties for retailers who sell to children;
- Enforcement to combat the significant UK problem of the illicit trade in tobacco products.

The Government has taken welcome actions within the past year to reduce under age access to tobacco products by raising the minimum age for sale from 16 years to 18, and strengthening the penalties for retailers who break the law. We support rigorous enforcement of these penalties.

The Department of Health expresses confidence in these actions: "We are confident that raising the age of sale, strengthening sanctions against retailers for persistent sale to under-18s and action on reducing the availability of cheap illicit tobacco will help reduce smoking among children into the future".[55]

Our support for preventing under age access

British American Tobacco is committed to helping to ensure that only informed adults can access tobacco products.

Internationally, we support laws and regulations prohibiting the sale of tobacco products to the under age and penalties for retailers who break the law. We encourage our companies to lobby governments for a regulated minimum age for sale of tobacco products where none exists, or to raise the minimum age to 18 years old where it is lower.

On several occasions over the years we have advocated to the UK Government that it should raise the minimum age from 16 to 18 years and we publicly welcomed the Government's recent decision to enact this measure in England and Wales from October 2007.

CitizenCard

In the UK, through the Tobacco Manufacturers Association, we help to fund CitizenCard, the UK's leading proof-of-age scheme, and CitizenCard's *No ID, No Sale* campaign, which also promotes all other PASS accredited (Government approved) Proof of Age / ID schemes.

CitizenCard was launched in 1999. In 2000, British American Tobacco made a significant financial donation enabling CitizenCard to expand more widely, including making the card free

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[54] Fuller E, *Drug Use, Smoking and Drinking Among Young People in England in 2007* at 108.
[55] *Consultation on the future of tobacco control, May 2008* at 24.

to 16 and 17 year olds. CitizenCard has grown strongly since then and currently has 1.8 million cards in issue.

These successful schemes enable retailers to establish the age of purchasers and refuse sales of age-restricted items, including tobacco products. *No ID, No Sale* has engaged over 100,000 UK retailers and has helped to create a culture of young people expecting to be asked to prove their age and retailers accepting only a correct ID.

- ➔ We stand ready to offer further financial support to CitizenCard and retail organisations to assist with appropriate measures to ensure compliance and enforcement of laws restricting under age access to tobacco products.
- ➔ To see the continued long-term decline in under age smoking, the Government should focus on enforcement of the existing newly tightened law and penalties in the critical area of sales to the under age before contemplating any new laws or regulations.
- ➔ We agree with the Department of Health that "the illicit tobacco trade makes tobacco far more accessible to children".[56] We submit that another priority should be tackling illicit sales of tobacco products by street hawkers.

Please also see our response to Questions 4 and 5 on tackling the illicit tobacco trade.

[56] *Consultation on the future of tobacco control, May 2008* at 21.

Question 7: Advertising and promotion of tobacco accessories

"Do you believe that there should be restrictions on the advertising and promotion of tobacco accessories, such as cigarette papers?"

While we have no commercial interest in the sale of tobacco accessories in the UK, we would support regulation if there was sound evidence that it would achieve measurable public health objectives.

The Department of Health acknowledges in the discussion paper that currently there is no hard evidence to suggest that restrictions on the advertising and promotion of tobacco accessories would have any impact on under age smoking.[57]

[57] *Consultation on the future of tobacco control, May 2008* at 29.

Question 10: Plain packaging

"Do you believe that plain packaging of tobacco products has merit as an initiative to reduce smoking uptake by young people?"

We note that the Department of Health is seeking general comments on the concept of plain packaging as "specific proposals are not being considered at present".[58]

Should any specific Government proposal or initiative regarding plain packaging requirements be considered in future, the Department of Health would be required to undertake full lawful consultation with all relevant stakeholders, to which we would wish to respond. As it has been made clear that this is not a full consultation on any specific proposals, we offer some significant general points for consideration.

➔ British American Tobacco is strongly opposed to plain packaging of tobacco products. In the event of any such proposal, we would take every action necessary to protect our brands, our right to compete as a legitimate commercial business selling a legal product and the interests of our shareholders.

Summary

➔ The Government's power to introduce plain packaging is constrained by law, not only by the general principles of public law, the European Convention on Human Rights (ECHR) and EU law, but also by international law, including the WTO Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS).

As more fully outlined below, prohibiting the use of trade marks on tobacco products' packaging would:

(a) Impose restrictions on the registration and use of trade marks based on the nature of the goods or services for which such marks are registered, contrary to the harmonised European and international system of trade mark protection (in particular under TRIPS) and the ECHR;

(b) Be an unlawful interference with the ECHR rights to free speech of manufacturers and consumers of tobacco products;

(c) Constitute a barrier to the functioning of the internal market, contrary to EU law; and

(d) Undermine the very basis upon which intellectual property rights, which are of global commercial significance, are created and protected internationally, with implications far beyond the tobacco industry.

➔ Against this background, the requirement for any future proposals to be properly evidence-based and proportionate is heightened. That requirement is not met.

In particular:

(e) Any freestanding objective of "denormalisation" would be illegitimate;

(f) The evidence relied upon to support the initiative is, at best and on the Department's own admission, "speculative"[59] and is wholly inadequate as a basis for any such highly intrusive regulation;

(g) Less intrusive alternative measures are available and have not been properly considered; and

(h) The introduction of plain packaging would have unintended consequences that run counter to the stated objectives of tobacco regulation.

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[58] *Consultation on the future of tobacco control, May 2008* at 39.
[59] *Consultation on the future of tobacco control, May 2008* at 41.

Legal constraints

Interference with trade mark rights

Intellectual property rights are “a cornerstone of economic activity”,[60] hence both their significant value to their owners and the wider economy and the need for them to be protected effectively at both the domestic and international levels.

The UK Government is not entitled to interfere with trade mark and related intellectual property rights in respect of lawful products by reference to the nature of those products, because such an interference would be contrary to the harmonised EU and international system of trade mark protection with which it is obliged to comply.

The protection of trade marks is harmonised at an EU level by means of the Trade Marks Directive[61] and the Community Trade Marks Regulation.[62] The UK may not introduce measures that are inconsistent with that harmonised regime, which requires the consistent protection of trade mark rights across the EU. Plain packaging regulation would be contrary to this harmonised regime in two principal respects:

(a) It would have the inevitable effect of precluding the continued registration (in the UK but not in other member states) of trade marks in respect of tobacco products, because a prohibition on use would make such marks unregistrable (and existing marks liable to revocation); and

(b) It would, for the same reason, be inconsistent with the UK's obligations under TRIPS, in particular to ensure that:

  (i) "the nature of the goods or services to which a trademark is applied shall in no case form an obstacle to registration of the trademark"[63]; and

  (ii) "the use of a trademark ... shall not be unjustifiably encumbered by special requirements, such as ... use in a manner detrimental to its capability to distinguish goods and services,"[64] which restriction must be read in conjunction with the requirements[65] of necessity and consistency with the other provisions of TRIPS.

Accordingly, the UK Government cannot introduce plain packaging regulations without breaching its obligations under EU and international law, which breaches would render such regulations liable to be struck down.

Furthermore, plain packaging regulations would amount to a deprivation of manufacturers' valuable property rights in the trade marks, copyright and designs incorporated in the packaging and the goodwill arising in the resulting brand, contrary to Article 1 of the First Protocol to the ECHR.[66] Such a deprivation is unlawful unless justified, which it cannot be in this case, and, even if justified, would require the payment of compensation to those who have been deprived. Given the commercial value of manufacturers' trade marks and related rights, the compensation due in those circumstances would clearly be very substantial indeed.

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[60] *Gowers Review of Intellectual Property*, December 2006

[61] First Directive 89/104/EEC of the Council, of 21 December 1988, to Approximate the Laws of the Member States Relating to Trade Marks (OJ EC No L 40 of 11.2.1989)

[62] Council Regulation (EC) No 40/94 of 20 December 1993 on the Community trade mark (OJ EC No L 11of 14.1.1994)

[63] TRIPS, article 15(4)

[64] TRIPS, article 20

[65] TRIPS, article 8(1)

[66] European Convention on Human Rights, ETS No.5 (1950).

Interference with right to free speech

Plain packaging would also inevitably inhibit the ability of manufacturers to communicate with consumers in relation to a lawful product. That ability, both of manufacturers to communicate and consumers to receive information, is protected by Article 10 of the ECHR, which recognises free speech (including commercial free speech) as a fundamental right. Any interference must be justified and, therefore, proportionate. In this case, the proportionality of the interference must be judged against the background of an effective prohibition on all other forms of advertising and promotion. In light of, not least, the importance ascribed to the continued availability of some (albeit heavily regulated) means of effective commercial communication by the High Court of Justice when considering the proportionality of the advertising ban and point of sale regulations under The Tobacco Advertising and Promotion Act, it is clear that a measure, the efficacy of which is questionable but which would extinguish the last vestiges of communication, cannot be justified.

Barrier to trade

That a harmonised system of trade mark protection is crucial to the effective functioning of the EU internal market is expressly recognised in, inter alia, the Trade Marks Directive. The introduction of plain packaging regulations in the UK would, both by imposing additional restrictions on products in the UK and interfering with the ability of manufacturers to communicate with consumers, unlawfully restrict the free movement of goods and the ability of manufacturers from other member states to enter the UK market. As such, any such regulation of this nature would be *ultra vires* as contrary to EU law.

A plain packaging requirement would also constitute an unjustified barrier to international trade in contravention of the UK's international obligations under the General Agreement on Tariffs and Trade 1994 (GATT) and the Technical Barriers to Trade Agreement (TBT).

Implications for the international protection of intellectual property rights generally

The legal constraints imposed upon the UK Government in relation to trade marks by the international regime for their protection reflect the commercial importance of effective trade mark protection. The obligations referred to above are fundamental to the effective international protection of trade marks and related intellectual property rights and their commercial value. Accordingly, a breach of those principles in relation to tobacco products will resonate throughout the world and across all industry sectors and call into doubt the commitment of the UK to an effective intellectual property regime which promotes innovation and value creation.

Plain packaging would be an unprecedented, unwarranted and unlawful attack on the intellectual property rights of brand owners. It would resonate within a wider context of global industry concern about regulatory interference with intellectual property rights (for example, compulsory licensing of patents, especially in the pharmaceutical, healthcare and green technology fields), which are otherwise recognised as being the very foundation of economic growth in the modern world.

Prohibiting a rights holder from enjoying his intellectual property rights in respect of a lawful product would create, for the first time globally, a class of goods in respect of which the universal protection of those intellectual property rights would not apply. If the principle of such discrimination by reference to the goods themselves were established, its application would not logically be limited to tobacco products; alcohol and food are just two examples of industries whose intellectual property rights may come under threat in the same way.

Proportionality and the principle of better regulation

Many of the legal constraints identified above carry with them their own particular tests for justification and proportionality. Irrespective of the detail of those tests, it is axiomatic that any proposal to introduce plain packaging would at a minimum have to satisfy the requirement of proportionality and the principles of better regulation. The level of scrutiny required is heightened, and the hurdle to be overcome to demonstrate that the measure is proportionate is raised, where the measure amounts, as in this case, to an interference with protected rights.

Legitimate policy objective

If and insofar as the Department of Health puts forward the "denormalisation" of tobacco products as a policy objective, that objective is not a legitimate one. While the promotion of public health is recognised as a legitimate policy objective, the denormalisation for its own sake of a lawful product is not.

Requirement for measure to be evidence-based

The Department of Health acknowledges that, in the absence of any examples of jurisdictions in which plain packaging has been introduced, the research evidence to which it refers is "speculative".[67] The dangers of reliance on uncorroborated expressed views as to how consumers would behave in a hypothetical situation are well-known. It is clear that the studies referred to by the Department of Health are wholly inadequate as a basis for the implementation of a measure that not only may have unintended counter-productive consequences, but raises fundamental issues with implications far beyond the tobacco industry.

Alternative measures

The test of proportionality requires, inter alia, that the measures adopted are the least intrusive capable of achieving the identified (and legitimate) policy objective. In this case, even disregarding the absence of evidence to demonstrate that the measure would be effective in achieving the objective, there are a range of other measures that could be taken, including the enforcement of existing regulations, which have not been properly assessed. The Department of Health is unable therefore to demonstrate that plain packaging is a proportionate measure.

Unintended consequences

The Department of Health has failed to recognise the potential for plain packaging, and the consequent commoditisation of tobacco products, to have unintended effects that would run directly contrary to its stated objectives, and that must be taken into account in assessing proportionality. For example:

(a) The consequent commoditisation would be likely to lead to price becoming the sole identifiable product feature, encouraging vigorous price competition and leading to consumers switching to cheaper products, of which they can afford more.

(b) Plain packaging would facilitate counterfeiting and smuggling, and thus the distribution of products through unregulated, untaxed criminal networks more readily open to under age and vulnerable smokers, while at the same time making policing of illicit trade significantly more difficult.

➔ All of the above taken together shows that plain packaging regulations could not be justified as a rational and proportionate means of achieving legitimate public health objectives.

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[67] *Consultation on the future of tobacco control, May 2008* at 41.

Question 11: Increased minimum pack sizes

"Do you believe that increasing the minimum size of cigarette packs has merit as an initiative to reduce smoking uptake by young people?"

British American Tobacco does not have a significant commercial interest in the sale of packs of 10 cigarettes in the UK. However, we believe that the ability to sell cigarettes in such smaller pack sizes should be maintained.

We do not believe that a ban on packs of 10 is an effective or proportionate response to preventing youth smoking. The Scottish Executive's Smoking Prevention Working Group has noted: "there is apparently no objective evidence to demonstrate the effectiveness of banning packets of ten…as a means of reducing young people's access to cigarettes".[68]

A ban on packs of 10 cigarettes would risk the unintended consequence of depriving adult smokers of a way of limiting their consumption of cigarettes. Over 20% of adult smokers in the UK purchase packs of 10 cigarettes.[69] A ban on packs of 10 cigarettes could drive adult smokers who buy them to the illicit market. A legitimate pack of 10 cigarettes in the UK currently costs around £2.80[70] while a pack of 20 smuggled cigarettes is currently sold by street hawkers for around £2.50. Given the prevalence and availability of smuggled and counterfeit product in the UK, we believe that prohibiting packs of 10 would be unwise.

➔ Rather than increasing the minimum size of cigarette packs, we believe the Government should focus on compliance at the point of sale with the recently-introduced higher minimum sales age of 18 and enforcement of the newly strengthened penalties for sales to the under age.

[68] Scottish Executive, *Towards a Future Without Tobacco: Report of the Smoking Prevention Working Group*, 2006, at 34.
[69] AC Nielsen, *Smoking Monitor*, June 2008
[70] Recommended retail price of Lucky Strike, Consulate and Rothmans packs of 10, August 2008.

Question 12: Smoking at home and in the car

"Do you believe that more should be done by the Government to reduce exposure to secondhand smoke within private dwellings or in vehicles used primarily for private purposes? If so, what do you think could be done? Where possible, please provide reference to any relevant information or evidence to accompany your response."

➔ We do not support attempts to ban or regulate against smoking in private dwellings or private vehicles. We believe that people should not smoke around young children. However, we think this is more effectively achieved through education.

The discussion paper states that: "Research undertaken in the Republic of Ireland and Scotland shows no evidence of smoking shifting from public places into the home after the implementation of smoke-free legislation. In fact, some stakeholders have suggested that smoke-free legislation can reduce smoking within the home because of the greater awareness of the risks of second-hand smoke and that the new laws promote the habit of smoking outdoors".[71]

We also note that "the Government has no plans for smoke-free legislation to be extended to private dwellings"[72] and that it "has made a commitment to undertake a review of smoke-free legislation in England in 2010, in which stakeholders will be asked to participate".[73]

[71] *Consultation on the future of tobacco control, May 2008* at 45.
[72] *Consultation on the future of tobacco control, May 2008* at 45.
[73] *Consultation on the future of tobacco control, May 2008* at 45.

Smoking cessation

Question 13: *"What do you believe the Government's priorities for research into smoking should be?"*

Question 14: *"What can be done to provide more effective NHS Stop Smoking Services for:*

• Smokers who try to quit but do not access NHS support?

• Routine and manual workers, young people and pregnant women – all groups that require tailored quitting support in appropriate settings?"

Question 15: *"How can communication and referral be improved between nationally provided quit support (such as the website and helplines) and local services?"*

Question 16: *"How else can we support smoking cessation, particularly among high-prevalence or hard-to-reach groups?"*

➔ Given the risks of tobacco use, we support a policy intention aimed at making cessation services available to all smokers and which sustains the existing universal awareness of the risks of tobacco use. We believe that the Government and relevant community health partners should ensure that there is adequate provision of such services.

Question 17: Harm reduction

"Do you support a harm reduction approach and if so can you suggest how it should be developed and implemented?"

Regulatory policies based on discouraging smoking and encouraging quitting have been effective, leading to significantly lower smoking rates, including in the UK.

However, we believe that regulators now face a dilemma. While the proportion of adults who smoke is likely to continue declining, a large minority of adults look highly likely to continue consuming tobacco. The World Health Organisation predicts that in 10 years' time, even with increasingly strict tobacco regulation, there will be as many or more smokers globally in as there are today, as falling tobacco consumption is offset by a strongly rising world population.

A key question for the Department of Health, as for regulators elsewhere, is whether tobacco harm reduction should continue only to mean abstinence, or whether policy should accommodate the option of potentially reduced-risk products for the millions of adults who choose to continue consuming tobacco products.

Some regulators and tobacco control advocates reject this concept, suggesting that such products may discourage smokers from quitting or lead people to become tobacco consumers who would not otherwise have done so. However, we and a proportion of the public health community believe that regulators, including in the UK, could achieve further public health gains through regulatory approaches that include potentially reduced-risk products.

In relation to tobacco regulatory policy, the following extract indicates the arguments advocated by several interested parties in the public health community in favour of a regulatory approach that facilitates the development and sale of consumer-acceptable, reduced harm tobacco products:

> "If the goal is reduction of death, injury and disease, product regulation must be narrowly focused on reduction of harm. Regulators should replace the abstinence only paradigm with a pragmatic science-based public health approach that includes risk reduction strategies for continuing users. With this approach we can achieve a great advance for global health".[74]

For these reasons we would like to see tobacco harm reduction accepted as a pillar of tobacco regulatory policy, alongside prevention and cessation.

- ➔ We and a section of the public health community believe that regulators could achieve further public health gains through regulatory approaches that included potentially reduced-risk products.
- ➔ We ask that tobacco regulation include provision for appropriate communication to consumers about potentially reduced-risk products, to enable them to make informed choices.
- ➔ We ask the Government to work with other interested parties to modify the EU ban on snus sales, to allow its sale in the UK and elsewhere in the EU.
- ➔ We ask for and would greatly welcome further constructive discussion on a tobacco harm reduction approach with the Department of Health, including on how suitable regulatory frameworks might be shaped for sales of smokeless tobacco products such as snus and for assessing and bringing to market other potentially reduced-risk products in the future.

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[74] Sweanor and Grunberger, *The Basis of a Regulatory Policy for Reduced Harm Products*, Journal of Health Care Law & Policy, 11; 83, 83-92 at 92, *2005*

APPENDIX A

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Report of Jonathan Klick, Ph.D.

Submitted by British American Tobacco in Support of Its Response to the UK Department of Health's Consultation on the Future of Tobacco Control

August 31, 2008

I. BACKGROUND

I, Jonathan Klick, am a Professor of Law and Economics, at the University of Pennsylvania and the Wharton School of Business as well as a Senior Economist at the RAND Corporation, Institute for Civil Justice. Before taking up my present position, I was the Jeffrey A. Stoops Professor of Law and Economics at Florida State University. Prior to that, I served as the Associate Director of the Liability Project at the American Enterprise Institute and was a Research Economist working on statistical methodology issues relating to National Accounts at the National Income and Wealth Division at the Bureau of Economic Analysis. In addition, I was a Researcher for the Health Policy Section of the 2002 Economic Report of the President prepared by the Council of Economic Advisors.

I received a B.S. in Economics from Villanova University, an M.A. in Economics from the University of Maryland, a Ph.D. in Economics from George Mason University and a J.D. from George Mason University School of Law. I specialize in the fields of law and economics and have published numerous articles focusing on econometric studies of legal institutions and offsetting behaviors in health and safety regulation. A copy of my curriculum vitae is attached to this report.

I have been retained by counsel for British American Tobacco to analyze the econometric and public health literature and other available factual evidence to assess the likely effectiveness of further point of sale display restrictions in the United Kingdom. I was asked to review the large econometric and public health literature on the effects of advertising on smoking outcomes, including the literature relied upon in the U.K. Department of Health Consultation on the Future of Tobacco Control, focusing in large part on the statistical methods used by researchers in this area and their ability to isolate causal effects of advertising on smoking. Additionally, I was asked to consider whether further point of sale display restrictions may have unintended consequences not recognized or evaluated by the DOH.

II. EXECUTIVE SUMMARY

The U.K. Department of Health's Consultation on the future of tobacco control ("DOH Consultation") dated May 2008 addresses a wide range of issues one of which is whether there "should be further controls on the display of tobacco products in retail environments."[1] According to the DOH Consultation:

> "[s]takeholders in the public health community argue that the key rationale in controlling the display of tobacco products at the point of sale is the protection of children and young people from the promotion of tobacco. For as long as tobacco is promoted through display on large gantries, there is a danger that new generations of smokers will be recruited."

[1] See DOH Consultation, at p. 30, ¶3.24.

In support of this, the DOH Consultation states that:

> "Research shows that young people are highly receptive to tobacco promotion and can be influenced to take up smoking as a result. Tobacco promotion familiarises potential customers with the product and can stimulate impulse purchases among those not intending to buy cigarettes and, importantly, among smokers who are trying to quit."[2]

As detailed below, the body of literature cited cannot properly or reasonably be relied upon to support these assertions. In short, the studies relied upon do not individually or in the aggregate provide a sound evidential basis on which to infer any causal link between POS display and smoking uptake or consumption, because: a) all but two of the studies relate to broad forms of advertising, which are already prohibited in the UK and, as such, are not directly relevant; and b) all of the literature suffers from serious methodological flaws.

Current Restrictions Relating to Point of Sale Display

Under the current regime, the Tobacco Advertising and Promotion Act 2003 ("TAPA") bans advertising and the publication of tobacco advertisements. Pursuant to TAPA, brand advertising at the point of sale is limited to a maximum space of the equivalent of an A5 size piece of paper on a gantry, display cabinet, tray or other product in which a tobacco product is held pending sale. The A5 advertisement must include a health warning occupying 30% of its area. Advertisements are limited to one area in a store even if the premises have more than one point of sale for tobacco products. The TAPA regulations do not contain any restrictions regarding the manner in which cigarette packs can be displayed and permit display expressly.

It is important to highlight that the present inquiry concerns one specific form of marketing, point of sale cigarette display ("POS display"). The vast majority of the literature relied upon in the DOH Consultation in support of further restrictions of POS display addresses published research that covers forms of advertising other than POS display. As an initial matter, this evidence seems to have little, if any, relevance to the present inquiry since all forms of non-POS advertising of tobacco products in the U.K. are already banned.

All of the literature cited by the DOH suffers from serious methodological flaws and therefore cannot be relied upon

The econometric and public health literature relied upon by the DOH Consultation that purports to address the effects of broad forms of advertising on smoking outcomes is unreliable as it fails to use modern sophisticated techniques that

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[2] See DOH Consultation, at p. 7.

economists employ to isolate causality in estimated relationships. Indeed, this point has been made explicitly in the smoking initiation context by Nobel Prize winner James Heckman, generally regarded as being one of the premier researchers in the area of causal inference.[3] Accordingly, the DOH's reliance on this literature to support further restrictions on POS display is misguided.

The literature on whether advertising generally, and POS display specifically, promotes youth smoking suffers from major methodological shortcomings that make it impossible to draw valid conclusions. This research fails to distinguish between causality and mere statistical association. Because it is generally not possible to control for an individual's underlying characteristics that make him both more likely to be exposed to advertising and more likely to smoke, results from these kinds of studies do not illuminate the actual relationship between advertising and smoking decisions. There are no studies that avoid these identification problems with respect to tobacco consumption by minors. What is true of the literature on the effects of advertising restrictions on smoking among children and adolescents is also generally true about the literature on the effects of advertising on adult smoking outcomes. Those finding a negative relationship between restrictions and smoking outcomes are not robust, exhibiting substantial sensitivity to specification changes -- that is, what control variables are included -- as well as which jurisdictions and time periods are analyzed. None of the data or existing studies employs statistical strategies and techniques that are likely to isolate the causal effects of the restrictions themselves, separate from underlying background trends in smoking rates.

On the issue of whether POS display plays a significant part in smoking maintenance among established smokers or that it reduces the likelihood that smokers who wish to quit smoking will do so, the empirical evidence does not support this. As further detailed below, this conclusion stems from the fact that the limited research evidence on POS display has serious limitations that call into question the validity of their findings.

Evidence on the effects of actual advertising restrictions and display bans does not support the efficacy of these measures

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[3] As described in the Nobel Prize citation (http://nobelprize.org/nobel_prizes/economics/laureates/2000/press.html) : "Available micro data often entail **selective samples**. Data on wages, for instance, cannot be sampled randomly if only individuals with certain characteristics - unobservable to the researcher - choose to work or engage in education. If such selection is not taken into account, statistical estimation of economic relationships yields biased results. Heckman has developed statistical methods of handling selective samples in an appropriate way. He has also proposed tools for solving closely related problems with individual differences unobserved by the researcher; such problems are common, e.g. when evaluating social programs or estimating how the duration of unemployment affects chances of getting a job. Heckman is also a leader of applied research in these areas."; Also see "An ABF Perspective on James Heckman and His Scholarship," a 2002 special issue of the journal *Law and Social Inquiry* for remarks made by a number of high profile economists such as Steven Levitt, Austan Goolsbee, and John Donohue honoring Heckman for his contributions.

In addition, data from countries that have implemented POS display restrictions and advertising restrictions do not support or establish the efficacy of such advertising bans. Specifically, where POS display restrictions have been implemented, they have not been successful in producing reductions in levels of smoking among young people.

Further restrictions on POS Display may generate unintended counterproductive consequences

Given this lack of sophisticated, robust evidence about the causal effect of advertising on smoking outcomes, expanding advertising restrictions to curtail POS display advertising is unreasonable, particularly in light of the many unintended consequences that could flow from a POS display ban. Further, the increasing restriction on tobacco manufacturers' advertising rights may generate counterproductive unintended consequences that undercut the policy goal of reducing smoking rates. As the ability to communicate with customers on product differentiation through POS display is further restricted or eliminated, tobacco companies will be induced to compete solely on the price margin. The effect of declining prices on smoking rates is uncontroversial: Lower prices lead to more smoking. Because the literature demonstrates unequivocally that price and smoking exhibit a negative relationship, there is the very strong possibility that advertising restrictions would lead to increased smoking in the long term.

Additionally, as tobacco manufacturers are effectively restricted from advertising the differences between their products and those of competing firms, there will be very little incentive for innovation in this market. Further, as tobacco products come to be seen as less and less differentiated, demand for black market tobacco products is almost certain to grow, leaving the market effectively less regulated by public regulators and private firms alike, while also reducing revenue from tobacco taxes. Lastly, while many proponents view advertising restrictions as a way to de-normalize smoking, it could have the perverse effect of generating a "forbidden fruit" effect that may be especially strong among young individuals.

The potential for each of these unintended consequences makes it vital that policies in this area are based on solid empirical evidence about the efficacy of such restrictions. However, as will be discussed at length below, the literature in this area does not come even close to reaching the threshold where a sophisticated and unbiased reader would feel confident in declaring that there is a positive causal relationship between advertising exposure and smoking rates for children or for adults. Given the weak to non-existent empirical foundations regarding the efficacy of tobacco advertising restrictions with respect to uptake rates among children and adults, as well as quit rates among current smokers, policy interests are ill-served by POS display restrictions, which are likely to have little or perhaps even counterproductive effects on public health.

The Impact Assessment, in addition to being methodologically flawed, fails to take account of significant tax and other economic implications

Finally, the Consultation-stage impact assessment for controlling the display of tobacco in retail environments, in addition to being premised on the methodologically flawed and inapplicable literature, fails to take account of the tax and other economic implications arising from the purported reduction in smoking. As will be discussed, the significant loss in tax and other revenues that could flow from the assessment's speculative and erroneous figures, calls into question its conclusion that the benefits of a restriction outweigh the costs.

This comment proceeds as follows: Section III evaluates why the studies relied on by the DOH Consultation are both largely irrelevant to the DOH inquiry, unreliable and do not establish a causal relationship between advertising and smoking decisions; section IV addresses the likelihood that POS display restrictions might generate a host of unintended consequences that would undercut general policy goals; and section V concludes.

III. THE LITERATURE ON THE EFFECTS OF ADVERTISING AND SMOKING OUTCOMES IS FLAWED AND UNRELIABLE

A. The Literature Investigating the Effect of Broad Forms of Advertising on Smoking Outcomes is Irrelevant to the DOH Inquiry

As an initial matter, the vast majority of the studies relied upon in the DOH Consultation, with the exception of two studies (discussed below in section III D), are not relevant to the effect of POS cigarette display on smoking outcomes because they address the effects of broad forms of advertising on smoking outcomes rather than POS display specifically. These studies provide no evidence regarding the effect of POS cigarette displays on smoking outcomes.

B. Causal Inference in Smoking Studies

Notwithstanding this, the DOH's heavy reliance on these studies warrants a discussion regarding the validity of the studies examining the effects of broad forms of advertising on smoking outcomes. In order to better explain why these studies all suffer from methodological flaws that make it unreasonable to rely upon them for a causal relationship between advertising and smoking decisions, it is helpful to understand how causation should be assessed.

Identifying systematic statistical relationships involves calculating how much some outcome (e.g., Does individual *i* start smoking within the next year?) varies on average for a given change in some variable of interest (e.g., Is individual *i* exposed to tobacco advertising during the next year?). In an experimental setting, non-smoking individuals would be randomly separated into two groups: 1) a treatment group that is exposed to tobacco advertising and 2) a control group that is not exposed to tobacco

advertising. Assuming that the randomization is done properly and the control group is kept from observing advertising, if the size of the two groups is sufficiently large, an analyst could be confident that a causal estimate of the effect of exposure to advertising is calculated by subtracting the fraction of individuals who start smoking within the year in the control group from the corresponding fraction in the treatment group. That is, if only 5 percent of the control group starts smoking within the year, while 15 percent of the treatment group starts smoking, the analyst would infer that exposure to advertising increases smoking rates by 10 percent and the effect is a causal one.

This experimental setting is generally seen as the "gold standard" in statistical inference. However, even in this setting, it is possible for problems to arise. If the randomization is not really random, causal inferences cannot be drawn. For example, if during the randomization, participants were able to indicate whether they would enjoy being exposed to tobacco advertising and this preference were used to determine which group the individual was assigned to, the process laid out above might not generate a causal estimate of the effects of advertising. Specifically, if those who have a preference for tobacco advertising are also more likely to start smoking, it is not clear whether the exposure to advertising has any effect on smoking rates as those individuals who "self selected" into the treatment group were more likely to start smoking anyway, even if they had not observed any advertising. Such a bias arises even if the self selection only applies to some individuals. Another example of this self selection problem arises if some individuals in the treatment group are so opposed to smoking that exposure to tobacco advertising induces them to drop out of the study. Because these anti-smoking individuals were unlikely to begin smoking, their attrition from the treatment group artificially increases the fraction of eventual smokers among those exposed to advertising.

Some of the literature on advertising exposure and smoking attempts to avoid the self selection problem by employing experimental techniques in a controlled environment where subjects are randomly assigned to different levels of exposure. If the sample pool is large enough, the analyst assumes that pre-existing differences in germane unobservable characteristics are unrelated to the exposure level to which the individual is assigned. Such an approach is a means to control for the difficulties involving inherent characteristics discussed above if randomization in exposure is properly carried out. However, experimental studies are not immune to their own set of problems, such as concerns over external validity (i.e., are the experimental results predictive of what happens in the real world context).

In non-experimental settings, which comprise a majority of the studies relied upon by the DOH Consultation, drawing causal inferences from observed correlations is much more difficult. The challenge of isolating causal relationships within observational data -- that is, data that is not generated by a controlled randomized experiment -- has been the central focus of modern econometric and statistical research attempting to address these problems and developing a number of techniques to identify and mitigate these biases. Some of these techniques have been used with great success to examine, for example, the effects of cigarette taxes on smoking rates (see, for example, Forster and

Jones, 2001 for an example using British data and Keeler, et al. 2001 for an example using US data). In this regard, research on smoking is not unique. All non-experimental empirical studies of policy questions face these challenges. In the context of the effects of advertising on smoking outcomes however, these sophisticated techniques are almost wholly absent from the econometric and public health literatures on the relationship between advertising exposure and smoking rates (Heckman, et al. 2008).

C. The Literature on the Effects of Broad Forms of Advertising is Unreliable

As will be discussed below, none of the studies relied upon in the DOH Consultation employ methodology that would allow one to isolate a causal relationship between advertising effects and smoking outcomes among adolescents and adults. The major methodological flaws running throughout this literature include, but are not limited to, the failure to control for underlying individual characteristics relevant to decisions about smoking (or lack of random assignment), the failure or inability to control for background trends and other variables and inappropriate study design and statistical analysis. A more detailed discussion of the studies is contained in Appendix A.

1. *Lack of random assignment (failure to control for underlying individual characteristics relevant to decisions about smoking)*

A common problem found throughout the literature generally, including the literature relied upon in the DOH Consultation, is that individuals are not randomly assigned to various levels of advertising exposure (See, for example, Henricksen, et al. 2004). Because measures of advertising exposure and receptivity are not randomly assigned they may be measuring individual underlying preferences for smoking leading to an inference of self-selection as opposed to a causal inference. Indeed, the characteristics and underlying preferences of an individual affect how much cigarette advertising he is exposed to and how receptive he is to that advertising. Those characteristics are correlated with the individual's propensity to smoke.

The typical pattern of the research on the effects of advertising on smoking outcomes is to collect data on various metrics of exposure or receptiveness to tobacco advertising and correlate those metrics with current or eventual smoking status. These metrics (or measures) are likely correlated with other non-advertising factors that are directly related to the smoking decision. Short of validated random assignment (which is absent in these studies), to generate any confidence in a causal inference on the basis of these correlations, very detailed data about the attributes of the adolescents and/or adults in the study samples would be necessary to rule out these alternate factors as the actual causal mechanism in the purported advertising and smoking link. However, all of the studies cited in the DOH Consultation fail to control for and lack detailed data that address sources of influence over early tobacco advertising and promotion receptivity and an appropriate analysis to trace links over time between these variables (See, for example, Henriksen, et al. 2004; Pierce, et al. 1991; and Pierce, et al. 2002).

As noted, exposure to and receptivity towards tobacco advertising is likely correlated with other hard to control for attributes of individuals that will also independently affect their decision to smoke or not (See, for example, Klitzner, et al. 1991). One example of an important underlying propensity to smoke involves children whose parents smoke. Indeed, the literature is clear that a strong influence on smoking by minors is parental smoking, as reported in the 1998 UK report Smoking Kills: A White Paper on Tobacco[4] and virtually no one disputes the claim that children of smokers are much more likely to smoke themselves.[5] This would be true regardless of whether the child ever even observed any advertising. However, those children are more likely to be exposed to tobacco advertising leading to a bias in estimating the causal effect of advertising on smoking rates among children. Failure to sufficiently control for this effect leads to a biased estimate of the effect of exposure to advertising on a child's decision to smoke.

If individuals differ in their baseline propensity to start smoking and those individuals who are more likely to eventually smoke are also more likely to read magazines containing tobacco advertisements or to collect tobacco promotional items, even if advertising and promotional items do not have any effect on smoking decisions, a researcher will estimate a positive correlation between exposure to tobacco advertising and smoking rates. If the researcher could perfectly control for that underlying interest, this correlation would appear. In this example, the same characteristics that lead an individual to start smoking also lead the individual to be exposed to tobacco advertising and to collection of promotional items. Unfortunately, something as ambiguous as interest is not easily quantifiable and many datasets will not contain even imperfect

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[4] http://www.archive.official-documents.co.uk/document/cm41/4177/4177.htm . The document cites Royal College of Physicians of London. *Smoking and the young: a report of a working party of the Royal College of Physicians*. London: Royal College of Physicians, 1992; see also Flay *et al*., "Cigarette Smoking: Why Young People Do It and Ways of Preventing It," *in* P. McGrath & P. Firestone (eds.), Pediatric and Adolescent Behavioral Medicine: Issues in Treatment 132-183 (New York: Springer Publishing Co., 1983); Chassin *et al*., (1986) "Changes in Peer and Parent Influence During Adolescence: Longitudinal Versus Cross-Sectional Perspectives on Smoking Initiation," DEVELOPMENTAL PSYCHOLOGY 22(3) 327-334; Conrad *et al*., (1992) "Why Children Start Smoking Cigarettes: Predictors of Onset," BR. J. ADDICTION 87(12) 1711-1724.

[5] For a very recent study using sophisticated econometric techniques to analyze this relationship using UK data, see Loureiro, Sanz-de-Galdeano, and Vuri (2006) available at http://ftp.iza.org/dp2279.pdf. See also Flay *et al*.,(1983) "Cigarette Smoking: Why Young People Do It and Ways of Preventing It," *in* P. McGrath & P. Firestone (eds.), Pediatric and Adolescent Behavioral Medicine: Issues in Treatment 132-183 (New York: Springer Publishing Co.) ("These factors often vie for the primary predictive position" at 137); Chassin *et al*., (1986) "Changes in Peer and Parent Influence During Adolescence: Longitudinal Versus Cross-Sectional Perspectives on Smoking Initiation," DEVELOPMENTAL PSYCHOLOGY 22(3) 327-334 ("From our longitudinal analyses, it is clear that both peer and parent factors significantly predict future transitions in smoking status. The initial onset of smoking among never smokers was more likely for adolescents with more smoking friends and parents, for those who had lower levels of parental support, and for those whose friends had lower expectations for the subject's general and academic success" at 332); Conrad *et al*.,(1992) "Why Children Start Smoking Cigarettes: Predictors of Onset," BR. J. ADDICTION 87(12) 1711-1724 ("Older sibling smoking . . . predict[s] onset consistently across multiple studies," as do "[a]cademic values/expectations," "perceived agreement between parents regarding expectations of the adolescent," "intentions to smoke" and "prevalence estimates of use by peers" at 1716-1719).

proxies for this interest (See, for example, Pierce, et al. 2002). The studies relied upon in the DOH Consultation fail to control for this.

In studies investigating the effect of advertising on youth smoking, it is important for researchers to identify and control for independent predictors of youth smoking. However, the studies generally, and those relied upon in the DOH Consultation, fail to do so (See, for example, Henriksen, et al. 2004; Pierce, et al. 1998). Important predictors of youth smoking, besides parental smoking, include, among other things, both cognitive and non-cognitive measures as shown convincingly in a study by Nobel Prize winner James Heckman (Heckman, et al. 2006). Heckman received the Nobel Prize for explaining and showing how to solve self-selection problems, that is, how to accurately infer causality when dealing with non-experimental data. In Heckman, et al. (2006), using a sophisticated matching technique[6] to control for the effect of unobservable individual characteristics, generating strong confidence in the causal interpretation of its results, the researchers found that both cognitive (e.g., achievement test results) and non-cognitive (e.g., perceptions of self worth) measures are strong predictors of the decision to smoke for both females and males by the age of 18. Further, they demonstrate that education measures do not adequately control or proxy for these effects. The Heckman, et al. study identifies characteristics that 1) are important for the analysis of youth smoking, 2) are likely to be correlated with exposure and receptiveness to tobacco advertising, and, yet, 3) are absent as controls in the advertising studies relied upon in the DOH Consultation (See, for example, Henriksen, et al. 2004; Pierce, et al. 1998; Pierce, et al. 1991). This alone suggests that there may be significant biases in the results generated by the advertising studies.

In addition, the underlying characteristics are often difficult to control for statistically for a host of reasons. First, the researcher may not be aware of which characteristics are important for both the smoking and exposure decisions. Second, even if the researcher is aware of the importance of these characteristics, they may be inherently difficult to quantify (e.g., an individual's inclination for risky activities). Lastly, even if the researcher is aware of the important characteristics and they could be measured, if the researcher is using data collected by others to perform her analysis, many of these important attributes will often be missing from the dataset. As evidenced by the literature, it is generally not possible to control for all of these characteristics and preferences, both because of failure of researchers to collect sufficiently detailed data about the individual and because some of these "variables" are very difficult to quantify.

Given these methodological limitations, analysts must be very cautious in interpreting measured correlations between observable variables, such as exposure to advertising and eventual smoking decisions. The failure to control for baseline differences in smoking propensity leaves open the possibility that observed correlations are due to these underlying characteristics and preferences that determine both exposure and smoking choices. Therefore, it is not possible to interpret correlations between (self-selected) exposure levels and smoking metrics causally. Instead, at least some, and

[6] Note that techniques of this sort are non-existent in the smoking and advertising literature.

perhaps all, of the correlation is due to those underlying characteristics and preferences that determine both exposure and smoking choices.

In sum, the studies examining the effect of broad forms of advertising have not unequivocally identified receptivity to tobacco advertising and promotion as a causal agent. Nor do they provide any evidence that POS cigarette displays have an effect on smoking outcomes. Instead, it seems likely that the causal agent for pre-smoking interests might be found among parents, siblings or friends who already smoke and also exhibit receptivity to tobacco promotions.

2. *Failure or inability to control for background trends and other variables*

Similar self-selection problems exist in studies making causal inferences from correlations between advertising levels in local markets and smoking in those markets. It is reasonable to assume that tobacco manufacturers advertise solely to increase or maintain market share. Because advertising resources are limited, they must target specific markets. Manufacturers will target markets that are growing (say for demographic reasons) or those that are declining more slowly as opposed to markets that are declining quickly leading to a self selection problem in terms of advertising levels. A researcher, who is unlikely to have the same kind of market data or expertise available to the firms themselves, may find a positive correlation between advertising measures and smoking (See, for example, Smee, et al. 1992), but such a correlation will exist not because advertising increases smoking. Instead, the fact that firms chose to invest their advertising resources in growing markets leads to the correlation. Some researchers, recognizing this self-selection problem, have made some modest attempts to address the selection effect issue in the adult-specific literature, generally leading to a rejection of the claim that advertising is causally related to smoking outcomes.[7]

In addition, another key flaw in the literature studying the effect of advertising restrictions on smoking outcomes is that advertising restrictions tend to be adopted by jurisdictions that are in the midst of existing background trends (potentially complex non-linear trends) that are relatively difficult to control for. Failure to mitigate the effects of these underlying background effects through powerful identification strategies is likely to introduce substantial biases in the estimated effects of restrictions. It is not generally possible *a priori* to predict the magnitude or even the direction of such biases. Plausible stories can be offered for the possibility of either positive or negative biases. For example, if jurisdictions tend to adopt restrictions when policymakers determine that smoking rates are increasing, a negative bias (i.e., estimated declines arising from the restrictions will be understated) will be introduced in any estimated effect of these restrictions. On the other hand, if jurisdictions tend to adopt advertising restrictions in the hope of further accelerating smoking rate declines when residents are already more health conscious, a positive bias (i.e., estimated declines arising from the restrictions will be overstated) will be present. Overall, confidence in the studies investigating the impact of advertising restrictions or bans adopted by different jurisdictions is extremely low

[7] See Nelson (2003), discussed below.

because none makes an effort to address the self selection problem wherein legislatures and regulators view restrictions as a relatively safe policy when smoking is already trending downward.

Moreover, the general thrust of the literature on the effect of advertising restrictions on aggregate smoking measures does not support the proposal for a POS display ban. For every study that finds a negative effect of restrictions on smoking, there is at least one other study finding no statistically significant effect. While the results do seem to be sensitive to which countries are examined and what time period makes up the sample, there is even a good degree of sensitivity among studies looking at roughly the same countries and years. A principled review of this literature suggests that results are not robust even before one confronts the self selection biases. Even studies employing transparent meta-analysis criteria reach opposite conclusions (see, for example, Nelson, 2006; and Gallett and List, 2003) with results hinging critically on which individual studies are included. To the extent any researchers have attempted to mitigate the self selection problem to account for the non-random passage of restrictions, it appears as though it is not possible to identify any systematic effect of restrictions independently from underlying trends, though not nearly enough work has been done on this issue. The literature does not reliably support even weak policy conclusions as regards the effect of advertising restrictions on smoking rates overall.

Another difficulty relating to causal inference in this area involves the fact that advertising restrictions are often implemented simultaneously with other anti-smoking policies (such as public education campaigns or increases in cigarette taxes) making it difficult, if not impossible, to parse out the individual effects of each policy. Further, many studies fail to control for other policies that may affect smoking outcomes, such as taxes on goods that are complementary to smoking (e.g., alcohol). This too has the effect of introducing bias into the estimates of the effects of advertising restrictions.

3. *Inappropriate study design and statistical analysis to infer causality*

Many of the studies relied upon in the DOH Consultation employ study designs and statistical analysis that are neither methodologically equipped nor suitable to isolate causal relations between advertising exposure and smoking outcomes. For example, cross-sectional studies (see, for example, Henriksen, et al. 2004) are not methodologically equipped to confirm a causal role for advertising and the decision to smoke. Indeed, it is widely acknowledged that cross-sectional studies are not appropriate to test causal relations over time between variables such as cigarette advertising and youth smoking behavior (Lovato, et al. 2004). In addition, many of the studies employ inadequate statistical analysis to establish causality (See, for example, Henriksen, et al. 2004).

4. *Conclusion*

The primary message of this research is that it should not be used to interpret correlations among behavioral outcomes and various variables or characteristics whose values are not randomly assigned to the individuals being studied. In effect, these observational studies have the potential to be like the experiment where subjects are sorted into the treatment and control groups on the basis of their professed desire to be exposed to advertising. As detailed in Appendix A, the failure to account for these problems pervades every study relied upon in the DOH Consultation examining the relationship between advertising measures and smoking outcomes. This failure makes it impossible to rule out non-causal channels that are consistent with the observed correlations between advertising measures and smoking outcomes. Indeed, as the Nobel Prize winning economist James Heckman recently wrote:

> "The findings in the public health literature linking tobacco company (nonprice) marketing campaigns [with smoking outcomes] emerge from empirical implementations that fall far short of those required to establish well-founded causal relationships. These studies do not accurately model human behavior, as these studies ignore how human choice affects the measurement for both 'treatment' and outcome." (Heckman, et al. 2008, at p. 43).

Because of these shortcomings, Heckman, et al. argues that this literature (the same literature relied upon by the DOH) is generally unreliable.

Moreover, in many instances, the non-causal explanations are intuitively persuasive. Further, in the few instances where researchers attempted to control for these selection effects, it is not possible to detect any effect of advertising on smoking outcomes (See, for example, Nelson, 2003). These observations apply to studies examining smoking among children and adults alike.

Lastly, other Governments have also recognized the difficulty with causally connecting advertising restrictions with smoking outcomes. For example, the Norwegian Department of Health and Care Services, in considering whether to introduce restrictions on POS displays in Norway, conceded that "there is yet no scientific study published that definitely shows the impact that a ban against public display would have on the number of people who smoke."[8] Similarly, Health Canada, in its consultation document proposing to introduce new regulations respecting the display of tobacco products at retail, states that "[i]t is possible that the restrictions on tobacco displays at retail will have an impact on the trend, but this remains very speculative at this time."[9]

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[8] Public hearing of a proposal on a ban against visible display of tobacco products at point of sale, as well as certain other changes to the Tobacco Damage Act and the Advertising Regulation, Norwegian Ministry of Health and Care Services, March 2007.

[9] Health Canada, "A Proposal to Regulate the Display and Promotion of Tobacco and Tobacco-Related Products at Retail, Consultation Document December 2006, p. 12.

D. Studies Investigating The Effect Of Point Of Sale Display On Smoking Outcomes Are Similarly Flawed

There are only two studies, both by Wakefield, et al., that specifically investigate the effect of POS display on smoking outcomes. Both of these studies are discussed in the DOH Consultation[10] and both are rife with many of the problems discussed above. Moreover, even when taken at face value, they provide little support for the association of POS display with smoking outcomes.

The first of the two Wakefield studies (Wakefield, et al. 2006), investigated the effects on schoolchildren of exposure to POS advertising and display. In this study, the investigators showed school children pictures of a typical convenience store POS area. One group was shown a POS area with no tobacco display, a second group saw a cigarette pack display without advertising, and a third group saw a pack display that included cigarette advertising. The children were then surveyed on their beliefs regarding a number of issues related to cigarette sales and smoking.

According to the DOH Consultation, this study found that cigarette advertising and bold displays in stores predisposed young teenagers to smoke.[11] Indeed, the researchers in Wakefield, et al. (2006) claim that "[b]y creating a sense of familiarity with tobacco, cigarette advertising and bold packaging displays in stores where children often visit may help to pre-dispose them to smoking" (p. 338) and that "retail tobacco advertising as well as cigarette pack displays may have adverse influences on youth, suggesting that tighter tobacco marketing restrictions are needed." (p.338).

A fundamental problem with this study is its failure to adequately support the general policy conclusions to restrict POS display. Upon closer examination, the results of the study are significantly more mixed than the study's overarching conclusion would imply. In fact, the authors admit that "[o]verall, we found no consistent effects of cigarette advertising or display on peer approval for smoking, the likelihood of positive attributes being ascribed to smokers, or overall harm from smoking." (p. 345). The only positive correlations found with exposure to POS display involved the perceived ease of purchasing cigarettes. Assuming age restrictions on the sale of cigarettes to youth are enforced, this factor is essentially irrelevant to the POS display debate. In addition, even on this point, the authors overstate their findings. For example, when surveying students' beliefs about how difficult it could be to obtain cigarettes in the store presented in the picture, one of the metrics (number of stores in the neighborhood that would sell cigarettes to students your age) showed no differences across the groups (those shown a POS area with no tobacco display, those shown a cigarette pack display without advertising and those shown a cigarette pack display with advertising). Additionally, two of the other metrics (likelihood of being asked for proof of age and number of stores in neighborhood that would sell you cigarettes) only exhibited a statistically significant effect for the group exposed to cigarette advertising. For this set of outcomes, the results were not robust across the specific metrics.

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[10] See DOH Consultation, at p. 32, ¶¶3.30, 3.33-4.

[11] See DOH Consultation, at p. 32, ¶ 3.30.

The authors' results and conclusions regarding the effect of exposure on future intentions to smoke are also incomplete and unfounded. They claim that individuals exposed to advertising indicated they were more likely to smoke a cigarette during the following year than those who only saw the display. However, they also fail to note that both groups indicated a generally negative response with respect to whether they were likely to smoke and that the difference was not statistically significant. Further, they do not present the average response from the group that was not exposed to displays at all. In the last set of metrics, which queried brand popularity, there is virtually no statistically significant difference across groups for the metrics. Despite these very mixed results in the experimental setting, the authors draw strong policy conclusions that are simply not supported by their own data.[12]

The DOH Consultation also relies upon a study by Wakefield, et al. (2007) which used surveys to query smokers and those who quit recently in Australia about their opinions of POS displays. Specifically the study looks at whether exposure to POS display promotes impulse purchases of cigarettes and the urge to smoke among those trying to quit smoking. According to the DOH Consultation, this study provides "evidence that point of sale displays can stimulate impulse purchases among those not intending to buy cigarettes and, importantly, among adult smokers who are trying to quit."[13]

Survey research of the type used in this study is of limited value because there is no corroboration for the self-reported data.[14] For example, while the study reports that a significant number of respondents indicated that such displays induce them to purchase cigarettes on impulse with an even higher fraction reporting the same among those individuals trying to quit smoking over the past year, there is no non self reported data corroborating this result. The authors also report that about one third of respondents said they would find it easier to quit if POS displays were removed from stores. Again, there is no corroborating evidence for this point beyond the self reports.

Here, the self reported nature of these data are especially material given that respondents were led in their responses by the survey itself, with the researchers specifically asking respondents to consider whether the removal of displays would have these effects. First, it is not at all clear that survey respondents can accurately assess and report on the effects of advertising and tobacco displays on their quitting success. There is no evidence that these respondents accurately report how frequently they are exposed to such advertising. Second, even if survey respondents accurately assess their exposure to displays and advertising, their own judgments about causality may be limited as they may incorrectly attribute their own failure to quit to advertisements when led to do so by researchers. In the context of this study, this concern is heightened by the fact that the

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12 Similarly strong claims on the basis of mixed evidence are drawn in the analogous experiments run in Henriksen, Flora, Feighery, and Fortmann (2002).

13 See DOH Consultation, at p. 32, ¶3.33.

14 Similarly, a study by Hoek, Pirikahu, Edwards and Thomason (2008) using survey research is of limited value as well.

interviewers specifically ask about the effect these displays had on the purchase decision and on urges, practically inviting the individuals to lay blame not on themselves. Counterfactual assessments are very difficult, but that is, in fact, what the relevant question is. Specifically, researchers are seeking an answer to the question of whether respondents would have been more successful in quitting had they not been exposed to advertising or cigarette displays.

Despite the shortcomings of the research design used in Wakefield, et al. (2007), it is interesting to note that results did not differ across socio-economic category of the respondent. Thus, to the extent this survey research has any value, it suggests that the effects of POS displays do not differ systematically by class or income level. Further, to the extent there are important shortcomings in the research design, these flaws are not related to socio-economic status.

In summary, neither of these studies provides reliable or direct scientific evidence that POS display triggers smoking behavior in youth and/or stimulates purchases among adult smokers, including those trying to quit smoking.

E. Data From Countries Implementing Advertising Bans Do Not Support The POS Display Ban Proposal

The data from countries implementing advertising bans do not support the POS display ban proposal. While superficially it may seem sensible to examine the experience of countries that enact (or abolish) advertising restrictions, such restrictions themselves are not randomly assigned. There is great reason to be skeptical of studies and data regarding the effect of advertising restrictions on smoking outcomes in countries that have adopted advertising restrictions because, here too, there is the potential for a self selection bias, as jurisdictions do not randomly adopt these restrictions. Instead, they are likely to adopt these restrictions on the basis of policymakers' beliefs about the trajectory of smoking among the jurisdiction's residents and other background trends. As described above, failure to account for this self selection is likely to lead to substantial bias in estimating the causal effects of the restrictions. As in the youth smoking context, however, little effort is spent in the literature to handle this problem in a sophisticated way.

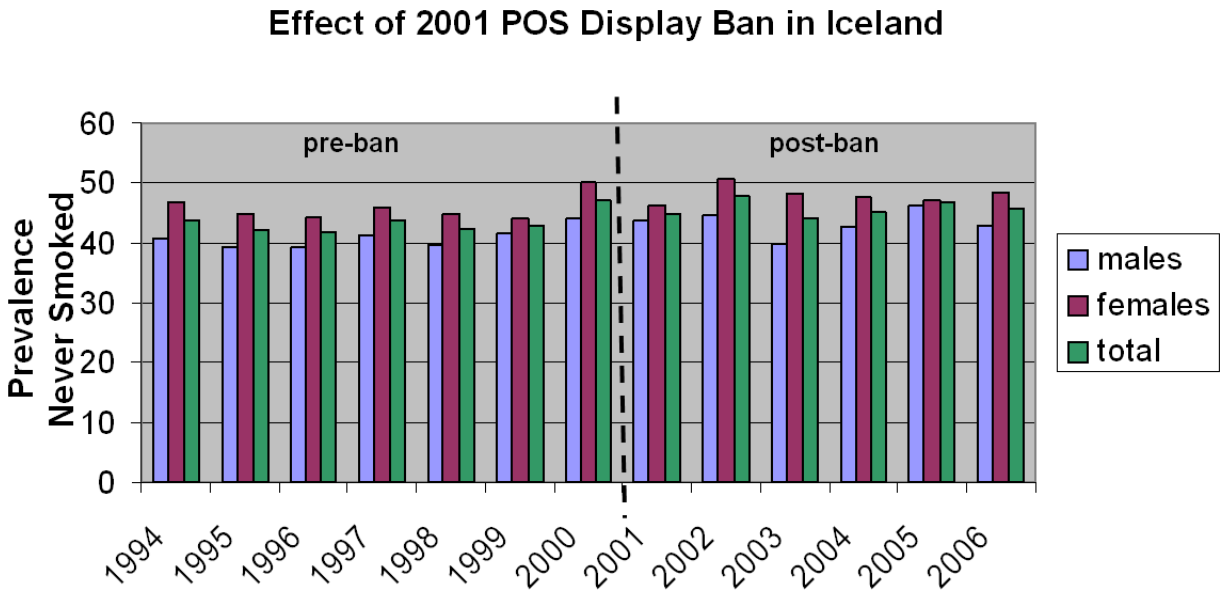
The DOH Consultation relies on data from Iceland as support for the alleged potential benefits of a POS display ban.[15] Iceland introduced a display ban in 2001. Although the European School Survey Project on Alcohol and Other Drugs (ESPAD) cites Iceland's 2001 tobacco display ban as leading to a decline in youth smoking, closer examination suggests that Iceland was already in the midst of a pre-existing declining trend in youth smoking that perhaps would have continued regardless of whether Iceland acted on display bans or not. Specifically, between 1995 and 1999, the fraction of 16-17 year olds who had smoked during the previous 30 days dropped from 32 percent to 28 percent. The subsequent decline to 20 percent by 2003 may simply have been the

[15] See DOH Consultation, at pp. 31-32, ¶3.29.

continuation of a pre-existing trend.[16] To infer causality on the basis of a decline after the law's passage, especially after recognizing that rates were declining before the ban, is scientifically unsupportable. The DOH Consultation admits that the evidence from Iceland is "not definitive."[17]

Further examination of the data from Iceland following a 2001 tobacco retail display ban indicates that it is inconclusive regarding the efficacy of a tobacco retail display ban on smoking consumption.[18] Figures compiled from Statistics Iceland indicate that the proportion of the population who reportedly "have never smoked" fluctuated following the retail tobacco display ban. A year after the ban was implemented, there was an increase in the percentage of the population that reported "never" smoking. In 2003 and 2004 however, there was a decrease in the percentage of males reporting to have "never" smoked than a year before the ban was implemented. Prior to the ban in 2000, the percentage of male never smokers was 43.9% and then it dropped to 39.8% in 2003 and 42.6% in 2004. (Table 1) In addition, the same trend can be seen for the percentage of females who reported to have "never" smoked in 2003 and 2004. In short, the percentage of females who reported as having "never" smoked decreased from 50.2% in 2000 to 48.1% in 2003 and 47.6% in 2004 and remained lower than the percentage of those who reported themselves as having "never" smoked in the year before the introduction of the ban (Table 1).

Table 1



16 A simple extrapolation of a linear trend would have implied a decline to 24 percent; however, there is no strong reason to assume the pre-existing trend was linear and it may easily have accounted for the full reduction to 20 percent even in the absence of the display ban.

17 See DOH Consultation, at p. 31, ¶ 3.29.

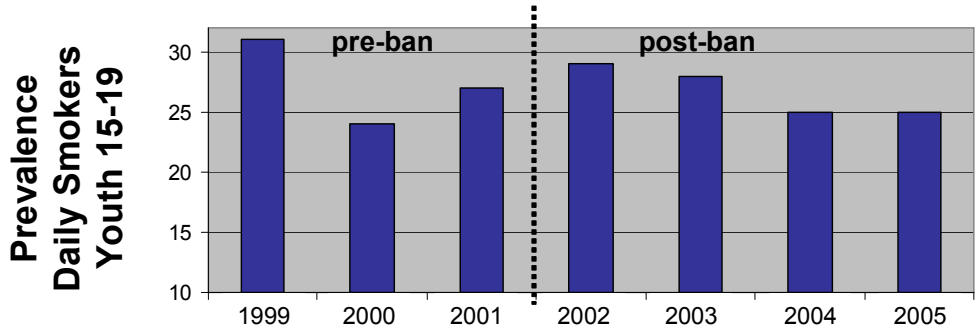
18 Statistics Iceland, Smoking Habits of 15-89 year olds in Iceland: Statistics Iceland website: http://www.statice.is/Statistics/Health,-social-affairs-and-justi/Lifestyle-and-health (go to: Smoking habits by sex and age 1994-2007, last visited 31 August 2008).

Among the population aged 15-19 in Iceland, the percentage reporting that they "never" smoked remained essentially the same during the year following the ban. However, the percentage of 15-19 year olds reporting "never" smoking in 2003 was lower than the year preceding the ban. Six years after the ban, the total percentage of the population aged 15-19 years who said they "never" smoked is similar to what it was in 2000, the year before the ban was introduced (http://www.statice.is/temp_en/Dialog/Saveshow.asp, accessed June 25, 2008). No clear evidence has emerged that the display ban has produced a lasting reduction in smoking levels.

In addition, the Canadian province of Saskatchewan was the first Canadian province to prohibit retail displays and yet, the percentage of smokers actually increased from 21% in 2002 to 24% in 2003, during the 19 months when the ban was first introduced. (CTUMS Smoking Prevalence 1999-2007). From 2001 to 2002, youth smoking rates in Canada declined from 22.5% to 22% while in Saskatchewan, youth smoking prevalence increased from 27% to 29%. (Table 2) In 2005, youth smoking rates were higher in Saskatchewan, 25% compared with the Canadian average which was 18%. (Table 3) In fact, the DOH Consultation acknowledges that Health Canada, in its own consultation document, observed that "'it is possible that restrictions on tobacco displays at retail will have an impact on this trend, but this remains very speculative at this time.'"[19]

Table 2

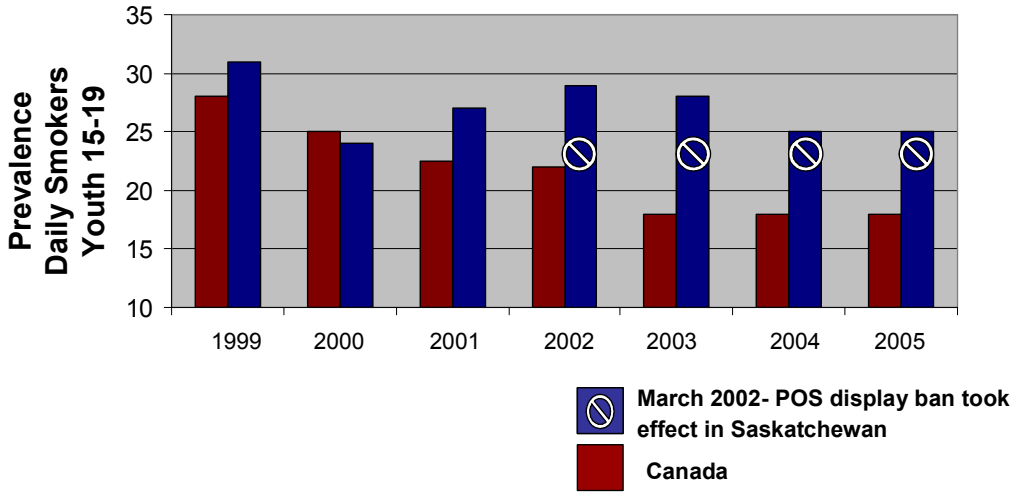
Effect of 2002 POS Display Ban in Saskatchewan, Canada



[19] See DOH Consultation, at p. 34, ¶3.45.

Table 3

Comparison of Saskatchewan Youth Smoking Prevalence with Average Canada Youth Smoking Prevalence



Another illustrative example is the situation in Australia where stringent display restrictions were implemented in certain states, including Tasmania in 2003 (Buddelmeyer and Wilkins, 2005). The data reveal that the incidence of smoking in Tasmania (where the more stringent display restrictions applied) increased (Table 4), whereas the incidence of smoking in Western Australia (without restriction on display) fell (Table 5, data from Roy Morgan Smoking Monitor: January 2002-February 2008) . In 2007, smoking prevalence in Tasmania was 31.30% compared with the national average of 25%.

Table 4

Effect of 2003 POS Display Ban in Tasmania, Australia

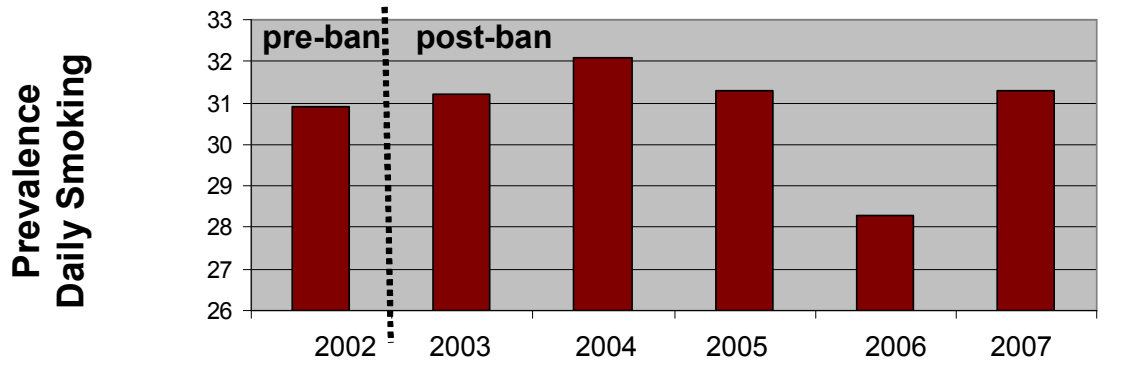
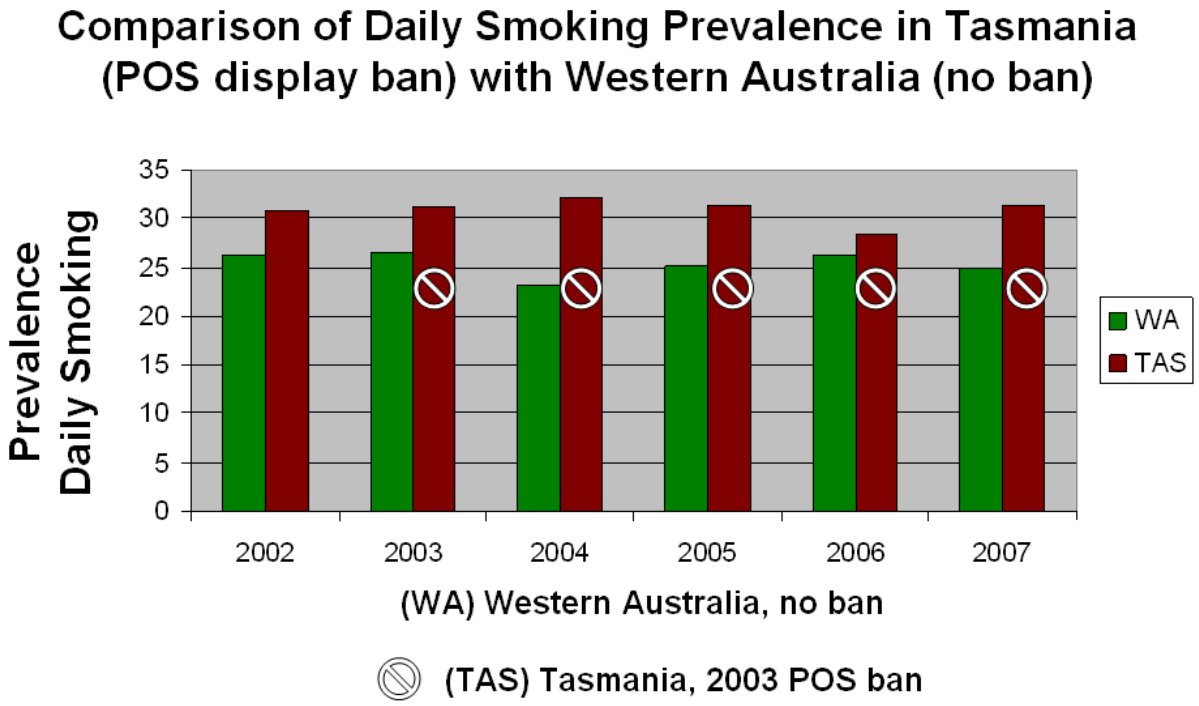


Table 5



IV. UNINTENDED CONSEQUENCES OF ADVERTISING RESTRICTIONS

Advertising restrictions may have a number of effects that are counter-productive with respect to public health goals.

A. Further Restrictions or a Ban on Point of Sale Displays Will Lead to Lower Prices Which Will Lead to Increased Smoking

Most important, if advertising is geared toward accumulating market share, the primary effect of advertising for the industry as a whole is to drive up prices. That is, advertising is costly and, in the long run, those costs must be incorporated into prices, otherwise capital would flow out of the cigarette industry as investors found higher rates of return elsewhere. Thus, a restriction on advertising must, in long run equilibrium, lead to declining prices.[20] It is an unassailable proposition that there is a negative causal relationship between price and smoking rates (see Chaloupka and Warner, 2000). Indeed, the DOH Consultation recognizes that "price mechanism is generally accepted to be the most effective population-level policy lever available to government to combat smoking."[21] This means that a first order effect of comprehensive advertising restrictions adopted by sufficiently many (or sufficiently large) jurisdictions will likely be a price decline in the long run, leading to increased smoking rates.

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[20] For a recent empirical examination of this proposition using a sophisticated design, see Milyo and Waldfogel (1999).

[21] See DOH Consultation, at p. 21, ¶2.27.

One counter to this claim is that such restrictions could be coupled with an increase in the tobacco tax rate to offset the price decline. However, such a strategy is self limiting. Once taxes become a disproportionately high percentage of the retail price, it is likely that black markets or smuggled cigarettes will become increasingly prevalent (see Gruber, et al. 2003 for very strong evidence of this effect in response to large tobacco tax increases in Canada in the early 1990s). The higher the percentage of tax is in the overall cost of cigarettes, the greater the incentive will be and likelihood for a black market. This is so even if the tax increase is aimed at equalizing price to pre-POS display ban levels because there necessarily would be a time lag between the drop in price and the increase in tax levels. Furthermore, not only does such an effect undercut the tax "solution" to declining prices in the face of advertising restrictions, it also has the potential to decrease tax revenue and regulatory control of tobacco markets in general. Perhaps most troubling, sellers in black markets have little incentive to uphold minimum age laws with respect to tobacco sales. Thus, if illegal markets become sufficiently robust due to these tax increases connected with adverting restrictions, adolescent smoking has the potential to become even more prevalent.

In addition, such a development could enhance any "forbidden fruit" effect that exists among adolescents with respect to tobacco. While proponents of advertising restrictions often speculate that restrictions might help de-normalize tobacco, especially for adolescents, the opposite effect is possible as well as adolescents gravitate toward a product that is off limits to them. POS display bans could generate the opposite effect intended by those who wish to impose a ban especially among youth and young adults who may rebel against such restrictions.

Evidence of a possible boomerang effect has emerged from Australia in a study by Buddelmeyer and Wilkins (2005) of the Melbourne Institute of Applied Economic and Social Research. At the time of this study, smoking and advertising bans were in place to varying effects across different states in Australia. Several states implemented additional regulations that included POS advertising of tobacco products.

While the overall effect of tougher smoking legislation encouraged people to quit, the authors report that the statistical significance of this effect was marginal. Additionally, the authors found that, rather than discouraging smoking, the more stringent advertising bans appeared to have the opposite effect, particularly among 18 to 24 year olds. They found that "18 to 24 year old smokers are less likely to quit in states that introduced tougher smoking regulations than in states that did not . . ." (p. 19) Indeed, they reported that they found "a significant 'rebellion' effect among 18 to 24 year old smokers, with the introduction of smoking bans found to increase the likelihood that they continue to smoke." (p. 2).

B. Further Point of Sale Display Restrictions May Reduce Incentive to Innovate Products

Another non-obvious possibility that is associated with advertising restrictions involves tobacco manufacturers' incentives to innovate with respect to their products. In

a market where sales are largely stagnant, producers still have an incentive to develop better products in an attempt to increase their market share. Such innovation leads to increased product differentiation. However, if tobacco manufacturers are restricted from informing consumers about these innovations and product differences, the incentive to innovate will disappear. While there is no direct evidence of this effect in the tobacco industry, there is ample evidence of it in other concentrated markets, such as the market for pharmaceuticals (see, for example, Kwong and Norton, 2007) and some limited evidence for it in other manufacturing sectors (see, for example, Manez-Castillejo, 2005; and Grossmann, 2008). In Kwong and Norton, the authors uniformly found that there was a positive relationship between advertising and new product entry, and the effects were statistically significant. This literature suggests that advertising restrictions could limit innovations in product markets as manufacturers are unable to inform consumers of these innovations and product differentiation more generally.

C. Potential for Increased Smuggling and Illicit Trade

In addition to the direct loss of welfare to smokers arising from diminished innovation, homogeneity of tobacco products is likely to make smuggled and black market cigarettes better substitutes for the products sold on the open market. According to the Consultation, "a proportion of the health gain achieved by reducing smoking rates through high taxes on tobacco in the UK is lost through smuggling. Tobacco smugglers also undermine law-abiding businesses and have been known to use the proceeds to fund other forms of organised crime."[22] Tobacco smoking, as observed by the DOH Consultation, "harms health in our communities by creating a cheap and unregulated source of tobacco, undermining the Government's targets for reducing smoking prevalence, especially among young people and those in routine and manual groups."[23]

Since supply chains in black markets are necessarily less reliable than those in the legitimate markets, consumers have an incentive to avoid the black markets, all other things equal, if they have strong preferences for the brands they smoke. While they are generally guaranteed to find their brand being available in a legitimate store, black market sellers may only have a limited selection. This conjecture is borne out by Canadian data which finds that nearly 70 percent of the cigarettes sold in illicit markets are unbranded, according to GfK Research Dynamics "Tobacco Product Illicit Trade Phenomena: National Study for Imperial Tobacco Canada." (GfK Research Dynamics, 2006). However, if product differentiation and innovation declines, smokers may become indifferent to the brand they consume, making them more likely on the margin to be willing to patronize illegitimate sellers. As suggested above, this will hurt a jurisdiction's ability to collect tax revenue and regulate markets more generally.

In sum, POS display restrictions may have the unintended effect of causing an increase in tobacco smuggling in a market which is already "characterized by high levels of illicit tobacco use."[24] As acknowledged in the DOH Consultation, an increase in

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22 See DOH Consultation, at p. 6.

23 See DOH Consultation, at 21, ¶2.26.

24 See DOH Consultation, at p. 21, ¶2.29.

tobacco smuggling will undermine the Consultation's goals to reduce smoking prevalence, especially among the poorest groups because "illicit tobacco is thought to have a major impact on social inequalities" with the poorest groups having the most "incentive to source tobacco products from the illicit market."[25]

D. Potential Loss of Tax Revenue as Based on the Analysis in the Impact Assessment

Within the DOH Consultation, there is a "Consultation-stage impact assessment for controlling the display of tobacco in retail environments" ("Impact Assessment") which purports to represent a reasonable view of the likely costs, benefits and impact of the leading options in the DOH Consultation regarding the control of POS display. It posits two policy options which are to 1) retain the status quo and 2) introduce a complete prohibition on the display of tobacco products with no other advertising.[26] The Impact Assessment includes a benefits analysis that is intended to cover "two types of health outcomes that might arise from the policy, and places a monetary value on each."[27]

The Impact Assessment relies, in large part, on several of the flawed studies discussed above. The input numbers for the benefit portion of the Impact Assessment come from the Henriksen, et al. (2004) study discussed above. Given that Henriksen, et al. (2004) does not relate to or address the effect of POS display or bans of same and given the concerns raised in the previous discussion, it is highly problematic to estimate the savings of a POS display ban on the basis of the Henriksen et al. findings. Further, as conceded in the Impact Assessment itself, there is a very large disconnect between the Henriksen, et al. sample and the population that would be affected by a UK ban.[28] Specifically, nearly half of the Henriksen, et al. sample was Hispanic. The Impact Assessment acknowledges that there are other critical differences between the Henriksen et al. sample and the UK such as widely differing regulatory environments and the fact that the laws on underage sale of tobacco may be different. Indeed, the Impact Assessment states that "there are some problems [applying the Henriksen data to the UK] - for example, the tobacco advertising that the California children were exposed to appears to be less restricted than the current UK situation . . . laws on underage sale may differ, and the policy consideration includes the prohibition of display (which can be a form of advertising)."[29]

Perhaps the largest unsupported premise in the Impact Assessment is the crucial assumption that any reduction implied by Henriksen, et al. would be permanent, since the Impact Assessment extrapolates from this reduction ultimate life years saved by a permanent reduction in smoking. The Henriksen, et al. study, even ignoring the problems outlined above, does not identify any such permanent reduction. Instead, it

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25 See DOH Consultation, at p. 22, ¶2.33.
26 See DOH Consultation, at p. 71, ¶10.
27 See DOH Consultation, at p. 73, ¶20.
28 See DOH Consultation, at p. 77, ¶37.
29 See DOH Consultation, at p. 77, ¶37.

identifies a reduction in the likelihood of having smoked at all by the eighth grade. An extrapolation on this basis is simply non-sensical.

While the Impact Assessment from the UK Consultation asserts that the benefits from the proposed advertising restriction greatly exceed the costs associated with the proposal, this claim is dubious at best. As suggested above, the starting point for the analysis in the assessment is highly questionable as it is based on an unreliable extrapolation from the results found in Henriksen et al. (2004) which itself draws unsupported inferences about the causal effects of advertising on smoking uptake. The Consultation does not provide a citation for its choice of £50,000 per life year saved but it is reasonable to assume this figure represents the valuation of the average individual. However, even if the assumptions of the Impact Assessment are taken at face value in terms of how many fewer individuals will start smoking if point of sale advertising is restricted, the valuation of the economic benefits resulting from this is highly sensitive to the value of life years used in the assessment. There is substantial evidence from labor economics suggesting that smokers themselves place a significantly lower value on additional life years as compared to the average non-smoker. For example, Viscusi and Hersch (2001) provide strong labor market evidence that smokers value an additional life year at less than one half the rate of non smokers, and Ippolito and Ippolito's (1984) estimates suggest that smokers may value an additional life year at around one ninth of what non smokers do. As suggested by Judge Richard Posner (2007, p. 197), this revealed preference approach provides the most reasonable way to determine a reliable valuation of life years when dealing with risks such as smoking. At a minimum, these results suggest that the DOH's benefit calculation of the proposed regulation is biased upward, perhaps by many multiples.

Further, as noted above, the assessment fails to consider the significant lost tax revenue associated with the assumed reduction of smoking among the costs of the proposed restrictions. However, it is worth noting that the Impact Assessment for limiting young people's access to tobacco products from vending machines considers the loss of tax revenues.[30]

As detailed above, there is no reason to place any confidence in the estimates used in the Impact Assessment, but if these estimates are used to construct a lost tax revenue measure, the costs of the proposal grow considerably. The Impact Assessment suggests that the proposed advertising restriction will lower the number of smokers by 19,500 in each annual cohort. Given that the average adult smoker smokes about 15 cigarettes per day and the tax levy in the UK is £4.33 per 20 cigarettes, this amounts to an annual loss of over £23,000,000 per cohort. Using a reasonable discount rate (3 percent) over the 10 year period considered within the impact assessment, the present value of the loss per cohort approaches £200 million. If one uses the ad hoc numbers used in the Impact Assessment, where a range of 579-2,786 fewer smokers per annual cohort is used, the tax revenue loss over the 10 year period is still on the order of £6 - £28 million per cohort. Given the unreliable nature of the estimates of the effects of the advertising restrictions on smoking rates, these tax estimates are not meant to provide a precise

[30] See DOH Consultation, at p. 96, ¶25.

estimate of the fiscal impact of the restriction. However, inclusion of these costs does draw into question the conclusion of the Impact Assessment that the purported benefits of a restriction outweigh the costs.

In addition, as indicated throughout this comment, it is doubtful that the advertising restriction will lead to a reduction in smoking. However, if the impact assessment's assumptions are correct regarding the effect on smoking rates, it is peculiar that the assessment fails to include lost revenues to the retailers. These lost revenues involve both the direct reduction in tobacco sales as well as any indirect losses arising from the fact that smokers are likely to purchase other goods. If smokers are as impulsive as assumed throughout the DOH report, many of these purchases will not occur at all if the population of smokers is reduced to the extent posited by the DOH. Estimates of these revenue losses to the retailers, as well as the tax losses arising from reduced tobacco and ancillary sales, are likely to be substantial. Ignoring these losses in the calculation of the cost of the proposal significantly overstates the net expected benefits from the advertising restriction.

V. CONCLUSION

While there is a large literature examining the relationship between advertising and smoking rates, results from these studies are irrelevant and unreliable. As suggested in Chaloupka and Warner (2000), the modern sophisticated econometric techniques developed to isolate causality in observational studies have been largely absent from the literature examining the effect of exposure to advertising on youth smoking. This point is made quite clearly in Heckman, et al. (2008) who view the entire literature as unreliable given its failure to address and control for the selection biases that exist when individuals both choose their exposure and receptivity to tobacco advertising as well as whether or not to smoke.

In summary, the review of the empirical literature on the relationship of advertising and advertising restrictions on smoking outcomes and success rates among those attempting to quit smoking indicates that results are mixed at best, even taken at face value. There is no robust finding regarding even the association of advertising measures with smoking metrics. Once concerns about self selection are considered, it is clear that there is no reliable evidence isolating the causal effects of advertising and advertising restrictions on smoking among adolescents, adult smokers, and those attempting to quit smoking. Until the selection bias explanation is ruled out, drawing policy inferences from the public health literature in this area is groundless and disproportionate to the available empirical evidence.

Further, increased restrictions on POS display have the potential to generate a host of unintended consequences that would be counter-productive to public health goals. Primarily, comprehensive restrictions will likely lead to lower cigarette prices. The literature on the relationship between prices and smoking rates is robust and reliable. As prices decline, smoking rates increase. If taxes are used to mitigate these price decreases, more cigarette sales will be pushed into the unregulated and untaxed black market where

minimum age requirements, which have generally been shown to reduce adolescent smoking, are not enforced. A POS display ban may also result in a "boomerang" effect among youth. It will also, if the Impact Assessment is to be taken at face value, result in a significant reduction in tax revenue that appears to be unaccounted for in the Impact Assessment. Additionally, advertising restrictions will likely limit product differentiation and innovation which is also conducive to black market operations.

These unintended consequences of POS display restrictions and other limitations on tobacco advertising are potentially large. If the evidence regarding the public health benefits of such restrictions were strong and reliable, it may be socially optimal to absorb the costs of these consequences. However, given the shaky empirical foundations of the link between advertising and smoking rates, the risks associated with these restrictions would seem to be too great to bear.

With the large potential for these counter-productive effects of increasing advertising restrictions, including further limiting POS displays, policymakers would be well served to carefully consider the empirical evidence on the relationship between advertising and smoking rates. This evidence is generally very weak and unreliable and does not support a decision to impose restrictions on POS display.

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Appendix A

The following contains a detailed analysis of the studies examining the effects of broad forms of advertising on smoking outcomes among adolescents and adults relied upon in the DOH Consultation.

1. The Effects of Broad Forms of Advertising on Smoking Outcomes Among Adolescents

The DOH Consultation relies heavily on a study by Henriksen, et al. (2004) for the proposition that tobacco advertising and promotion promotes youth smoking, stating that Henriksen, et al. found that "exposure to retail tobacco marketing resulted in a 50% increase in the odds of ever smoking."[31] However, Henriksen, et al. acknowledge that "[t]his cross-sectional study could not confirm a causal role for retail tobacco marketing in the uptake of smoking . . ." (p. 2082). In fact, it is widely recognized that cross-sectional studies are not methodologically equipped to test causal relations over time between variables such as tobacco advertising exposure and youth smoking behavior (Lovato, et al. 2004).

In the Henriksen, et al. study, the researchers attempt to examine the statistical association between several crude measures of exposure to tobacco advertising, including in store advertising, and the likelihood that students in the 6th through 8th grades of three schools in California have ever smoked a cigarette. The measures of advertising exposure include whether the student 1) owns a cigarette promotional item, 2) sees cigarette ads in magazines (never or rarely vs. sometimes or often), 3) sees smoking on television or in the movies (never or rarely vs. sometimes or often), and 4) how often the student is exposed to tobacco marketing by entering a liquor store, convenience store, or small grocery store (less than once a week or at least once a week). Note that this study addresses broad forms of retail advertising as opposed to examining the effects of POS display alone. The outcome of interest is whether the student has ever smoked, even as little as taking a single puff. In a stepwise logistic regression, the authors examined the relationship between advertising exposure and their smoking metric, while controlling for self reported measures of 1) school work grades (above median vs. below median), 2) whether a parent or someone in the household smokes, 3) whether at least one friend smokes, 4) the degree of maternal supervision (above mean vs. below mean), and 5) results from a 3 item measure meant to capture risk taking propensity.

The authors report that their analysis finds that individuals who visit one of the retail establishments at least once a week are 50 percent more likely to have smoked at least a single puff, after accounting for all of the controls discussed above as well as grade, sex, ethnicity (Latino/Hispanic vs. other). Individuals owning a promotional item were 170 percent more likely to have smoked at least a puff, and individuals seeing cigarette advertisements in magazines sometimes or often were 40 percent more likely to have smoked at least a puff. They do not report a result for the television/movie indicator. Among the controls, the risk taking measure (above average risk takers were

[31] See DOH Consultation, at 77, ¶36 (Appendix 3).

240 percent more likely to have smoked) and the "at least one friend smokes" measure (those with one or more smoking friends were 210 percent more likely to have smoked) dwarf the advertising effects. The low maternal supervision, poor grades, and one smoker in the household control effects were all comparable to or larger than the retail exposure and magazine exposure effects, but were smaller than the promotional item association.

This study falls far below accepted standards for causal inference on a number of counts. One of the greatest problems in this study is the choice to use a stepwise logistic regression to analyze the data. Stepwise regression procedures are data-mining tools that evaluate models repetitively to maximize statistical significance of the chosen control variables. Rather than using theory or previous research to guide the analysis and then letting the data "speak for itself," stepwise procedures keep running various regressions, excluding sets of variables and then putting them back in, until some threshold for significance is met. Most econometricians would suggest that these kinds of procedures are ripe for manipulation and at least suggest a very opportunistic approach to data analysis. The failure to estimate an effect of television or movie exposure is a result of using the stepwise procedure (which the authors acknowledge without further comment). One reason that the algorithm may have excluded this measure is because it significantly lowered the size/statistical significance of the other exposure effects.

In addition, the measures of advertising exposure in Henriksen, et al. are not randomly assigned and they may well be measuring the students' underlying preference for smoking, leading to an inference of self selection as opposed to a causal inference. The authors claim that their control variables mitigate this concern. However, each of the controls is a very rough proxy for the kinds of attributes one would like to control for (e.g., risk taking propensity is likely more complex than can be discerned in a 3 item survey; self reported relative grades are a weak control for IQ and academic achievement) and many important characteristics are left un-controlled (e.g., measures of self worth). Once again, the cognitive controls are weak, asking simply if the individual's school performance is above or below the median, and the non-cognitive controls (e.g., measures of self worth) are non-existent, despite Heckman, et al.'s finding of their importance in youth smoking decisions.

Simply put, exposure to tobacco advertising is itself influenced by many factors that have independent effects on the smoking decision. In the Henriksen et al. study, it may be the case that tobacco advertisements are relatively more prominent in magazines and movies[32] that tend to be seen by youths with low measures of self worth. A similar story could be offered for their measure of whether the individual is exposed to tobacco advertising in a retail establishment. For example, although the study has (somewhat coarse) controls for whether the individual's parents or friends smoke, there is no more general control for smoking in the community at large. It may be the case that retail establishments in communities with a relatively high number of smokers are more likely to advertise tobacco. If this general exposure to smokers in the community

[32] One of their exposure metrics is a self reported measure of how frequently the individual sees cigarette advertisements in a magazine or sees smoking in movies or television programs.

increases the likelihood of a young person to try smoking, the estimate of the effect of advertising exposure on smoking rates will be biased.[33]

The failure of the authors to perform certain expected analyses with their data also suggests the potential that their results are not very robust to other models. For example, they treat exposure to retail outlets that are likely to have tobacco advertising as homogenous, regardless of whether the exposure comes from liquor stores, convenience stores, or grocery stores. However, information that a middle school student frequents a liquor store on a weekly basis is likely probative of characteristics beyond the mere effect of advertising exposure. Separating out these effects is important. If it were discovered that the results were driven by those students whose exposure came entirely through liquor stores, the inference about the effect of advertising exposure in other retail outlets would be highly suspect.

The authors' choice of an outcome variable -- that is, ever smoking is defined as ever smoking a cigarette, even just a puff -- is also questionable. They present no evidence that simply "taking a puff" is a useful metric for public health policy. Further, there are a number of simple statistical techniques available to analyze additional degrees of smoking (e.g., an ordered probit model would allow them to simultaneously analyze smoking rates of never vs. a single puff vs. casual smoker vs. regular smoker). At a minimum, the authors' failure to present (or at least mention) analysis using alternate smoking metrics is questionable.

Another study cited in the DOH Consultation (Pierce, et al. 1998) in support of the advertising and youth smoking link,[34] suffers from many of the problems discussed above. The researchers initially coded the adolescents into four categories, 1) smokers, 2) experimenters, 3) non-smokers who are susceptible to smoking and 4) non-smokers who are not susceptible to smoking and then, three years later, surveyed the non-susceptible non-smokers to see if they had become susceptible to smoking or had started experimenting with tobacco. They also measured whether the individual owned a cigarette promotional item or was willing to own one, had a favorite tobacco advertisement but was not willing to own a cigarette promotional item, and whether the adolescent could identify a cigarette brand as being most highly advertised. The authors claim that their longitudinal design, which collected information about the individuals' receptivity to tobacco promotional advertising in 1993 and then measured whether the individuals were susceptible to smoking by 1996, provides causal evidence of the positive relationship between tobacco promotional activities and the onset of smoking.

A critical limitation in Pierce, et al. (1998) -- apart from the fact that is does not address POS display -- is the failure to control for the effects of a multitude of non-causal factors that could be driving the purported relationship between advertising receptivity/exposure and smoking. For example, the controls used by Pierce, et al. (1998) fail to account for the Heckman et al. measures shown to be important predictors of youth

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[33] These same critiques apply to the subsequent work presented in Feighery et al. (2006) which is similar in methods and design.

[34] See DOH Consultation, at p. 24, ¶3.5.

smoking: cognitive and non-cognitive factors. Although the study controls include a self-reported measure of school performance, allowing three choices, of whether the individual performed much better, better, or equivalent/below average in school, this is a weak control for cognitive achievement, especially since each individual will be comparing herself to her immediate peer group as opposed to some absolute level of performance in the state. Further, there is no measure for non-cognitive measures. To the extent that the missing cognitive and non-cognitive measures are correlated with the smoking decision advertising exposure measures, Pierce, et al.'s findings with respect to the causal effect of advertising on smoking susceptibility will be biased.

The authors claim that the longitudinal nature of the study allows them to make causal inferences about the effect of advertising receptivity/exposure on smoking among adolescents. However, this is problematic in at least two ways: 1) first, it assumes that the initial coding of non-susceptible adolescents was correct and meaningful; to the extent it is not either because the respondents lied or did not make any effort to answer the original survey questions in a thoughtful way or some other reason, the longitudinal nature of these data do not "control" for underlying preferences regarding smoking at all, leaving the study effectively equivalent to a cross sectional correlation study; 2) even if the original coding was meaningful, the exposure to the advertising is not randomly assigned. It could be the case simply that those non-susceptible individuals' underlying preferences toward smoking changed over the course of three years and then they simultaneously sought out advertising/promotional items while beginning to experiment with smoking, as the two goods/activities are complementary. In fact, the authors acknowledge that one third of the non-susceptible never smokers with minimal receptivity at baseline did progress suggesting that influences other than tobacco advertising and promotion cause smoking as well. This self-selection problem is not avoided by the fact that the researchers collected data in two different periods and it provides a non-causal channel by which the reported results could arise even if there is no effect of advertising on smoking decisions.

The DOH Consultation cites another study by Pierce et al. (1991) as evidence that "children and young people are more receptive to tobacco advertising than are adults."[35] Using telephone surveys of 24,296 adults and 5,040 teenagers in California, the authors examined the relationship between respondent's perception of which brands of cigarettes advertise the most and the market share across these two age categories. The authors purport to correlate the finding that teens are more perceptive with respect to advertising and market share across age and sex groups with advertising perception of those brands viewed as advertised the most. The authors conclude on this basis that advertising induces teens to smoke.

The researchers' conclusion regarding youth's perceptions and receptivity to tobacco advertising and their attempts to correlate this with youth smoking is unfounded. Nowhere in the study did the researchers examine the level of smoking among youth; instead they examined market share. Regardless of the quality of the research design,

[35] See DOH Consultation, at p. 31, ¶3.27.

there are no principles of statistics that can allow one to make inferences about youth smoking rates from market share data.

In addition, correlating market share across age groups with advertising perception is a faulty inference. If advertising is driven by an attempt to gain or maintain market share and advertising is funded by revenues, then it is not informative to find that market share matches advertising rates. The inference is faulty in a more elementary sense as well. To examine the question of how advertising affects the likelihood of an individual smoking, the dependent variable would have to be an indicator of whether an individual smokes or, if aggregate data are used, a measure of how many people smoke. The outcomes analyzed in this study, however, relate to market share, which captures neither whether an individual smokes nor how big the market is (i.e., how many people smoke).

In yet other work, Pierce, et al. (2002), also relied upon in the DOH Consultation,[36] appear not to consider the possibility of self-selection before concluding that a child's receptivity to tobacco promotional efforts undermines an authoritative parent's efforts to prevent the child from smoking. In the Consultation, the DOH states that Pierce, et al. (2002) allegedly found: "clear evidence that tobacco industry advertising and promotional activities can influence non-susceptible never-smokers to start the process of becoming addicted to cigarettes. Our data establish that the influence of tobacco promotional activities was present before adolescents showed any susceptibility to become smokers."[37]

Once again, receptivity to tobacco promotions is very likely an indication that the child has an underlying interest in smoking. Further, the authors never seem to seriously consider the possibility that one reason parents may choose to be authoritative is because they recognize these underlying preferences among their children. The researchers note that it was the adolescents with parents who try to keep them away from high risk behaviors that seem most likely to take up such behaviors. The authors fail to consider the possibility that, for adolescents who are discouraged by parents or others in positions of authority from smoking, tobacco products become a "forbidden fruit" and result in a boomerang effect. In this situation, rather than tobacco promotions and marketing representing a causal agent in smoking initiation, responses to it may represent a concurrent effect (along with smoking itself) of authoritative parenting.

The DOH Consultation cites a study by Klitzner et al. (1991) to support the claim that young people are more sensitive to the promotion and display of tobacco products at POS.[38] However, the DOH Consultation admits that the Klitzner et al. study did not address POS display.[39]

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[36] See DOH Consultation, at p. 34, ¶3.40.
[37] See DOH Consultation, at p. 34, ¶3.40.
[38] See DOH Consultation, at p. 34, ¶3.41.
[39] See DOH Consultation, at p. 34, ¶3.41.

The Klitzner, et al. (1991) study does however, flag the self-selection problem in research linking advertising exposure and smoking outcome. It notes that exposure is not randomly assigned and is likely correlated with underlying preferences for smoking. Despite this recognition, however, and an attempt to use a well developed empirical strategy called "two least squares" to solve the selection problem, the analysis does not carry out the strategy correctly. To correctly identify a causal relationship, the analyst must identify at least one "instrument" which, in this case, would be predictive of exposure but would be otherwise unrelated to smoking outcomes. The authors do not have a variable, or set of variables, that they even assert (much less demonstrate) is related to advertising exposure but is independent of smoking preferences. A reliable two stage least squares study would provide theoretical evidence justifying the chosen instrument(s) and then would provide diagnostic criteria indicating that the instrument fulfilled the requirements described above. The Klitzner analysis does not do this. These shortcomings ensure that the Klitzner, et al. analysis does not isolate causal relationships between advertising and youth smoking.

The DOH Consultation also relies upon the Cochrane review (Lovato et al. 2004) stating that it found a "'positive, consistent and specific relationship' between exposure to tobacco advertising and later take-up of smoking among teenagers."[40] However, given the unreliable nature of the underlying studies, this conclusion is unfounded.

Among the nine longitudinal studies analyzed in the Cochrane review, Pierce, et al. (1998) was held out as being among the strongest evidence in the literature linking advertising and youth smoking as well as a study by Biener and Siegel (2000) which was represented as providing strong causal evidence of the positive relationship between advertising and youth smoking. In the Biener and Siegel (2000) study, the researchers fail to control for the fact that their measures of advertising receptivity (whether the individual owns a tobacco promotional item or whether the individual provides an answer for which cigarette brand's advertisements attracts her attention the most) are themselves functions of variables that are not controlled for separately in the analysis. While the researchers do include an education variable, it merely codes whether the individual has more than a high school education. They fail to include the cognitive and non-cognitive controls deemed important by Heckman, et al. (2006). In addition, although the researchers report that they have a measure of depression, which may partially proxy for the non cognitive characteristics Heckman, et al. determined as being important, they fail to use it in their analysis.[41] The problems with the Pierce, et al. (1998) study are discussed at length above.

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[40] See DOH Consultation, at p. 31, ¶3.27.

[41] The analysis appears to omit a number of other potentially important characteristics (for which the researchers claim to have data), such as age, sex, race, education, income, and depression, that they do not control for. The researchers imply that these other variables were dropped because they were not significant predictors of the smoking decision, however, they make no mention of whether their results with respect to the effect of advertising receptivity were sensitive to which controls were included.

The Cochrane review appears to place a high value on the longitudinal structure of the studies it discusses. Longitudinal studies can be a powerful way to net out some baseline (i.e., non-changing) unobservable elements that help determine a given outcome if conducted and interpreted properly. However, the longitudinal nature of the Cochrane studies is slightly misleading.

Both Pierce, et al. (1998) and Biener and Siegel (2000), for example, use their receptivity measures -- ownership of a tobacco promotional item as a proxy for cigarette advertising -- to identify the effect of advertising on smoking decisions and not as a way to control for an individual's pre-existing preference for smoking and its ancillary products. If individuals with an unobservable pre-existing preference for tobacco are both more likely to seek out promotional items and to eventually smoke, an observed correlation between those two things would be attributable to that underlying preference. For the longitudinal structure to provide a way to mitigate this bias, it would be necessary to control for the possession of a promotional item in the early period as a way to proxy for the underlying preference for tobacco products and then examine what additional effect arises when the individual randomly (i.e., not through her own choice) comes into possession of a promotional item. Without this subsequent random assignment (or some way to approximate it through sophisticated statistical techniques), the longitudinal structure does not eliminate the self selection bias. As discussed by Heckman, et al. (2008), "Participants who already are more likely to smoke would be more likely to be classified as having high exposure to cigarette advertising, all else equal. Therefore, observing a correlation between the exposure measures and smoking uptake is not a reliable evidence of any causal effect." (p. 43). Simply put, a simple correlation between the possession of smoking related items and future smoking behavior does not indicate that smoking related items caused smoking.

2. The Effects of Broad Forms of Advertising on Smoking Outcomes Among Adults

A number of studies have examined the correlation between advertising expenditures and smoking rates. A review of this literature by Lancaster and Lancaster (2003), as well as Duffy (1996), finds little evidence of a systematic positive relationship between advertising and smoking in the aggregate. Based on a review of 35 studies representing eight countries, Lancaster concludes that "[o]n the whole, the evidence indicates that full or partial bans on advertising are likely to have little or no effect on aggregate cigarette or tobacco demand because the banned advertising itself apparently has little or no effect on aggregate demand." (p. 57). Surprisingly, neither of these reviews are discussed or cited in the DOH Consultation.

One notable exception to this failure to account for self selection problems in the studies is Nelson (2003) which formally models a country's adoption of advertising restrictions based on its fiscal attributes. The intuition and results from this model strongly imply that advertising restrictions do tend to be systematically enacted in relation to underlying smoking trends, suggesting that self selection is a problem. Specifically, Nelson finds that restrictions tend to be adopted when smoking rates are

declining anyway, limiting the extent to which correlations between such restrictions and smoking can be interpreted causally. Once Nelson accounts for this self selection, he finds that advertising restrictions do not significantly affect smoking rates in a dataset of 20 countries, including the United Kingdom, Iceland, Ireland, and the United States, over the period 1970-1995.

In a recent and comprehensive review of the literature on the effect of advertising restrictions and smoking rates, Goel and Nelson (2006) find the results to be mixed. According to Goel and Nelson's Table 1 (2006), of studies examining U.S. data, 4 studies found effects of restrictions that were not statistically significant, 3 studies found that restrictions significantly reduced smoking, and 1 actually found restrictions to significantly increase smoking. Focusing on international data, results were similarly mixed with 6 studies finding no statistically significant effect of restrictions and 5 studies finding a statistically significant negative effect of restrictions on smoking. Neither Nelson (2003) nor Goel and Nelson (2006) is cited in the DOH Consultation.

According to the DOH Consultation, a review of the literature examining the evidence on the effects of tobacco advertising, including the effect of advertising bans, by Smee, et al. (1992) "found that advertising bans enacted in four countries at that time (Norway, Finland, Canada and New Zealand) had been 'followed by a fall in smoking on a scale which cannot reasonably be attributed to other factors.'"[42] However, the Smee Review notes that studies examining the relationship between advertising levels and smoking rates generally find little to no effect of advertising on smoking metrics. The review further observes that this is likely a problem of multicollinearity and other technical problems with the regressions. Finally, results from the studies relied upon in this review are problematic since advertising expenditures are not randomly determined by tobacco manufacturers, leading to a bias in any estimates of a causal effect.

The Smee Review also looks at cross country comparisons that estimate the effects of various advertising restrictions in place in various countries and concedes that results from studies like these need to be viewed with caution because of the self selection problem discussed earlier. Namely, the fact that a given country has a restriction in place may be driven by underlying smoking preferences themselves, so estimates from these studies can not be interpreted causally.

Lastly, the review examines time series studies that look at smoking rates within a given jurisdiction before and after a restriction goes into place. Studies of this type generate a wide range of estimates in terms of direction of the effect (does smoking decrease or increase) and in terms of statistical significance. Taken together with the self selection problem discussed above (i.e., countries may enact restrictions when residents have already expressed a preference against smoking), this lack of robustness in the effects suggests these studies are not reliable in terms of inferring a causal effect of restrictions on smoking.

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[42] See DOH Consultation, at pp. 33-34, ¶3.39.

JONATHAN KLICK

University of Pennsylvania Law School, 3400 Chestnut Street, Philadelphia Pennsylvania 19104-6204
215.746.3455 (office) ● 215.573.2025 (fax) ● jklick@law.upenn.edu ● webpage: mailer.fsu.edu/~jklick

EDUCATION

J.D., *George Mason University School of Law*, Arlington Virginia, Awarded May 2003 (*cum laude*)
Robert A. Levy Fellow in Law and Liberty (Tuition Waiver and Stipend); Whitney Writing Prize

Ph.D., Economics, *George Mason University*, Fairfax Virginia, Defended November 2001
Fields: Public Choice, Industrial Organization and Public Policy

M.A., Economics, *University of Maryland at College Park*, Awarded May 1999
Fields: Public Finance, Political Economy of Growth & Income Distribution, Microeconometrics

B.S., Economics, *Villanova University*, Villanova Pennsylvania, Awarded May 1997 (*summa cum laude)*
Villanova University Presidential Scholar and British Marshall Scholarship Finalist (100 nationally)

PROFESSIONAL EXPERIENCE

University of Pennsylvania: Visiting Professor of Law (Fall 2007); Professor of Law, Business and Public Policy (Summer 2008 – Present).

The RAND Corporation, Institute for Civil Justice: Senior Economist (Summer 2007 – Present).

University of Hamburg: Visiting Professor of Law and Economics (Summer 2008; Summer 2009).

Columbia Law School: Visiting Professor (Spring 2008).

University of Southern California School of Law: Visiting Professor (August/September 2007).

Northwestern University School of Law: Visiting Professor (November 2006).

Florida State University: Assistant Professor of Law (Summer 2004 – Summer 2007); Jeffrey A. Stoops Professor of Law (Summer 2005 – Spring 2008); Associate Professor (August 2007 – Spring 2008); Courtesy Professor of Economics (Summer 2004 – Spring 2008).

American Enterprise Institute: Associate Director of Liability Project (June 2003 – June 2005).

The Mercatus Center: Research Fellow in Health Policy (September 2001 – March 2002); Dorothy Donnelley Moller Research Fellow (March 2002 – June 2003).

Council of Economic Advisors: Researcher for Health Policy Section of the 2002 Economic Report of the President (October 2001 – January 2002).

Department of Defense: Research Fellow (August 2000 – August 2001).

Bureau of Economic Analysis, *National Income and Wealth Division*: Research Economist working on Statistical Methodology Issues Relating to National Accounts (September 1999 – July 2000).

TEACHING EXPERIENCE

Corporations; *Torts; Law & Economics; Law & Economics of Crime; Health Law, Economics, and Policy*: University of Pennsylvania School of Law (2007 – Present).
Empirical Law and Economics; Econometrics: University of Hamburg (2008, 2009).
Corporate Finance; Health Law, Economics, and Policy: Columbia University School of Law (2008).
Business Associations; Economics of Private Law; Corporate Finance; Corporate Governance; Strategy in Law and Business; Statistics for Lawyers; Empirical Law and Economics: Florida State Law (2004 – 2007).
Introduction to Econometrics: George Mason University, Lecturer (Fall 2003).

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- "Passive Discrimination: When Does It Make Sense to Pay Too Little?" (with Jonah Gelbach and Lesley Wexler) *University of Chicago Law Review*, forthcoming.
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JONATHAN KLICK

BOOK CONTRIBUTIONS, ENCYCLOPEDIA ENTRIES, MONOGRAPHS, REVIEWS, ETC.

- "Functional Law and Economics," (with Francesco Parisi) *Theoretical Foundations of Law and Economics*, Mark D. White, ed. (Cambridge: Cambridge University Press, 2009).
- "Econometric Studies of Law," "Functional Law and Economics," "Multivariate Methods in Legal Studies," and "Formal Methods in Legal Scholarship," *Encyclopedia of Law and Society*, David Clark, ed. (London: Sage Publications, 2007).
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- "Drug Re-Importation's No-Win Solution," *Regulation*, 25(1): 6-7 (2002).

SELECTED WORKS IN PROGRESS (BY STAGE OF COMPLETION)

Under Review

- "The Impact of Attorney Compensation on Settlement Timing," (Garoupa & Helland) revising for JLEO.
- "The Regulation of Contracts: The Case of Franchising," (w/ Kobayashi & Ribstein) revising for JLE.
- "Differential Victimization: Efficiency Explanation for Felony Murder Rule," (with Nuno Garoupa) revising for Review of Law and Economics.
- "Global Justice and Trade: A Puzzling Omission," (with Fernando Teson) submitted to Business Ethics Quarterly.

Drafts

- "The Fungibility of Damage Awards," (w/ Catherine Sharkey).
- "Using BS Effectively in Empirical Law and Economics: A Primer on the Bootstrap (Parts I & II)," (with Gelbach).
- "How Sensitive Are Seniors to the Price of Prescription Drugs," (with Thomas Stratmann).
- "Autocrats and the Environment or It's Easy Being Green."
- "Expediency Cascades with an Application to Juries."
- "Uncertainty in Logrolling: Public Law Applications."
- "When Is It Optimal to Pay Employees Very Little?" (with Jonah Gelbach and Lesley Wexler).
- "Empirical Analyses of Crime Deterrence," (with Alex Tabarrok).
- "Sentencing Guidelines in a Deterrence Framework," (with Nuno Garoupa).
- "A Mechanism Design Approach to the Detection of Terrorists," (with Nuno Garoupa & Francesco Parisi).
- "New Evidence on the Causal Effect of Family Size on the Educational Attainment of Children," (with Frank Heiland and Alex Tabarrok).

Data Collection and Analysis Stage

- "Isolating the Causal Link Between Fetal Alcohol Exposure and Crime," (with Gelbach, Helland, and Patel).
- "Randomization Inference for Event Studies in Finance," (with Jonah Gelbach).
- "Dealing with Short Estimation Windows in Event Studies," (with Jonah Gelbach).
- "The Death Penalty and Deterrence of Crime in Prisons," (with Eric Helland and Alex Tabarrok).
- "Isolating the Causal Link Between Race and Treatment Disparities," (with Eric Helland).
- "Last Period Problems in Corporate Governance," (with Jonah Gelbach).
- "Collective Action Problems as the Source of Luck Induced Compensation," (with Jonah Gelbach and Eric Helland).
- "Who Gets Stopped at the Gate: The Effect of *Daubert*," (with Eric Helland).
- "The Relationship Between Abortion and Suicide."
- "Which Board Do You Drop Off First?" (with Eric Helland and Thomas Stratmann).
- "The Long Term Effects of Rationing During World War II," (with Jonah Gelbach).
- "Screening and the Priest Sex Abuse Scandal."
- "Substitution, Risky Sex, and AIDS Incidence."
- "The Minimum Wage and Rent Erosion: Evidence from Workplace Accidents."
- "Retail and Distributor Regulation in the Beer and Wine Market," (with Josh Wright).
- "Using Calendar Variation to Identify the Relationship Between Contributions and Attendance Among Catholics."
- "Mutual Funds as Common Pool Resources," (with Bruce Johnsen).
- "Managerial Myopia and Takeover Threats: Evidence from Re-Statements," (with Eric Helland).

JONATHAN KLICK

RECENT PRESENTATIONS

- Harvard Medical School, Race Disparities Panel (April 2009).
- Stanford Law School, Law and Economics Workshop (February 2009).
- University of Virginia School of Law, Law & Economics Workshop (January 2009).
- Southern Economic Association, Annual Meeting (November 2008).
- Northwestern University, Searle Center, Symposium on Civil Liability (October 2008).
- University of Pennsylvania Law School, Faculty Retreat (September 2008).
- Harvard University, Petrie-Flom Center, Our Fragmented Health Care System: Causes and Solutions (June 2008).
- CUNY Graduate Center/NBER, Seminar in Health, Labor, and Demography (May 2008).
- Columbia University, Empirical Methods and the Law Workshop (May 2008).
- The Rand Corporation, Institute for Civil Justice Annual Board Meeting (March 2008).
- George Mason University, Philosophy, Politics, and Economics Workshop (March 2008).
- Columbia University Law School, Faculty Workshop (March 2008).
- Claremont McKenna College/RAND, The Future of Securities Litigation Conference (February 2008).
- University of Michigan Law School, Law and Economics Workshop (February 2008).
- American Economic Association, Annual Meeting (January 2008).
- Harvard Law School, Law and Economics Workshop (November 2007).
- Conference on Empirical Legal Studies (November 2007).
- Emory University School of Law, Faculty Colloquium (November 2007).
- Rice University/University of Houston Departments of Economics, Microeconomics Workshop (October 2007).
- University of Pennsylvania Law School, Faculty Workshop (October 2007).
- George Mason University School of Law, Levy Fellows Workshop (October 2007).
- The RAND Corporation, Institute for Civil Justice Workshop (September 2007).
- University of Southern California School of Law, Faculty Workshop (September 2007).
- University of Southern California School of Law, Faculty Workshop (August 2007).
- Yale Law School, Faculty Enrichment Lectures (July 2007).
- Florida State College of Law, Primer on Statistics for Legal Scholars (July 2007).
- Federal Trade Commission, Behavioral Economics and Consumer Policy Workshop (April 2007).
- Yale Law School, Law Economics and Organization Workshop (March 2007).
- Florida State University, Center for Demography and Population Health Workshop (March 2007).
- University of Toronto, Law & Economics Workshop (February 2007).
- Florida State University Department of Economics, Faculty Workshop (March 2007).
- University of Georgia School of Law, Faculty Workshop (February 2007).
- University of Southern California School of Law, Law and Economics Workshop (February 2007).
- Cornell University Department of Policy Analysis and Management, Faculty Workshop (November 2006).
- Boston University School of Law, Faculty Workshop (November 2006).
- University of Illinois College of Law, Faculty Workshop (November 2006).
- Northwestern University School of Law, Faculty Workshop (October 2006).
- Conference on Empirical Legal Studies (October 2006).
- American Law and Economics Association, Annual Meeting (May 2006).
- University of Maryland Department of Economics, Labor/Public Workshop (April 2006).
- Columbia University School of Law, Blue Sky Workshop (March 2006).
- American Enterprise Institute, Health Disparities Myth Panel (February 2006).
- William & Mary School of Law, Faculty Workshop (February 2006).
- Georgetown University Law Center, Law and Economics Workshop (February 2006).
- George Mason University School of Law, Levy Workshop (February 2006).
- Northwestern University School of Law, Faculty Workshop (February 2006).
- American Association of Law Schools, Annual Meeting (January 2006).
- International Society for New Institutional Economics, Annual Meeting (September 2005).
- Northwestern University School of Law, Law and Economics Workshop (September 2005).
- University of California Berkeley, Law and Economics Workshop (August 2005).
- Southeastern Association of Law Schools, Annual Meeting (July 2005).
- American Law and Economics Association, Annual Meeting (June 2005).
- West Virginia University Department of Economics, Faculty Workshop (January 2005).
- Southern Economics Association, Annual Meeting (November 2004).
- International Society for New Institutional Economics, Annual Meeting (September 2004).
- American Law and Economics Association, Annual Meeting (May 2004).

APPENDIX B

Report of Christine T. Wood, Ph.D.

Submitted by British American Tobacco in Support of Its Response to the UK Department of Health's Consultation on the Future of Tobacco Control

August 31, 2008

August 31, 2008

STATEMENT OF CHRISTINE T. WOOD

I. Background

I, Christine T. Wood, have a Ph.D. in Experimental Psychology from Stanford University. Central to the field of Experimental Psychology is the study of human information processing including learning, memory, attention, vision, and perception. The capabilities and limitations of human information processing are systematically analyzed from infancy to late adulthood to better understand how these processes develop, operate, and change.

Currently, I am the Director of the Human Factors practice at Exponent, a scientific and engineering consulting firm, where I have worked since 1988. As part of my work at Exponent, I have applied my training and education in Experimental Psychology to consumer use of products. In particular, for nearly twenty years I have studied the safety- and health-related behaviors of consumers, focusing on ways that product-related information and design shape their knowledge and risk-taking behavior. As part of my work, I have evaluated education and training programs to measure their effectiveness and to determine the conditions under which children and adults learn the material to which they have been exposed. Some of the education programs I have studied include those serving underachieving children, vocational education programs for high school children and adults, programs for gifted and talented children, and programs for children with special needs. I have directed Congressionally mandated studies for the United States Department of Education in which a national evaluation system was developed to measure the gains in reading and math of underachieving children.

I have also published peer-reviewed papers in scientific journals and in the proceedings of annual conferences of professional organizations on topics related to consumer behavior and information processing. I am a member of the Human Factors and Ergonomics Society, the American Educational Research Association, and the Society for Risk Analysis. I have served as a member of the editorial board for the *Journal of Children's Health*. I have qualified to testify as an expert in courtrooms throughout the United States to offer opinions related to human information processing issues.

I have been asked on behalf of BAT Holdings to comment on the proposals presented in the UK Department of Health *Consultation on the future of tobacco control* ("DOH Consultation") to further restrict the display of tobacco products in retail environments ("POS

display") as a measure to "reduce uptake of smoking by young people."[1] According to the DOH Consultation, evidence suggests that POS tobacco displays persuade existing smokers to keep smoking and encourages young non-smokers to start.[2] To examine these hypotheses, I critically examined psychological issues in human learning and attention as they relate to the role of POS displays of cigarette packages and smoking behavior and assessed the potential influence of in-store displays of cigarette packages on smoking behavior. I also reviewed findings from a body of scientific literature on the purported effects of POS information and in store displays of packages on smoking behavior. In addition, I examined how various psychological mechanisms (e.g., implicit learning, subliminal learning, and paired-associate learning) may be purported to create associations between POS displays and smoking behavior and analyzed the likely impact of the POS displays relative to consumers' current smoking behaviors as well as the many factors that are known to influence such behaviors.

Based on my analysis, I have drawn the following main conclusions:

i. POS displays of cigarettes in retail stores will not increase the initiation or prevalence of smoking and will not discourage smoking cessation.

ii. The literature on the effects of POS displays of cigarettes on smoking behavior do not allow valid and reliable conclusions to be drawn to support a ban on POS display of cigarettes.

iii. The proximity of POS display of cigarettes to potentially desirable objects will not predispose youth to smoke.

II. Impact of POS Display of Cigarette Packages on Consumers Categorized by Their Smoking Behavior

A. Overview of How People Process and Attend to Information

In order to understand whether POS cigarette displays would influence smoking behavior, it is necessary to understand how individuals perceive and process information based on their selective attention and memory. The presence of information in an environment does not automatically result in attention to or processing of that information because human perception is selective. People's perceptions depend on what they bring with them from their past experience and what their present needs and wishes are. From moment to moment, people's sensory systems are bombarded with an overwhelming amount of information, certainly too much for anyone to process fully at any given time. Due to limitations in human information processing (Miller, 1956) and to avoid "information overload," individuals must be able to select important and relevant information for their behavior. For example, "information

[1] See DOH Consultation, at p. 28, ¶3.11-12.

[2] See DOH Consultation, at p. 31, ¶3.28.

overload" might occur when a shopper's mental list of items for purchase increases and may require the use of a written shopping list.

Individuals do not attend equally to all the objects available to them, but rather focus upon a few. This perceptual focusing is called attention. Attention allows people to select relevant information for processing, while learning and memory allow their perceptual history to influence their current behavior.

Memory can serve to direct attention to aspects of our visual scene (Awh et al., 1998; Downing, 2000; Moores et al., 2003; Summerfield et al., 2006). An individual's knowledge, experience, and behavioral goals can serve to guide attention to locations and objects in the environment.

Through attentive processes people keep in focus selected stimuli and resist distracting stimuli (Hilgard, Atkinson, & Atkinson, 1971). Research on "visual search" has identified few conditions that can successfully "capture" attention. Indeed it is rare that an item in one's field of view attracts one's attention so strongly that it overrides the existing focus or conscious thought. Strong evidence for the inability of clearly visible stimuli to sometimes reach awareness if they are not a part of the focus of attention comes from a phenomenon identified in the psychological literature as "inattentional blindness" (Mack & Rock, 1998; Simons & Chabris, 1999). The overwhelming evidence from cognitive psychology shows that attention guides learning and memory, sensory perception, and goal-directed behavior, and that the items that are the focus of attention shape our actions.

In the retail store environment, there are myriad categories of products as well as signs, lights, people, and other objects. Based upon extension of the research on human attention and information processing to the POS display of packages of cigarettes, the display of packages would largely be behaviorally relevant and selected for further processing only by those with an interest in cigarettes (e.g., smokers). For others, such stimuli would simply be more perceptual noise, not unlike the multitude of other visual information that is ignored from moment to moment throughout a day. Any actions that are taken after attending to a display of cigarettes will be goal directed, experience driven, and not determined simply by the presence of a product displayed in a retail store.

As with any object, the amount of attention given to POS displays of cigarettes and decisions to purchase tobacco will be a function of the goals of the individual and will likely be affected by other factors known to be related to smoking behavior. For purposes of this analysis, the consumer pool has been categorized into four groups with respect to their interest in smoking and their smoking-related goals. The groups include smokers who intend to continue to smoke, smoking experimenters, smokers who intend to quit, and non-smokers.

As an initial matter, in the UK, information currently permitted to be present on cigarette packages does not offer messages of people engaging in activities intended to convey

positive characteristics. Nor are there any other "positive values" of smoking conveyed on the package, such as "looking tough" or "looking grown-up." In fact, much of the surface of each cigarette package reiterates health hazard warnings. For example, in the UK, cigarette packages feature one of 16 text warnings covering 30% of the front and 40% of the back of the package.

B. For Continuing Smokers, POS Displays of Cigarette Packages Will Not Increase Smoking Prevalence

According to the DOH Consultation, "[t]here is . . . evidence that point of sale displays can stimulate impulse purchases among those not intending to buy cigarettes and, importantly, among adult smokers who are trying to quit."[3] For continuing smokers, the decision to go to a store to purchase cigarettes is a planned destination purchase and not an impulse purchase because the decision to buy cigarettes is generally made well before the smoker enters a store. Planned or destination purchases are those that prompt an individual to leave home and enter a store to obtain the desired item (Beatty & Ferrell, 1998). Many household staples such as bread, milk, or tea are planned purchases. When consumers' household supplies of these products are used up they must be replaced, prompting a trip to a store. The customers often enter the store not only with the intention of making a purchase of the particular item, but often they are particular about the brand they wish to purchase. Additionally, consumers often will know that some cigarette brands are available at specific stores and choose stores accordingly. Indeed, the DOH Consultation reports that "evidence shows that most smokers make up their minds about which brand of tobacco they will buy long before they reach the shop, with less than 3% of tobacco-purchasing customers deciding to change brand at the point of sale."[4] It also cites further support from a survey of smokers in Australia that reports that 90% of them never decide their brand at point of sale, with only 1% always making a brand decision in the shop (Wakefield & Germain, 2006).[5]

In addition, the DOH Consultation notes that cigarette smoking leads to nicotine addiction.[6] According to the National Institute on Drug Abuse, such tobacco use is primarily a form of nicotine seeking behavior (National Institute on Drug Abuse, 2006). If it is the case that an individual is addicted to nicotine, then for such a smoker, the purchase of cigarettes is a planned destination purchase to obtain cigarettes for their recognized unique attributes.

Moreover, for continuing smokers, the expense of purchasing cigarettes on a regular basis is relatively high and therefore the continual purchase of cigarettes is unlikely to be done on impulse. For example, the retail prices of packages of local brand cigarettes for several countries, presented in Table 1, along with national data for disposable income per person, indicate that purchasing one pack of cigarettes per day would account for a considerable portion

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[3] See DOH Consultation, at p. 32, ¶3.33.

[4] See DOH Consultation, at p. 33, ¶3.38.

[5] See DOH Consultation, at p. 42, ¶3.78.

[6] See DOH Consultation, at p. 52, ¶5.5.

of an individual's disposable income in each of these countries, ranging from 5% in the United States to more than 13% in the United Kingdom. The proportion of disposable income that must be allocated to the purchase of cigarettes is sizeable for a continuing smoker, requiring such purchases to be planned.

Table 1. Cigarette Retail Prices and Per Capita Disposable Income.

Country	Year	Retail Price (pack)	Price per Year, 1 Pack per Day	Per Capita Disposable Income	Price per Year / Per Capita Disposable Income
Canada	2001	$4.46	$1,628	$21,511	7.6%
Ireland	2003	€4.97	€1,814	€18,610	9.7%
United Kingdom	2003	£4.59	£1,675	£12,433	13.5%
United States	2001	$3.60	$1,314	$26,224	5.0%

Sources: Guindon et al., 2002; Central Statistics Office, 2006; National Statistics, 2008; Bureau of Economic Analysis, 2007; Wilkinson, 2003; World Health Organization Regional Office for Europe, 2007.

In sum, POS display of cigarette packages will not change the prevalence of smoking among continuing smokers. Through both experience and possible signage, continuing smokers will be familiar with stores where cigarettes can be purchased, and they will plan to go to those stores specifically for the purpose of buying cigarettes. As noted in the DOH Consultation, even if POS displays were restricted, regular customers of retailers will continue to buy tobacco products, unless they quit smoking altogether.[7] The presence of POS display will not influence the volume of sales of cigarettes.

C. For Those Experimenting with Smoking, POS Displays of Cigarette Packages Will Not Affect Their Smoking Behavior

The DOH Consultation asserts, "The recruitment of young people as new smokers is enhanced by point of sale display simply because children are exposed to prominent cigarette gantries throughout their childhood."[8] According to data from the U.K. (Goddard, 2008), surveys from the U.S. (US Department of Health and Human Services (US DHHS), 1994), and surveys from Canada (Health Canada, 2003), the majority of smokers begin smoking before

[7] See DOH Consultation, at p. 33, ¶3.37.

[8] See DOH Consultation, at p. 32, ¶3.30.

they begin adulthood. If that is the case, then to understand the importance of cigarette pack visibility in retail settings to early smoking behavior, it is necessary to understand the importance of POS display of cigarette packages to adolescents.

There is little research attempting to directly relate the potential impact of seeing POS display of tobacco in a retail environment on the behavior of consumers of any age group (e.g., Wakefield et al., 2006; Wakefield et al., 2008). Moreover, the utility of this literature in understanding the effect of cigarette package display in the retail environment is greatly limited due to flaws in the design and analysis of each of these studies (see critical review of literature in section III of this report).

In sharp contrast, there is a substantial body of literature regarding factors, including social class, academic attainment, peer, family, and cognitive factors that contribute to adolescent smoking behavior in North America and Western Europe. Among the factors identified are peers (whether one is connected to a peer group that includes smokers) (US DHHS, 1994, 2001) and family (whether parents or siblings smoke) (DOH Consultation, 2008; US DHHS, 1994, 2001). Indeed, the DOH Consultation states "an 11-15 year old who lives with at least one other person who smokes is more than twice as likely to be a regular smoker as someone who lives in a household where no one else smokes."[9] These factors influencing smoking initiation are separate from and unrelated to the display of cigarettes in retail stores. Any potential effect on youth due to exposure to POS display of cigarette packages will occur within this broader context. Consideration of these factors provides support for assessing 1) the likely impact of removing POS display on experimentation, initiation and current smoking rates among adolescents; and 2) the overall susceptibility to smoking within those age groups.

In many jurisdictions, including the UK, age limit laws are designed to restrict adolescents' access to tobacco from retail stores. The presence of a display of packages would not make cigarettes accessible where age restrictions are enforced. In addition, across a variety of settings, a large percentage of the cigarettes acquired by adolescents are through social contacts, such as family and friends (Substance Abuse and Mental Health Services Administration, 2004; Croghan et al., 2003; Office of Tobacco Control, 2003; Health Canada, 2007; DOH Consultation, 2008).

In summary, removing the pack from visibility likely will not affect the smoking behavior of adolescent smokers who do not view the retail environment as the place to acquire tobacco, instead obtaining it through extralegal means. Ultimately, for adolescents who smoke and are able to buy cigarettes in retail stores, cigarettes become a planned or destination purchase in the same way as for adult smokers, where experience and signage provide sufficient information about where cigarettes are sold.

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[9] See DOH Consultation, at p. 25, ¶3.8.

D. For Smokers Attempting to Quit, POS Displays Will Not Discourage Cessation

Although the DOH Consultation refers to evidence that POS cigarette displays can stimulate impulse purchases among adult smokers who are trying to quit,[10] there is no reliable empirical basis to conclude that a change involving removing cigarette packs from view would have an impact on quitting behavior. Decisions to quit smoking that result in quitting are planned and unlikely to be impulsive because quitting frequently involves significant effort and persistence (US DHHS, 1990). Indeed, most successful quitters often attempt to quit multiple times before succeeding. Successful quitters cite health concerns and setting an example for children as motivating factors (Halpern & Warner, 1993). These primary reasons for quitting persist independently of the visibility of packages.

In addition, quitting behavior is complex and potentially vulnerable to a variety of factors. Studies have shown that these factors include responses to interpersonal negative emotional states (e.g., frustration, anger, depression, boredom); interpersonal conflicts; and social settings in which other smokers are present (Curry & McBride, 1994). These factors need to be minimized or, where possible, avoided by smokers who desire to quit as they may lead to relapse. None of these factors is related to POS display of cigarettes. Moreover, smokers attempting to quit do not need to see POS display of cigarettes to know whether they are available in a specific store. This is especially true when posted signs advise that cigarettes are sold. Regardless, there is no evidence that knowing whether cigarettes are for sale is a major factor related to relapse behavior.

E. For Non-smokers, Cigarette Displays Will Not Increase Smoking Initiation

Given the complexity of the retail environment, the frequently purpose-driven nature of shopping, and the difficulty of any given product attracting attention in that environment, an adult who enters a store looking for non-tobacco products will most likely fail to attend to the tobacco products on display. If anything, the presence of cigarette packs on display with warnings on the packages is likely to reinforce existing anti-smoking attitudes among non-smokers.

F. It Is Premature to Measure the Impact of Display Bans in Other Countries Although Iceland's Ban Suggests No Impact

The display of tobacco products at retail has been restricted by legislation at a national or regional level (e.g., provinces within a country) in several countries. In most cases, the numbers of consecutive years in which the same ban has been in effect in a location are too few to provide a stable estimate of the impact of such bans. In addition, a careful study design and/or complex statistical analyses controlling for other factors contemporaneous to time before

[10] See DOH Consultation, at p. 32, ¶ 3.33.

and after a ban, such as other legislative provisions and factors other than legislation, would have to be applied in order to permit any changes in rates, if observed, to be attributable to a display ban alone.

However, Iceland is one country that has had a relatively long experience with the implementation of display bans, having had one in effect since 2001. Prior to the ban, smoking rates for individuals ages 15 to 79 were in decline, and this trend remained essentially unchanged after the ban was implemented (Public Health Institute of Iceland, 2007). Additionally, the annual percentage of the Icelandic population that indicated they had stopped smoking in the previous year remained relatively level between the years 1987 and 2006 and the annual percentage of the population that had never smoked continued to increase at the same rate after the ban as before. Without statistically controlling for any other potential influences, the data suggest that the 2001 display ban has not had an effect on cessation rates of current smokers or on rates of those who have never smoked.

G. Conclusion

In conclusion, POS display of cigarette packages in retail stores will not increase the initiation or prevalence of smoking and will not discourage those attempting to quit.

i. For continuing smokers, the purchase of cigarettes is not an impulse purchase, but rather a goal-directed, planned, destination purchase. Continuing smokers will make efforts to acquire cigarettes, regardless of whether they are displayed on store shelves.

ii. With respect to youth smoking, family and peers and other factors unrelated to POS displays of cigarettes are associated with who becomes a smoker. In addition, adolescents who are not yet legally able to purchase cigarettes in retail settings are able to obtain cigarettes through other sources that are not connected to POS display of cigarettes. As many smokers begin smoking before they are legally able to buy cigarettes at retail, they are continuing smokers at the time they reach 18 years old and their purchases will be planned rather than impulsive.

iii. For those attempting to quit smoking, common cues that trigger the renewal of smoking relate to situational and interpersonal factors associated with their former smoking. When these situational and interpersonal factors reoccur or reappear, they can prompt the desire to have a cigarette. The presence of cigarette packages on display in a retail store does not have any of these situational or interpersonal associations with smoking. Based on experience and signage, smokers attempting to quit will already be knowledgeable about where they can purchase cigarettes even in the absence of displays of packages.

iv. For non-smokers, displays of cigarette packages will be part of the visual noise in a retail environment in the same way that many other irrelevant objects and products are present for shoppers. The presentation of cigarette packages in retail stores will not prompt purchases of cigarettes by those who do not plan to smoke.

III. Methodological Limitations of the Literature on POS Display Do Not Support Further POS Display Restrictions

To evaluate the effect that POS display of cigarette packaging may have on cigarette sales and smoking behavior, I have reviewed available literature addressing POS advertising and cigarettes. Below I detail my review, criticism, and evaluation of this work. In addition to a broad critique of the available literature, I provide more detailed discussion of two recent articles by Wakefield and colleagues (2006, 2008) cited in the DOH Consultation that purport to address effects of POS display.

While a number of studies have addressed POS advertising, no published study has been specifically designed to allow direct evaluation of the effect POS display of cigarette packaging may have on behavior, or to measure the behavioral effects of a ban on POS display. Moreover, the validity and generalizability of the findings of these studies are frequently limited by significant methodological flaws.

A. Methodological Limitations of Findings in the POS Display Literature

Methodological limitations call into question the applicability of much of the POS display literature related to tobacco. Among the problems that surface repeatedly are inadequate selection of sample respondents, insufficient measures of exposure to POS advertising, absence of statistical control of other variables related to smoking behavior, and treatment of statistical measures of association as causality.

Samples of study participants are often chosen based on convenience or targeted where the potential for observing significant effects is greatest, with little regard for the representativeness of the results. A frequent reliance on "convenience samples" makes it impossible to confidently generalize from results. Although some convenience samples allow for greater generalizability than others, the samples used in many of the studies fail to adequately represent even the national populations of the countries in which the studies are conducted (e.g., Henriksen et al., 2004; Donovan et al., 2002; Schooler et al., 1996). Consequently, generalizations made from such studies on POS advertising to a proposed ban on POS display of cigarette packages in the UK are unwarranted.

Measures of exposure are often poorly conceptualized or operationalized. Purported measures of exposure to cigarette advertising rely heavily on questionably reliable self-reports. Although Henriksen and Jackson (1999) claim that self-reports can be accurate, the

disadvantages of using this method have been known for several decades. For instance, self-report measures are known to be affected by, and therefore susceptible to, inaccuracies stemming from demand characteristics, social desirability, and poor recall (Ayres & Wood, 1999). The measures used in the cited studies also often confound multiple marketing techniques. In some instances, researchers substituted reports of shopping behavior without regard for the actual presence of cigarette advertising. For example, Henriksen and colleagues (2004) assessed the exposure of teenagers to retail tobacco marketing based solely on reports of "at least weekly visits to convenience, liquor, or small grocery stores."

The statistical analyses performed are inadequate to justify claims of causality. Assertions that effects are "independent" of other factors well known to be associated with youth smoking require the specification and inclusion of control variables in statistical models; in many cases, such variables are absent or inadequate. More generally, it is inappropriate to characterize measures of association as indicators of causality; correlation does not equal causation.

The DOH Consultation references Rogers et al. (1995) as support for the claim, "Research has shown that tobacco impulse purchases increase by as much as 28% when there are displays of tobacco products at point of sale."[11] The Rogers article itself, however, cites *The Point-of-Purchase Advertising Industry Fact Book* (1992) as the source of the statistic. The Fact Book, in turn, indicates the source to be a "POPAI Supermarket Consumer Buying Habits Study," but none of the methodological details of the study are described. In the absence of such descriptions, there is no way to assess the scientific basis or the validity and reliability of this estimate of the impact of point-of-purchase displays on tobacco impulse purchases.

A recent work by Wakefield et al. (2006), cited in the DOH Consultation[12] for the proposition that POS display enhances recruitment of young people to smoke, claims to use an experimental approach to assess effects of exposure to POS displays on children and therefore merits closer attention. Examination of the actual study shows that it contains similar weaknesses to those studies that preceded it, and that it does not provide support for claims with regard to the effects of POS displays.

The Wakefield et al. (2006) study was conducted on a "convenience sample" of students from five schools in Victoria, Australia, in 2003 and 2004. As the name implies, convenience samples are drawn from accessible locations for the convenience of the researcher, in contrast to methodologies that rely on randomization to obtain a sample representative of the population of interest. Use of a convenience sample can easily lead to non-representative samples and biased results; moreover, increasing the sample size may be of little benefit, as the additional subjects will be drawn from the same limited groups. Consequently, the results obtained from the 605 students cannot be confidently generalized to the whole population of

[11] See DOH Consultation, at p. 32, ¶3.33.

[12] See DOH Consultation, at p. 32, ¶3.30.

ninth-grade students in Victoria, Australia, and are further limited in their applicability to populations living in different regulatory or cultural environments.

The study itself consisted of showing 605 students ages 14 and 15 years old a color photograph of the interior of a convenience store while a research assistant read aloud a fictional news story about teen eating habits and visits to convenience stores. The photographs varied based on the experimental condition; they either included cigarette advertising and POS displays of cigarettes, had the cigarette advertisements digitally removed, or had both the cigarette advertisements and POS displays of cigarettes digitally removed. After this exposure, the students completed a questionnaire, including various questions related to cigarettes and smoking.

There are considerable and important differences between this experimental exposure and exposure to POS advertising or displays outside of a laboratory setting. Studying photographs in a classroom is quite unlike the experience of walking around a convenience store. In addition, the authors used practices intended to direct students' attention to the advertising and displays, noting: "Before the experimental manipulation, all students took part in a discussion designed to increase the salience of general brand advertising and display", and "Students were told to look carefully at the photograph they were given of the point-of-sale, and asked to imagine walking around the shop noticing what to buy, while they listened to the story" (p. 340).

Despite a sample size considerably larger than the other "experimental" studies (e.g., Donovan et al., 2002; Henriksen et al., 2002), the authors report few results that are statistically significant at the commonly accepted $p < .05$ level. In fact, Wakefield et al. (2006) note that they found no consistent effects of cigarette advertising or POS display on peer approval for smoking. This is noteworthy because, as noted above, the presence of peer smoking is a significant predictor of youth smoking. Furthermore, when students were asked about their intention to smoke any time in the next year, no significant differences were reported between students who had viewed only POS displays and those who had viewed neither POS displays nor advertisements. The authors also note that the subjects "tended to disagree with statements attributing positive characteristics to teenagers who smoked" (p. 343) and that "Regardless of survey condition, most students agreed that smoking can harm your health" (p. 343). Another finding was that students' own reports of exposure were often at odds with the actual experimental condition, as "Over one-third (35%, $n = 74$) of students who saw the store with no cigarettes reported that they had seen tobacco products, even though there was none present, and this false recognition was positively related to being a current smoker" (p. 346). The study offers no support for contentions about links between the POS displays (or even POS advertising in general) and the intentions to smoke or perceived desirability of smoking to youth.

Despite the apparent lack of evidence in support of a measurable effect on the above metrics of interest, the authors claim the study "suggests that the presence of cigarette displays

at the point-of-sale, even in the absence of cigarette advertising, has adverse effects on students' perceptions about ease of access to cigarettes and brand recall, both factors that increase the risk of taking up smoking" (p. 346). In the context of this article, the claim of "adverse effects" of cigarette pack displays relates to students rating tobacco products as easier to access and demonstrating better recall of tobacco brands after viewing photographs of stores displaying packs than those that did not. This statement is predicated on small differences across conditions on students' responses to questions about perceived access to cigarettes. Those who saw the cigarette display or advertising conditions reported it would be less difficult for either themselves or students their age to purchase tobacco at the pictured store. Those who saw the advertising condition reported they were less likely than in the "no cigarettes" condition to be asked for proof of age if they tried to buy cigarettes; there was no significant difference between the results in the "display only" and "no cigarettes" conditions. Findings could be explained by other mechanisms as simple as students who observe cigarette displays or advertising being more likely to believe that cigarettes were actually sold at the pictured store. Support for further assertions is unconvincing and unfounded based on the information reported. The reliance on and interpretation of this weak evidence by the authors is tenuous at best, and contradictory to the majority of the evidence presented elsewhere in the very same article.

More recently, Wakefield and colleagues (2008) again attempted to address the effects of cigarette pack displays, based on a telephone survey conducted in Victoria, Australia. This study was also cited in the DOH Consultation as evidence that POS displays stimulate impulse purchases among those not intending to smoke and those trying to quit.[13] They examined the responses of 526 adult smokers and 67 recent quitters to questions regarding noticing cigarette displays at POS and respondents' perceptions of the effects of such displays. Once again, this study suffers from a number of methodological and theoretical shortcomings.

The researchers state that a primary outcome of interest was "purchase behavior, i.e. an indication that smokers buy cigarettes on impulse at least sometimes as a result of seeing the cigarette pack display" (p. 2). However, to assess this outcome, they simply relied on responses to the question, "when shopping for something other than cigarettes, how often do you decide to buy cigarettes as a result of seeing the cigarette pack display in the store – would that be always, often, sometimes, rarely or never?" With neither a definition of "impulse," nor further examination or direct measurement of actual purchasing, it is inappropriate to claim this question serves as a valid measure of the researchers' outcome of interest.

In addition, measurements of exposure to displays, cigarette consumption, quitting behavior, purchase behavior, and "urge to smoke" are poorly conceptualized and operationalized. Questions used to probe these issues are frequently vague, and responses may be highly dependent on respondents' interpretation. These concerns compound known pitfalls of the self-report measures on which the study is completely reliant. In discussing the possible limitations of this study due to the use of retrospective self-report, the authors ignore many

[13] See DOH Consultation, at p. 32, ¶3.33.

sources of potential error, and mischaracterize the effect any errors could have on their data. For example, the researchers wrongly assert that under-reporting of respondents that had tried to quit in the past 12 months "would have simply reduced the size of this subgroup, rather than changed substantively its composition and the associations with urge to purchase" (p. 5). Differences between those included or not included in the subgroup could in fact be substantively important, and could potentially affect any observed association with other variables. Without additional understanding of respondents' interpretation of the questions and the motivation and reasoning that led to the selection of responses, the authors' claims regarding the effects of potential biases are unsupported.

An additional concern regarding how representative and valid the analyzed data are stems from the researchers' choice to exclude "don't know/can't say" responses from their logistic regression models. Without reporting more details, it is unclear how this may have affected the outcome of the analyses or whether the exclusion of such data is justified. Without additional details concerning the questioning of subjects, instructions given, and the subjects' responses, it is not possible to determine whether consumers understood, interpreted, and answered the questions posed in the way intended (and interpreted) by the researchers.

It is inappropriate for the researchers to attribute effects observed to cigarette displays without considering numerous other factors (e.g., peers, family, stressors, etc.), many of which, as acknowledged in the DOH Consultation, are known to influence behaviors of interest (e.g., purchase, decision to smoke, quitting efficacy, etc.). However, the study made no attempt to do so. Even with a more rigorous design and consideration of additional variables, the method employed cannot support the causal relationships that the researchers suggest between cigarette displays and impulse purchase, ease of quitting, and "urge to smoke."

In considering the results that are reported, the research presents few statistically significant findings with respect to the outcomes of interest. No explanation or interpretation is offered for several of the significant effects they do report; others are of questionable utility and meaning. For example, the authors state, "the likelihood of purchasing cigarettes on impulse at least sometimes was significantly greater among those who noticed cigarette displays at least sometimes (compared to rarely/never)" (p. 3). However, the question used as a measure of impulse purchasing specifically asked about purchases as a result of seeing such displays; logically, noticing a display would be a necessary precursor to such a purchase. Similarly, the reported association of noticing cigarette displays and an "urge to purchase" among smokers who had tried to quit in the past 12 months relies upon a question incorporating language specifically identifying the urge to purchase as a result of seeing a pack display. Insofar as these variables are inherently confounded, the conclusions drawn from their reported analysis are critically flawed. Furthermore, survey evidence reported elsewhere indicates that for former smokers, the display of cigarettes does not trigger a relapse. A survey conducted on behalf of Health Canada in 2005 found that for former smokers, 80% reported that the display of cigarettes has no impact on their purchase behavior and 16% reported that the display confirms their decision not to smoke (Corporate Research Associates Inc., 2005).

B. Conclusion

In summary, I concur with Henriksen et al.'s (2002) assertion that, "Surprisingly little is known about whether exposure to widespread tobacco advertising in stores influences youth smoking" (p. 1772). Indeed, my review of the literature, including their article, remains consistent with this observation. The findings from the available scientific literature do not allow valid and reliable conclusions to be drawn to support a ban on the POS display of cigarette packages. Rather, a review of the existing scientific literature leads me to conclude that 1) the purchase of cigarettes is not an impulse purchase, 2) the display of cigarette packages in the retail environment will not affect the rate of smoking uptake, consumption, or cessation, and 3) the display of cigarette packages in the retail environment will more likely have an effect on the choice of brand rather than on the decision to purchase overall.

IV. Psychological Theories of Information Processing As They Apply to the Effects of POS Displays on Smoking Outcomes

In addition to assessing the role of POS displays as detailed above, I was asked to review potential concerns related to the POS display of cigarette packages and to relate these to psychological theories of learning, memory, information processing, and purchasing behavior, specifically the purchasing and smoking behavior of consumers. The DOH Consultation describes cigarettes in larger supermarkets as frequently being sold close to store entrances with other items such as sweets and on gantries located behind the cash register and raises the concern that this placement makes it "inevitable that tobacco will be noticed by customers."[14] This concern was also raised when the Tobacco Free Policy Review Group (2000) expressed concerns about various aspects of presentation of tobacco products at POS in retail stores. That report offers an observation that retailers often display tobacco products prominently and close to confectioneries and concludes that this builds subliminal associations between confectioneries and cigarettes (p. 48). Others too have expressed concerns that it is the experience of consumers to encounter POS cigarette displays positioned where children may see them, such as near candy or confectionery (Feighery et al., 2001), and that children will be predisposed to become smokers as a result of these displays (Wakefield et al., 2006).

These and similar concerns relate most strongly to psychological theories of learning and memory. The scientific understanding of learning and memory is not compatible with assertions that the display of cigarette packages will form "subliminal associations" (e.g., Tobacco Free Policy Review Group, 2000, p. 48) to influence human behavior. Such concerns are based on either 1) the assertion that the display of the cigarettes, particularly when located near products that youth desire, such as sweets, will serve as a stimulus that will lead to a decision to purchase and smoke cigarettes, or 2) a belief that a paired association will be created between displays of products that are viewed by children as having positive attributes (e.g., candy) and displays of cigarettes. Such arguments mischaracterize human learning and offer an

[14] See DOH Consultation, at p. 30, ¶3.22, and p. 31, ¶3.25.

over-simplistic model of human behavior, governed solely by environmental cues and absent of any rational choice, goal-directed behavior, experiential knowledge, and explicit memory.

Human learning and memory can be divided into broad categories: explicit and implicit. Explicit learning and memory refer to processes and events for which we have conscious access and recollection. Knowledge of facts and distinct events are associated with explicit memory. Implicit learning and memory, on the other hand, are most often associated with knowledge that is accumulated over time and may not be consciously accessible or expressed. Implicit learning is often implicated in the context of category learning, for which multiple sources of information may need to be integrated. During category learning, skill levels increase over time, even though people are often unable to describe the strategies they are using to obtain their higher level of performance. For example, radiologists appear to use this type of learning to develop higher skill levels of detecting anomalies and supplement the rule-based techniques that have been explicitly taught or used.

Both forms of learning and memory are active and can influence human perception and action, and the two systems interact with one another to further shape learned behaviors. An implicit learning system allows for the extraction of information, and the resulting behavior changes often cannot be expressed by a person. However, this does not imply that all stimuli within the visual field are given equal priority and relevance in shaping our actions, or that items not attended to can more strongly and surreptitiously influence behavior than items to which we do currently attend. Indeed, situations that rely strongly on implicit learning do not resemble the typical consumer experience while shopping.

It has been claimed that the nearby presence of confectionery displays will become associated with cigarettes (e.g., Tobacco Free Policy Review Group, 2000) and that, since children view sweets positively, cigarettes would be viewed positively by virtue of their proximity to sweets in the retail store. Literature on "paired-associate learning" refers to a specific mechanism that allows for associations between stimuli (Anderson & Bower, 1974). In order for paired-associate learning to occur for confectionery-cigarette displays, one would need to associate the confectionery displays to the cigarette displays. The confectionary and cigarette displays will become associated only if a proposition is formed to link them. However, it is unlikely such a link would be formed solely on the co-occurrence of these two stimuli in some retail settings, as the two are behaviorally unrelated and the co-occurrence or the presence of one may go unnoticed. Without this link, it is unlikely that there will be learning or long-term remembering of an association between the confectionary display and the cigarette display.

There are no meaningful semantic, functional, or other relationships or associations between confectioneries and cigarettes. In contrast, there are meaningful functional relationships, for example, between cigarettes and lighters or cigarettes and matches. If given the stimulus word "confection" or "candy," it is extremely unlikely that people would respond with the word "cigarettes." In fact, professors at the University of South Florida and the University of Kansas have compiled a database of word associates. This endeavor began in

1973 and includes more than 6,000 participants and nearly three-quarters of a million responses to 5,019 stimulus words. By allowing subjects to freely associate, this database lists the most common associates to a vast number of common words. Both the words "candy" and "cigarette" were included in this normative effort; neither is associated with the other as no subject responded with the word "cigarette" when presented "candy," or vice versa. Furthermore, none of the words subjects provided in response to the stimulus word "candy" were also provided in response to "cigarette," nor were any of the words provided in response to the stimulus word "cigarette" also given in response to "candy" (Nelson et al., 1998). There is no useful or meaningful association established between the two objects at retail stores, nor is there any such learned association that has been systematically reinforced or rewarded through daily events. The proximal pairing of displays of products that have no other association with one another will not increase the purchase or use of the second product given the presence of the first.

Displays of cigarettes near items that youths view favorably, such as candy, will not cause consumers to attend to the cigarette display and will not increase the likelihood of purchasing cigarettes. Any concern that consumers will attend to cigarette displays because they are placed near favored items ignores the well-known phenomenon in the psychology literature, often referred to as a "level of processing" effect that distinguishes between "high involvement" and "low involvement" processing. In general, the more fully one engages and attends to information, the more strongly it is encoded and can be retrieved at a later date. Indeed, recent research has shown that attention plays a role in and enhances both explicit and implicit learning (Mulligan, 1998; Turk-Browne et al., 2006). The probability that the display of a cigarette pack will influence future perception, actions, and behaviors decreases if it is not attended or engaged as part of goal-directed behavior.

While under specific experimental conditions "mere exposure" to a stimulus has been shown to influence future behavior, such an effect cannot support an assertion that familiarity with a product through repeated presentation of it will breed acceptance, positive attitude, and possibly use of the product. In one experimental example, geometric shapes that were repeatedly presented to a subject were subsequently rated more positively than geometric shapes that the subject did not see (Bornstein, 1989). Since this study specifically addressed relative "liking" amongst similar items of a given type, the extension of these results to cigarette displays more directly applies to issues of brand selection and competition, and the establishment or maintenance of preferences among different brands for consumers currently interested in purchasing cigarettes. Attempting to extend this "mere exposure" effect to the display of cigarette packaging in stores and suggesting overall acceptance and attitude and behavior changes to cigarettes in general ignores the roles that explicit knowledge and attention play in guiding human behavior.

Moreover, the view that implicit learning implants "markers" that can be later activated to influence behavior without consumer knowledge does not address the depth of human behavior. Such a limited description of human information processing is analogous to

suggesting that human behavior is simply like that of Pavlov's dogs, and that people are merely vessels passively awaiting the pairing of a bell and food. Human behavior is more complicated than this type of simple "stimulus-response" association; it is often goal-directed**,** and it is influenced by both explicit and implicit learning.

Psychological constructs such as implicit learning, exposure effects, and associative learning alone do not fully capture the complexity of human information processing. One must consider the human ability to selectively attend to information based on individual interests, past experiences, and goals. The directions human behavior will take are based upon information about objects that have been selected for attention and are then guided by plans and goals; they are not simply learned responses to stimuli. Therefore, the concern that cigarette displays, positioned near desirable objects, such as confectionary displays, will make cigarettes more desirable or predispose youths to smoking are unfounded.

V. Conclusion

The proposal to further restrict POS display of cigarette packages will not accomplish the DOH Consultation's goals to reduce smoking. For continuing smokers, the decision to smoke and to purchase cigarettes is not an impulsive one but rather one that is determined before an individual enters a store. In this respect, POS displays will not affect smoking rates among current smokers. For those individuals who are experimenting with smoking (generally youth), there are myriad factors that influence their decision to purchase cigarettes that are separate from and unrelated to POS displays of cigarettes. Moreover, if age limit restrictions are properly enforced, youth will not be allowed to purchase cigarettes in retail stores, regardless of the presence of POS displays. Additionally, there is no reliable support for the contention that POS display discourages cessation for smokers attempting to quit smoking nor is there support that POS displays will increase smoking initiation among non-smokers. Lastly, while it may be early to measure data from countries that have implemented advertising bans, including POS display bans, data from Iceland suggest that POS displays have no impact on smoking rates.

The literature on the effect of POS display and smoking outcomes does not permit valid and reliable conclusions to be drawn to support a POS display ban. In addition to being methodologically flawed, none of the studies addressing POS displays of cigarettes is designed to allow direct evaluation of the effect of POS display on behavior or to measure the behavioral effects of a ban on POS display.

Assessing the role of POS displays on smoking outcomes by applying the understandings gained from studies in psychology of human learning and attention provides further evidence that a POS display ban will not affect smoking outcomes. The factors that go into the decision to purchase cigarettes are much more complex than merely the presence or location of the cigarettes in a retail store. The concern that cigarette displays positioned near desirable objects, such as confectionary displays, will make cigarettes more desirable or

predispose youth to smoking is unfounded. Purchase decisions are not based on simple learned responses to stimuli, but rather are informed by plans, goals, interests, and experience.

Prepared by

Christine T. Wood, Ph.D.

Exponent Failure Analysis Associates
149 Commonwealth Drive
Menlo Park, CA 94025
U.S.A.

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Exponent
Failure Analysis Associates®

Exponent
149 Commonwealth Drive
Menlo Park, CA 94025

telephone 650-326-9400
facsimile 650-326-8072
www.exponent.com

Christine T. Wood, Ph.D.

Principal Scientist

Professional Profile

Dr. Christine Wood is a Principal Scientist and Director of Exponent's Human Factors practice. She has spent nearly 20 years researching the impact of safety- and health-related information on human behavior and injury reduction. She has applied the area of human information processing, involving aspects of attention, learning, memory, decision-making, and behavioral response, to risk communications. She has investigated and identified factors that influence compliance with warnings and developed a scientific framework for predicting effectiveness. She has evaluated a wide variety of strategies for dissemination of warnings. Her work includes the analysis, evaluation, and development of safety information for many different products, such as consumer products, medical devices and medications, workplace equipment, and motor vehicles. She has also studied and published papers on the historical use of warnings on products in the United States throughout the twentieth century.

Much of Dr. Wood's work focuses on issues related to child safety. She has applied her knowledge of child development to the analysis of accident patterns that are unique to children. As part of her research, she has conducted numerous studies involving the testing of hundreds of children to better understand their capabilities and methods of interacting with products. The results of her studies have been used in the design of products, development of product design standards, and the evaluation of the child resistance of products. She has also studied and analyzed the knowledge of parents regarding child hazards and the strategies they use to reduce child injury.

Dr. Wood has analyzed injury/illness, adverse event, and accident data available from a wide range of sources such as those gathered by government agencies. She has used quantitative analyses to develop and assess the effectiveness of safety information and dissemination methods. She has presented quantitative analyses of accident patterns for individual products to regulatory agencies for consideration in potential product recalls. She has designed and collected data using written questionnaires, interviews, and group discussions.

Prior to joining Exponent, Dr. Wood held research positions with companies RMC Research Corporation, SRA Technologies, Inc., and the Institute for Mathematical Studies in the Social Sciences where she conducted studies in the areas of measuring the effectiveness of education and training programs and developing a federally-mandated evaluation systems for education programs used nationwide.

Academic Credentials and Professional Honors

Ph.D., Experimental Psychology, Stanford University, 1974
B.A., Psychology, Stanford University (with Distinction and Honors), 1971

Publications

Wood CT, Sala JB, Sanders K, Cassidy P. Trends in consumer product warnings found in voluntary standards. Proceedings, 50th Annual Meeting of the Human Factors and Ergonomics Society, Santa Monica, CA, 2006.

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Editorial Boards

- Member of Editorial Board for *Journal of Children's Health*, 2003–2005

Professional Affiliations

- Human Factors and Ergonomics Society (member)
- Society for Risk Analysis (member)
- American Educational Research Association (member)

APPENDIX C

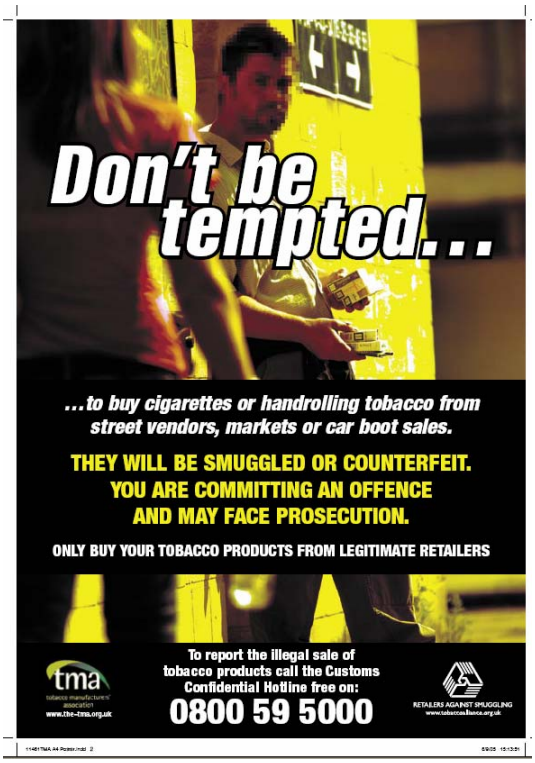
Increasing understanding of the wider risks of smuggled tobacco products

Sample campaign posters from UK public awareness campaigns funded by British American Tobacco along with the other tobacco companies in the UK.

2003: Campaign with HM Revenue & Customs

Campaigns with Retailers against Smuggling via the Tobacco Manufacturers Association

2005



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