

**REPORT ON THE CONSUMER BEHAVIOR AND DECISION-MAKING
OF CIGARETTE SMOKERS**

**Professor Ravi Dhar
George Rogers Clark Professor of Marketing
School of Management
Yale University
New Haven, CT
USA**

**Professor Stephen Nowlis
August A. Busch, Jr. Distinguished Professor of Marketing
Olin School of Business
Washington University
St. Louis, MO
USA**

December 2, 2010

REPORT ON THE CONSUMER BEHAVIOR AND DECISION-MAKING OF CIGARETTE SMOKERS¹

1. INTRODUCTION

Objectives

1.1 We were asked to consider adult consumer behavior and decision making in the context of smoking in light of relevant proposed legislation, specifically the European Commission Health and Consumers Directorate-General (**DG SANCO**) 2010 Public Consultation Document on the Possible Revision of the Tobacco Products Directive 2001/37/EC (the **Consultation Document**). We have specifically been asked to analyze, from an adult consumer behavior and decision making perspective the following proposals included in the Consultation Document:

- (a) with regard to the provision of consumer health information, increasing the size of (pictorial) warnings and the introduction of generic or plain packaging; and
- (b) with regard to access to tobacco products, the introduction of restrictions or bans on tobacco product displays,

(together, *the Proposals*).

1.2 To accomplish this objective, this report examines and develops:

- (a) the reasons why adults smoke;
- (b) the traditional model of consumer behavior and its various limitations with regards to understanding change in behavior based on information about the risks of smoking;
- (c) a preferred framework (over the traditional model), based on current thinking, for analyzing the consumer behavior and decision making process of adult cigarette smokers and how that preferred framework applies to the Proposals;
- (d) the reports and articles supporting the Proposals and their various methodological flaws;
- (e) some potential alternative solutions based on the preferred framework of adult smoking consumer behavior and decision making.

1.3 This report does not consider adolescent smoking behavior or decision-making. It also does not consider issues relating to illicit trade. Further, while we have reviewed the relevant sections of the RAND Europe report which was commissioned by DG SANCO to provide support for assessing the impacts of their policy options (*the RAND Report*), we have not conducted a comprehensive, in-depth

¹ This research was produced at the request of Japan Tobacco International. Any views expressed in this report are the views of the authors.

methodological analysis of all the studies relied on in the RAND Report on those areas. Rather, we provide a general critique of the methods used to conduct much of the research supporting the Proposals, and use a number of studies to illustrate this critique.

Summary of Opinion

1.4 This report concludes that the Proposals will not be effective in reducing adult consumption of tobacco or encouraging quitting because the Proposals are not based on or consistent with a more comprehensive consideration of the way that adult smokers actually make decisions and decide to continue to smoke or to quit. Instead, the Proposals are essentially based on the narrow premise that smoking behavior will be changed by attempting to provide smokers with more, and more salient, information on the health risks of smoking. As the preferred framework for analyzing consumer behavior and decision-making explains, this factor alone is not sufficient to change behavior, because consumers in the EU are already very aware of the risks of smoking. We will present an alternative way of thinking about smoking behavior which will lead to recommendations that we believe will be more effective and which are worthy of consideration by DG SANCO.

The Authors

1.5 This report builds on academic research in consumer psychology, cognitive and social psychology, behavioral economics, and marketing research. The authors of this paper are award-winning marketing professors at leading universities in the United States, and have published a great deal of research on these topics (e.g., Dhar and Nowlis 1999; Dhar, Nowlis, and Sherman 1999; Dhar, Nowlis, and Sherman 2000; Nowlis, Kahn, and Dhar 2002; Nowlis, Dhar, and Simonson 2010; Simonson, Carmon, Dhar, Drolet, and Nowlis 2001).

1.6 Ravi Dhar is the George Rogers Clark Professor of Marketing in the School of Management at Yale University. He is also the Director of the Yale Center for Customer Insights. Several of his publications were considered for research awards such as the Paul E. Green Award (“The Effect of Forced Choice on Choice,” Finalist in 2004) and the William O’Dell Award (“Consumer Choice between Hedonic and Utilitarian Goods,” Winner in 2005 and “Making complementary choices in consumption episodes: Highlighting versus Balancing,” Finalist in 2004 and “The Effect of Forced Choice on Choice,” Finalist in 2008). He is also an Area Editor of Marketing Science, an Associate Editor of Journal of Consumer Research, and an Associate Editor of Journal of Marketing Research, considered among the three best journals in academic marketing. (A copy of Professor Dhar’s cv is attached at Annex A.)

1.7 Stephen M. Nowlis is the August A. Busch, Jr. Distinguished Professor of Marketing in the Olin School of Business at Washington University in St. Louis. His research focuses on consumer behavior, decision making, choice, and consumption. A January 2009 study in the Journal of Marketing found that both he and Ravi Dhar are among the most productive marketing professors in the world in terms of their publications. He is the winner of the 2001 William F. O’Dell Award for an article he published in the Journal of Marketing Research in 1996 that has made the most

significant, long-term contribution to marketing theory, methodology, and/or practice. He is also the winner of the 2001 Early Career Contribution Award from the Society for Consumer Psychology. He has published numerous papers in top-tier marketing journals. He is on the editorial review boards at the Journal of Consumer Research, Journal of Marketing and Marketing Letters, and is an associate editor at the Journal of Marketing Research and the Journal of Consumer Psychology. (A copy of Professor Nowlis's cv is attached at Annex B.)

2. EXECUTIVE SUMMARY

2.1 This report presents a comprehensive framework for analyzing adult consumers' decisions of how much to smoke and whether to continue smoking. Before describing our preferred framework, we first discuss the traditional model of consumer choice and behavior change that appears to be the basis for the Proposals which focus on (1) increasing the size of the (pictorial or other) health warning messages, (2) the introduction of plain packaging, and (3) a ban on in-store product displays. These Proposals are presented as being effective ways to reduce the amount of cigarettes that are smoked and to increase the number of adult smokers who quit smoking. However, we discuss why each of these recommendations is unlikely to be successful. We also propose interventions, which are based on our comprehensive framework and are more likely to be successful.

2.2 The assumed effectiveness of the Proposals is based on a particular model of the way that smokers make choices and the way in which a smoker can be convinced to change his or her behavior (by reducing consumption or quitting), which we refer to as the "traditional model". The assumed effectiveness of the Proposals is also supported by a number of studies on cigarette smoking. In order to evaluate whether the Proposals will be effective, it is important to first examine (1) conceptually whether they are based on an appropriate and valid model of consumer decision-making and choice, and (2) whether the empirical support for the Proposals comes from studies which use an acceptable methodology from which valid conclusions can be drawn.

2.3 The consumer's decision to smoke can be seen as an evaluation of the benefits and costs of smoking. Setting aside the purchase price, a major cost consideration associated with smoking is the health risk.

2.4 The traditional model of consumer decision-making takes an information processing approach to increasing awareness of the costs of smoking and behavioral change - be it the decision to continue to smoke or not smoke, or the decision of how much to smoke. This model assumes that consumers will process health risk messages (whether warnings on packs or otherwise) by going through a specified number of stages: (1) exposure to information, (2) attention to that information, (3) comprehending the information, (4) agreeing or disagreeing with the information, (5) retaining the information, (6) retrieving the information from memory prior to purchase, (7) using the information to decide whether to buy, and if so, which option to buy, and (8) making the actual decision.

2.5 The main insight from the traditional model is that in order to change smoking behavior, it is important to provide the appropriate information (e.g., health risks of

cigarette smoking) and then rational consumers will shift their behavior in accordance with the evaluation of that information. Conversely, if consumers do not shift their behavior in response to such information, they must not be fully informed about the risks of smoking. As a result, the Proposals, which rely on this traditional model, have focused on providing more of this information or increasing the attention that consumers will hopefully pay towards such messages – through larger, and more graphic, health warning messages and through plain packaging which is said to make the warnings more prominent.

2.6 It is important to note that the adult EU smoker is in fact already very aware of the health risks of smoking (and yet continues to smoke). Because the focus of the Proposals is on tactics attempting to increase the already very high awareness of the risks of smoking, they are unlikely to be successful in changing behavior. Moreover, the traditional model fails to take account of several key characteristics or issues that influence the way an adult consumer makes decisions and acts on information about risks. Instead, the preferred framework recommends a shift to a focus on tactics that would influence the weighting of the smoking risks and a consideration of other factors that are more likely to result in actual changes in smoking behavior.

2.7 We develop an improved framework for analyzing smoking behavior that utilizes more recent thinking about consumer behavior. This framework examines the influence of (1) habits, (2) consumer goals and motives, (3) peers, (4) consumer mindsets, and (5) self-control issues on the decision to continue smoking. For example, research on peer influences notes that one of the most powerful determinants of how consumers behave in a particular situation is how they think similar others behave in that situation, yet when you ask consumers about their behavior, this is one of the last causes they mention. These issues are important to consider because much research shows that they have a powerful influence on actual consumer behavior. Yet, the Proposals are not based on and are not consistent with a consideration of these factors. A better understanding of these factors will help to design better communications or interventions that can disrupt existing patterns or highlight goals that are more likely to reduce smoking behavior.

2.8 Strategies aimed at reducing smoking or encouraging quitting need to understand people's assessments of risks that extend over time and that are based on repeated behaviors. While the awareness of risk is a common factor, the tradeoffs and the weighting of the risks and benefits are influenced by (1) the moment in which they are made, (2) whether the costs are considered singly or cumulatively, (3) the discount rate for the individual, and (4) the degree of optimism bias for that individual. For example, one of the most consistent findings in behavioral research is that people are generally overly optimistic about their future. As a result, the Proposals, which focus mainly on providing more information about the risks of smoking, are not likely to be effective since they do not take into account the many factors which are more likely to influence risk assessment and the subsequent actual behavior.

2.9 Many prior studies on the effect of changes in packaging and in-store displays on smoking behavior are seriously flawed because they have relied on a methodology that is not able to yield accurate insights into what truly motivates smokers to reduce or stop smoking. Many of these prior studies are flawed due to (1) demand artifacts,

which result in responses that are likely not what the consumer actually believes but are instead what the consumer thinks is the appropriate response, (2) the assumption that consumers are able to predict what will influence their, or others' behavior, when in fact much research shows that consumers are not able to accurately do this, and (3) survey questions which are asked when consumers are not in the same mindset as they are when they are craving a cigarette or are currently smoking. However, some prior research has used a longitudinal methodology that can allow for more valid conclusions to be drawn, and these studies show that the Proposals are unlikely to be effective. Furthermore, prior research has found that smokers do experience cravings, but this tends to be at work or at home, and this craving is internally driven rather than induced externally by in-store displays.

2.10 By applying our preferred framework, we are able to generate different ways to communicate the risks or costs of smoking that are more likely to result in behavior change. Specifically, it makes sense to develop messages about the risks or costs of smoking which are more persuasive, which take into account the way the consumer makes decisions, and which prompt the smoker to reassess the weight of the known risks or costs, so that consumers are more likely to act on these messages.

2.11 In sum, the Proposals are not likely to be effective means to reduce adult smoking or encourage adult quitting. Support for the Proposals is based on the traditional view of the consumer, which we now know is incomplete, and on many studies which used a flawed methodology. The Proposals essentially suggest that the best way to persuade consumers to reduce smoking is to increase awareness by offering more information or more prominent information. However, consumers are already very aware of the risks of smoking. Thus, what is needed is an understanding of additional factors that drive adult smoking behavior. We have provided a preferred, more comprehensive framework for better understanding such behavior. This framework, which is based on a great deal of recent research, is able to produce recommendations that are more likely to actually change smoking behavior, because the framework recognizes many additional factors that influence the decision to continue smoking.

3. WHY ADULTS SMOKE

3.1 Before considering the traditional decision making model and the preferred framework for adult smoking consumer behavior, it is necessary to first understand the reasons why adults smoke. This is key to understanding the limitations of the traditional model of consumer behavior in the context of smoking and the Proposals put forward by DG SANCO. This section focuses on the reasons why adult consumers smoke, how the factors influencing the decision change over time and because of individual circumstances, and the different types of smoking-related decisions.

3.2 At their most basic, most theories of decision making assume that the person considers the costs and benefits associated with an activity. Setting aside the purchase price, a major cost consideration associated with smoking is the health risks. Smoking is associated with several costs but also with certain perceived benefits to the smoker. Adults smoke for a wide variety of reasons, regardless of whether objective appraisers

consider such benefits to be worthwhile from their perspective. The benefits of smoking center on the enjoyment and pleasure derived from smoking, together with the comfort and the relief from stress and anxiety that smoking is thought to provide (Australian Government Department of Health and Ageing 2008). Some smokers also mention smoking as an aid to social intercourse and as a companion product to the use of alcohol or coffee (Australian Government Department of Health and Ageing 2008). Among the major reasons given for smoking are the following (see Piper et al. 2004):

- (i) **Affiliative attachment:** This is characterized by a strong emotional attachment to smoking and cigarettes, such as “Cigarettes keep me [the smoker] company, like a good friend.”
- (ii) **Habit:** This is characterized by smoking as a habitual behavior. Some commentators say that this behavior could be characterized as an addiction. We are not expert in any distinction between habit and addiction.
- (iii) **Cognitive enhancement:** This is characterized by smoking to improve cognitive functioning.
- (iv) **Craving:** This is characterized by smoking in response to cravings and / or urges to smoke.
- (v) **Social-environmental goals:** This is characterized by smoking due to social stimuli or contexts that invite smoking.
- (vi) **Taste and sensory properties:** This is characterized by the desire or tendency to smoke in order to experience the orosensory and/or gustatory pleasure from smoking.
- (vii) **Weight control:** This is characterized by the use of cigarettes to control appetite.

3.3 Research has indicated that the existence and/or strength of these motives tends to change over the course of the smoker’s life. For example, young adult smokers in the early stages of regular smoking tend to rate social motives and contextual factors as more important, while older regular smokers tend to rate control over negative moods, ability to fulfill urges, and the fact that smoking has become habitual, as more important (Baker, Brandon, and Chassin 2004). However, while general patterns of smoking have been identified, it should be noted that different segments of the population can behave in unique ways. In addition, there are many other specific events that can influence whether someone decides to either reduce smoking or quit. For instance, someone could experience added stress in his or her life, due to influences such as losing a job or moving, and thus decide to smoke more or continue smoking as a means of reducing that stress.

4. THE TRADITIONAL MODEL OF ADULT CONSUMER BEHAVIOR AND THE DECISION MAKING PROCESS AND ITS LIMITATIONS

Overview

4.1 This section of the report considers:

- (a) the traditional model of consumer choice and behavior change which appears to provide the underlying conceptual support for the Proposals;
- (b) the limitations of this traditional model in the context of smoking in facilitating behavior change; and
- (c) common decision heuristics used by consumers in the weighting of risks and benefits in the context of risky activities such as smoking.

4.2 An analysis of consumer behavior needs to begin with a clear focus on the particular decision that is being made by the adult smoker (i.e., the decision to continue smoking, the choice of which brand to smoke, the decision of how much to smoke, the decision to reduce smoking, or the decision to quit smoking). This report focuses on proposed ways to reduce cigarette consumption and to encourage quitting. Thus, while smokers make choices about which brand to smoke and many marketing actions such as in-store displays and other types of promotions are focused on and will affect brand differentiation, the focus here is on consumer decision processes that influence consumption quantity and the decision to continue smoking.

The traditional model of consumer behavior

4.3 This section discusses what we will refer to as the “traditional” model of how consumers make decisions and what influences those decisions. We do this because the Proposals and their supporting materials are conceptually based on this traditional model. We show that a focus on this model will lead to recommendations that emphasize providing more information on health risks. Yet, we find that such an approach is not sufficient, since consumers are already very aware of the risks of smoking and since such a model ignores many other important factors that influence behavior and the decision to continue smoking.

4.4 In traditional models of consumer choice, the choice process can be broken down into five stages (e.g., Kotler and Keller 2009): (1) problem recognition – the consumer recognizes a problem or a need that is triggered by internal or external cues; (2) information search – the consumer searches for, or is exposed to, information that is relevant to the purchase decision; (3) evaluation of alternatives – the consumer evaluates the different brands on the market that could fulfill his or her need; (4) purchase decision – the consumer chooses which of the available options to buy; (5) post-purchase evaluation – the consumer decides how satisfied he or she was with the purchase. The model is typically applied to the choice of a specific brand. For example, a consumer may be more or less interested in buying a pack of cigarettes depending on its price, availability, product characteristics, and how or whether it has been promoted.

4.5 The focus of this report and indeed the Proposals is not on brand choice but on two other decisions faced by the adult smoker – the decision to continue to smoke and the decision on how much to smoke or whether to quit. In such decisions, consumers are seen as weighing the information on the costs and benefits of alternative actions (e.g., smoking more versus less, smoking vs. not smoking) and their choices reveal implicitly the tradeoffs that are made.

4.6 In examining adult consumer smoking behavior and decision-making, it is important to understand the role of risk awareness and individual consumers' assessment or weighting of these risks. Adults in 2010 in the developed world understand that smoking gives rise to serious health risks and potentially reduced life expectancy (which we will discuss in more detail below). Thus, awareness of the serious risks of smoking is effectively a constant in the decision-making process. An individual's decision framework incorporates and evaluates the risk against the perceived benefits. In essence, given this framework, more information on risk awareness will not increase the adult's risk awareness or, importantly, alter the balance between costs and benefits to affect the decision to purchase or continue smoking. Rather, the focus should be on understanding the factors that vary the weighting of the costs (including the known health risks) and benefits of smoking and use this knowledge to encourage a reduction in smoking quantity as well as increased quitting. Because the availability of such information is already at very high levels, and consumers are well informed of the health risks, other factors are more likely to be effective in impacting the relative costs and benefits and reducing smoking uptake or quitting.

4.7 Traditional models of consumer choice such as the one described above at paragraph 4.4 take an information processing approach to what underlies the decision to change behavior, be it the decision to smoke or not smoke or how much to smoke. In relation to step (3) of that model (evaluation of alternatives) when applied in terms of the risks, it is necessary to consider that in a typical model of behavior change (e.g., Shimp 2007), consumers are said to process and respond to messages by going through a specified number of stages: (1) exposure to information, (2) attention to that information, (3) comprehending the information, (4) agreeing or disagreeing with the information, (5) retaining the information, (6) retrieving the information from memory prior to purchase, (7) using the information to decide whether to buy, and if so, which option to buy, and (8) making the actual decision. Similarly, the RAND report describes five different stages that may lead to a change in smoking behavior due to health warning labels: (1) attention – whether or not a warning label is noticed, (2) reading/comprehension – whether the warning is understood, (3) recall – whether the message is recalled later at the point of purchase, (4) judgment – the degree to which the consumer judges cigarette smoking to be dangerous, and (5) behavior compliance – if a consumer decides to change his or her behavior with regards to smoking.

4.8 The main insight from the more limited traditional model is that in order to change smoking behavior, it is important to provide the appropriate information (e.g., risks of cigarette smoking) and then rational and informed consumers will simply shift their behavior in accordance with the evaluation of that information. Conversely, if consumers do not shift their behavior in response to such information, they must not

be informed or fully understand the high costs of smoking. This view of smokers, however, is a simplistic view of consumer behavior that does not take into account how consumers combine emotions and reasons in order to make choices. It also does not consider that smoking offers certain benefits to the smoker (as mentioned in section 3 of this report), including increased pleasure and better control over negative moods that may be especially valued at the time of consumption rather than at the time of purchase.

4.9 The Proposals focus on the earlier stages of the traditional model of changing behavior under the assumption that if consumers become more informed about the health risks of smoking, they will incorporate these risks into their decisions, and then be more likely to either smoke less or to quit. As a result, the Proposals have focused on increasing the attention that consumers will hopefully pay toward health warning messages – through larger, and more graphic, health warning messages and through plain packaging which is supposed to make the warnings more prominent.

4.10 However, it is very important to note that consumers are in fact already very aware of the health risks of smoking (and yet continue to smoke). For example, a Canadian study found that 100% of smokers, and 90% of the general population, are aware of health warning messages on cigarette packages (Environics, wave 5, p. 30). Consumers also understand that smoking is a risky and unhealthy activity and are able to understand messages that discuss the risks of smoking. For example, the same Canadian study found that consumers are well aware that smoking causes all sorts of health problems, including various forms of cancer, emphysema, asthma, premature death, etc., and are well aware of the dangers of second-hand smoke (Environics, wave 5, p. 13). In addition, a Gallup Survey conducted in the USA in 2002 charts agreement among Americans with the question “Is smoking harmful?” The number of Americans agreeing with this question rose from 60% in 1949 to about 90% in 1981 to about 95% from 1990 onwards (“Tobacco and Smoking”, Gallup, 15 August 2002) (<http://www.gallup.com/poll/9910/tobacco-smoking.aspx>). It is very rare that any survey would produce results at this very high level of awareness. Certainly any survey is unlikely to report 100% awareness due in part to study design issues and limitations in the way the questions are asked and the propensity for some respondents to answer “Do not know”. Thus, such high levels of awareness effectively mean that all of the relevant population is aware. Also, a Gallup survey conducted in the USA in July 2010 notes that 81% of American adults agree with the statement that smoking is “very harmful” and that the percentage who agree with the statement that smoking is “somewhat harmful” is a further 15% (“Tobacco and Smoking”, Gallup, July 2010) (<http://www.gallup.com/poll/109129/most-americans-consider-smoking-very-harmful.aspx>). Taking into account the ambiguity of an individual’s distinction between “somewhat” and “very” harmful, the upshot is that virtually the whole adult smoking population is aware of the harm. Furthermore, a European study (Li et al. 2010) “indicates that 95% of women in Europe know that smoking causes lung cancer, and another study of university students (The International Health and Behavior Study; Steptoe et al. 2002) found that 97% of European men and 99% of European women believe in the association between smoking and lung cancer.

4.11 In sum, the Proposals focus on the stages of the decision in the traditional model of consumer choice and behavior change that are least likely to result in actual

changes in smoking behavior. In other words, the focus of the Proposals is on tactics attempting to increase the already very high levels of *awareness* of the risks of smoking rather than focusing on tactics that influence the *weighting* of these risks or the weighting of other factors that affect the decision-making process. This traditional model of how consumers weigh the costs (including the health risks) and benefits of smoking may be excessively cognitive and ignore other factors, which we review more extensively below. Consequently, it will be less effective since it concentrates on factors such as conveying information that is already known and understood, into the decision to smoke. However, applying the preferred framework of consumer behavior that we discuss later can lead to more effective insights into what really drives smoking behavior and ways to reduce smoking consumption and increase quitting. This preferred framework also recognizes that consumers are impacted by additional cognitive and motivational influences (and may be subject to habits or a lack of self-control), and will not quit or reduce smoking simply because they receive more information about the health risks of smoking.

Weighting of Risk and Benefits

4.12 As stated above, the traditional model of consumer behavior assumes that awareness and information on risk will be sufficient to shift behavior in a manner that adequately weights that risk. However, our understanding of how consumers make these tradeoffs has rapidly evolved, so that it is important for any recommendations to be based on our current understanding. Yet, the Proposals do not take into consideration the ways that smokers actually tradeoff the costs and benefits of smoking.

4.13 Smoking is, like many other every day consumer actions, an activity that involves risk, albeit smoking is known to carry higher risks. Thus, we continue by looking at traditional models of decision-making where an element of risk is involved. The definition of rational behavior in decisions under risk has been largely unchanged for half a century. Expected Utility Theory (von Neumann and Morgenstern 1947) lays out the idea that individuals should consider the utility of all consequences, now and in the future, that will occur as a result of choosing any particular option. These utilities should be weighted by the probability of their occurrence, and discounted to the extent they are not immediate. Then the option with the greatest total expected utility should be chosen. However, in the last few decades, research has documented a variety of ways in which actual decision making deviates from this normative ideal (e.g. Kahneman and Tversky 1979). Thus, the traditional model is now no longer readily accepted. It is deficient with regard to these risky decisions because it does not take into account additional factors that clearly affect adult decision-making. These additional factors need to be considered in order to fully understand adult decisions and will be considered in the decision making framework with regard to smoking which we develop in Section 5.

4.14 Indeed, understanding and incorporating these risks is particularly difficult to accomplish in the context of smoking (or other activities with delayed costs) because many potential costs of cigarette smoking are cumulative, occur far in the future for most smokers and do not materialize in all instances, whereas most benefits of smoking are immediate and certain. This requires a consideration of discount rates for

future potential costs to be balanced against the immediate, but more certain, benefits to the smoker. Many studies of choices involving tradeoffs over time lead to several conclusions described below. In considering the adult decision to smoke and framework for consumer smoking behavior and decision-making, it is necessary to consider these factors in order to fully understand how risks are dealt with in the decision making process.

4.15 First, many people seem to discount the future excessively (Frederick, Loewenstein and O'Donoghue 2002). Because smoking has negative consequences for health that extend across time, many scholars consider it appropriate that future consequences be given less weight or "discounted" relative to more immediate consequences. While time discounting is used to reflect the common assumption that people care less about future utility than current utility, the exact magnitude of discount rates is likely to vary across individuals (Frederick 2006). For example, purchases of home appliances showed discount rates ranging from around 20% to 300% annually (Hausman 1978; Ruderman, Levine and McMahon 1987; Gately 1980). Thus, the concern for future health while making a choice to smoke / smoke more can be understood as implying these people care less about their future welfare.

4.16 Second, individuals are often tempted when the benefits are immediate, leading to the well-known phenomenon of intertemporal preference reversals. In these situations, people choosing between two future rewards are generally willing to wait a little longer for the better reward, but as the time of the lesser reward approaches people switch preferences and prefer the immediate lesser reward over the delayed greater reward (Frederick, Loewenstein, and O'Donoghue 2002). For example, Kirby and Herrnstein (1995) offered participants a smaller, more immediate, reward versus a larger, delayed reward (e.g. less money or a cheaper music player in 2 days versus more money or a better music player in 10 days) and elicited choices at various time horizons (2 versus 10 days switched to immediate versus 8 days). People were found to often show reversals of their preferences as the rewards became imminent – switching from the larger reward to the smaller reward when the smaller reward could be realized with little delay. If we apply this research to smoking behavior, this means that the tradeoffs between the costs and benefits of smoking may be assessed differently when smokers are about to smoke in comparison to situations where they are thinking about smoking in the future. In particular, the discounting of future risks is especially strong at the moment of smoking. For example, when thinking about smoking as an intertemporal trade off between immediate pleasure and long term risk, the two tendencies described above would suggest that smokers are likely to underweight the future risks more at the moment they choose to smoke, and that their preferences at other times might weight these risks more heavily.²

4.17 Third, one of the most consistent findings in behavioral research is that people are generally optimistic about their future. This tendency has also been found in perceptions of smoking related risks. For example, while over-estimating the risk of smoking generally across the population (Viscusi 1996, 2002), smokers think that risks associated with smoking apply more to others than to themselves (Weinstein

² As discussed in 6.10-6.11, this may also affect the accuracy and validity of studies which ask smokers to assess or predict behaviour in a survey.

1998). The challenge for risk communication then is not only to persuade people to think about risks that are in the distant future, but also to communicate how these risks apply to them personally. Research shows that individuals are willing to indulge in immediate pleasures that carry long-term costs in part because they believe that in the future they will be able to modify their behavior and resist temptation early enough to avoid the realization of the risk (Khan and Dhar 2007). For example, many people who smoke may believe they will have an easier time quitting than other smokers and believe that they will quit before they actually do (Weinstein, Slovic and Gibson 2004).

4.18 Fourth, the assessment of risk can be based on feelings of risk that differ from cognitive evaluations of risk (Loewenstein et al. 2001). According to this research, people's assessment of the risk depends on a variety of factors that do not depend only on the objective features of the risky situation.

4.19 Furthermore, smoking can be considered a risky choice where the cost of yielding to each risk (smoking on a single occasion) is small, yet the negative consequences of repeatedly smoking are relatively quite large. This type of tradeoff is subject to the "adding up effect", where the costs of consumption are underweighted in part because the cost on each occasion is relatively trivial. For example, the small risk from smoking a single cigarette is easy to ignore while the risk from the thousands of cigarettes that a pack-a-day smoker would consume over 20 years is much more likely to influence the decision to smoke.

4.20 Several studies have demonstrated that people take risks when the costs are very small, but shun similar risks when the stakes get larger. For example, many people prefer a 10% chance at \$10 over \$1 for sure, but also prefer \$100 for sure over a 10% chance at \$1000 (Markowitz 1952). Similar dynamics explain consumers' willingness to pay very high costs, such as renting one week at a time various home electronics (e.g. paying \$25 per week to rent a stereo, Swagler and Wheeler 1989), rather than buying the product for a relatively lower price when considering its lifetime use. In all these adding up effects, the key to underweighting the costs is considering those costs in isolation (i.e. cigarette by cigarette or pack by pack) rather than the accumulated costs of a repeated decision.

4.21 What the above factors show is that the traditional model of consumer behavior with respect to risk: (i) is incomplete and deficient when dealing with risky activities such as smoking; (ii) does not take into account the fact that risk awareness is already present at a very high level and is not affected in a way that affects behavioral change by the provision of more information; and (iii) does not reflect how decisions are made in the context of smoking by adult consumers. However as will be seen below, it is possible to prompt a reassessment of the decision involving risks in which differing weights may be applied to the relevant factors if either (i) new events occur (ii) new contexts occur; or (iii) an intervention based on the characteristics set out at 4.15 - 4.20 above prompts a reassessment based on the decision making inputs.

4.22 The changing assessment of the costs and benefits of smoking is determined also in accordance with the particular circumstances of individual smokers. This clearly differs from individual to individual as well as over time. Different importance

weights will be attributed to different variables forming part of the decision framework and will produce different behavioral outcomes (e.g. smoking less, smoking more, quitting smoking, taking up smoking again). For example, a life-changing event such as being diagnosed with a specific health problem or the birth of a child might alter the weight assigned to the risks of smoking (though the level of available information with regard to the health risks is unchanged). Further, different factors that influence the costs and benefits of smoking may change in importance due to environmental cues in the consumption context and over the course of an individual's lifetime even when the level of awareness as to the risks of smoking effectively remains constant. As we will discuss below, these costs and benefits are capable of being given more or less weight in the process, which occurs irrespective of whether more information is provided on, for example, health risks, but rather due to changes in consumers' values or objectives.

4.23 In sum, the consideration of the risks and benefits of smoking requires making tradeoffs. Adult consumers in 2010 in the EU are well aware of the serious and life threatening risks of smoking. While the awareness of risk is a common factor, the tradeoffs and the weighting of the risks and benefits are influenced by the moment in which they are made, whether these risks are considered singly or cumulatively, the discount rate for the individual, and the degree of optimism bias for that individual. Therefore, any planned interventions to affect decision making and consumer behavior should take account of and be consistent with such decision making factors.

5. THE PREFERRED FRAMEWORK FOR ANALYZING CONSUMER SMOKING BEHAVIOR AND DECISION MAKING

5.1 This section of the report develops a preferred framework for adult consumer behavior and decision making with respect to smoking, incorporating the factors referred to in 4.15 – 4.21 above. It includes a consideration of:

- (a) the factors which play a role in the adult's decision to continue smoking, reduce consumption, or quit smoking which involves an analysis of the health risks, costs and benefits to the individual and how knowledge of those health risks is considered in that process;
- (b) how and why the weight of risk factors that influence smoking change, after taking into account the already high levels of awareness of the risks of smoking.

5.2 Applying the more updated approach to consumer decision-making and behavior (as opposed to the traditional model) described above, we next present an improved way to think about how to reduce cigarette consumption and encourage quitting. As mentioned earlier, the traditional model of consumer decision making and consumer response to messages assumes to some extent that the consumer is making a decision about smoking and the amount consumed in the same manner as a computer would – carefully and consistently weighing the information about the health risks and making tradeoffs between the risks and benefits, using appropriate self-control, and ultimately either continuing to smoke or not. However, based on research in behavioral decision theory during the last two decades, this type of decision process is not as likely to yield useful information when applied to a situation

like smoking, which involves issues of self-control, habits or addiction, potentially risky behavior, and strong emotions. Furthermore, as the authors of this paper pointed out (Simonson et al. 2001), research on consumer behavior is evolving from a model of consumer behavior which focuses on “cold” cognitive thinking to one that encompasses more “hot” emotional types of decisions, such as self-control and other motivational considerations on whether or not to quit smoking. Thus, this improved way of examining consumer behavior is particularly useful for studying smoking behavior, which involves “hot” elements. Our framework for analyzing smoking behavior, which we next present, utilizes this improved thinking about consumer behavior to propose more effective ways to encourage consumers to quit smoking or reduce the number of cigarettes that are smoked.

5.3 This framework examines the influence of habits, consumer goals and motives, peers, mindsets, and self-control on the decision to continue smoking which are discussed below. These issues are important to consider, because much research shows that they have a powerful influence on actual consumer behavior. Yet, the Proposals are not based on and are not consistent with a consideration of these factors.

Habitual Behavior

5.4 The decision to smoke for many regular smokers is habitual or characterized by sequences that repeat at particular times. Habits are formed as they encode certain context-response patterns in memory. Social and personality psychologists attribute this tendency to repeat actions to people’s goals, intentions, and other dispositions that lead them to value, and hence to pursue repeatedly, particular outcomes in particular contexts (Wood and Neal, 2007). Once formed, the habitual response can be triggered by cues in the consumption context (e.g., coffee for a smoker). Because habits build over time, a lack of change in behavior will not reflect a lack of awareness of information but instead a reluctance to change because of the pleasures and motivations that prompted the behavior in the first place and/or because the change can be difficult to accomplish.

5.5 Many repeated behaviors are cued automatically by everyday environments, even though people might think they are carefully considering tradeoffs involved in choice. For example, studies demonstrate that people repeat well-practiced actions regardless of whether they expressed an interest or desire to do so. For example, people with a habit to purchase fast food at a particular place tend to keep doing so, even if their goals change and they no longer wish to do so. This consumption can even be so habitual as to be insensitive to the consumption experience. In one study (Neal et al 2009), habitual and non-habitual popcorn eaters were given either fresh or stale popcorn to eat while watching a movie. While both groups liked the stale popcorn less than the fresh popcorn, the habitual eaters ate just as much when given the stale popcorn, while non-habitual eaters ate much less of the stale popcorn. This is important to consider because, as we will discuss later, an important motive for smoking is that it is a habit. Whereas temptations are said to trigger responses by activating visceral responses such as hunger, thirst, or cravings, habits tend to be more repetitive and without prolonged analytical deliberation. Consumers are more likely to act habitually when they are under time pressure, distracted, or when their self-control resources are limited (Wood and Neal 2009) and it is at these times that people

who are seeking to quit a habit such as smoking are most vulnerable, irrespective of the knowledge of the risks from repeating the habit.

5.6 Research on habits finds that one way for consumers to inhibit their habits is for them to carefully monitor their behavior at the points of consumption (Quinn et al. 2010). According to the Australian Government study (Grps 2008), there was widespread agreement on what triggers smoking. The key triggers that were mentioned included: when consuming alcohol, coffee, or after eating; when socializing in general, particularly with other smokers; some working environments; when bored, at a loose end, or stressed; and peer influences. Because in such trigger situations a regular smoker may reach for a cigarette, a consumer who smokes habitually but expresses a desire to quit should carefully monitor this habit so that he or she avoids such situations that are integral to the habit. Removal of contextual cues and active generation of alternative behavioral responses are often effective ways to change habits.

5.7 We are aware that some experts state that this repetitive behavior is strongly compelled and should be considered an addiction. While we are not expert on the issues of distinctions between habits and addictions, it is clear that even if this is the case for some people, it would be even more important to design interventions based on the preferred framework which are more likely to successfully change behavior rather than simply attempting to provide health risk information or increasing attention to that information.

Consumer Goals and Motives

5.8 Most consumer behavior is goal directed. Goals are seen as providing a direction and motivation to act (Fishbach and Dhar 2008). Goal-directed behavior refers to goals held by the individual (e.g., to reduce smoking) and are determined by personal and situational variables that vary across each individual and the decision environment. When a goal, such as being healthy, is active, consumers are more likely to pursue choices that are consistent with this goal. Thus, goals are seen as providing a direction and motivation to act. It is important to note that goals can be assigned by others (e.g., doctor's orders or a partner's request to cut back or quit smoking) or can be set by people for themselves (e.g., a new year's resolution to quit smoking). Because smoking has some perceived benefits in the short term, the desirability of the goal to smoke may differ in the short term and the long term, which results in some people choosing to smoke over not smoking. Goal setting also depends on the feasibility of the goals – people's belief that goal-directed behaviors will lead to the desired outcomes. Thus, any assessment of the decision to reduce or quit smoking by regular smokers needs to incorporate how assessments of feasibility and desirability of a potential goal are made and to help people understand that they can either reduce their consumption of cigarettes or quit smoking.

5.9 While people have a large number of goals that they pursue, only a small number of these goals are active at any particular moment. The notion that activated goals influence the value of related alternatives was originally presented in Kurt Lewin's (1935) seminal work on self-regulation. According to Lewin, goals change the affective experience of alternatives that are related to their attainment. These early

insights were supported by modern goal research, which shows that the manner in which people evaluate choice alternatives depends on their underlying goals. For example, when a goal becomes active it influences an individual's preferences and valuations, making means to achieve the active goal temporarily more valuable and the means to achieve non-active goals less valuable (Markman and Brendl 2000). For example, when the goal to smoke becomes active because the person wants to have a relaxing time and smoking is seen as a means to relax, individuals have a higher value for smoking related items and a lower value for smoking unrelated items. Thus, the assessment of the benefit associated with smoking will be higher or lower depending on whether or not goals associated with smoking are activated. The smoker does have competing goals but these are attributed less value at that particular time.

5.10 Even if consumers have a goal to lose weight, work hard, or smoke less, they often have a difficult time achieving goals that they might set due to competing goals or desires. In addition, goals can be framed with a positive or a negative focus. According to some research, it will be easier for consumers to pursue a goal when the consumer thinks of the goal more as a desire to reach a favorable end-state than as a desire to avoid a negative end-state (Rothman 2000). Thus, this research suggests that communications to influence behavioral change may be more effective if they focus on positive end-states (e.g., not smoking leads to a better social life or benefits). Similarly, goals that are concrete are more motivating than goals that are abstract (e.g., lose 5 pounds vs. lose weight).

Peer Influences

5.11 One of the most powerful determinants of how consumers behave in a particular situation is how they think similar others behave in that situation, yet when you ask consumers about their behavior, this is one of the last causes they mention (e.g. Nolan et al. 2008). The weights assigned to costs and benefits in assessing tradeoffs may be susceptible to peer influence. Recent research has examined the effects of manipulating beliefs about what other people do in a particular situation in a variety of contexts. For example, a recent study that provided community members with an appeal to conserve energy compared appeals based on helping the environment, benefiting society, saving money and how common conservation efforts were in the local neighborhood. Interviews with participants revealed that the last appeal (what others do) was predicted to be the least likely to change behavior, yet examination of participants' actual electricity meters revealed that it was in fact the most effective at reducing energy consumption (Nolan et al 2008). The power of peer influence has also been used to increase curbside recycling (Schultz 1999), increase conservation in hotels (Goldstein, Cialdini and Griskevicius 2008), and reduce littering (Cialdini, Reno and Kallgren 1990). In a similar vein, peer influence or observation of peer behavior can alter the importance of immediate benefits vs. the delayed costs in making the decision to smoke.

5.12 Research on peer influence has demonstrated that it is not just important to know how others behave in a particular situation, but it is also important to know who those others are. When individuals are doing something in part to define who they are, they are less likely to engage in that behavior when others who are not part of the valued social group begin to engage in that behavior (Berger and Heath 2007). For all

smokers, communication based on peer influence could be a powerful influence, but these messages could be particularly potent for younger adult smokers, who are likely to smoke in part to define who they are. For such a group, information about the prevalence of smoking both in general and in relation to particular groups can have a disproportionate effect on their behavior. Learning that a desirable group has a low incidence of smokers or learning that an undesirable group has a high incidence of smokers can drive younger adult smokers' behavior, and certainly more than further information about health risks.

Role of Consumer Mindsets

5.13 Recent research has found that consumers can look at the same information very differently depending on whether it is imminent or in the more distant future. According to Construal Level Theory (CLT), when a consumer is thinking about an activity in the distant future, the more abstract properties of that activity, such as why they are engaging in it, gains importance. However, when a consumer is thinking about an activity in the near future, the more concrete properties of that activity, such as how they can engage in it, gains importance (Trope and Liberman 2003, 2010). These researchers show that temporal distance systematically changes people's mental representations of future events and that these changes determine, at least in part, changes in the value of those events. It is important to note that the construal process may apply not only to temporal changes in value but also to temporal changes in reasoning, planning, and predictions regarding the future.

5.14 The above theoretical account suggests why the weighting of the risks and benefits associated with smoking may vary depending upon the temporal distance from smoking. Specifically, the subjective value people assign to events reflects the construals of these events. If higher level construals are used for the more distant-future events, then the value of high-level construals would be more pronounced in the more distant future, whereas the value of low-level construals would be more pronounced in the more proximal future (Dhar and Kim 2007). Hence, when the value associated with a low-level construal of smoking is more positive than that associated with a high-level construal of smoking, the desire to or allure of smoking should increase with temporal proximity.

5.15 For example, when thinking about smoking in the immediate future, individuals will focus on concrete features of the experience, such as the momentary pleasure they expect, what kind of cigarette they will smoke, where they will smoke, how they will feel, and even how they will light it. However, when considering the same behavior in the distant future, individuals are likely to focus on the more abstract aspects of the experience, including what it means to be a smoker, what the long-term effects of smoking will be, and why they have decided to smoke. This variation in mindset brings along with it substantial variation in preferences and in willingness to attend to certain types of information. For example, tradeoffs between momentary pleasure and long-term health will be made very differently when in a concrete mindset, where momentary pleasure will receive relatively more weight compared to an abstract mindset where long-term health will receive relatively more weight. As will be seen in the section below which examines the methodological difficulties of

the evidence relied on in making the Proposals, these factors are not accounted for in the survey evidence relied upon to support the proposals.

Self-Control and The Resolution of Tempting Tradeoffs

5.16 A major reason why consumers engage in certain behaviors even if they report seeing them as less desirable, is their difficulty in exercising self-control. Thus, people eat too many cookies, watch too much TV, and exercise too little. Research on self-control has considered many consumer decisions that involve an intertemporal aspect – decisions with consequences that play out over time (e.g., Berns, Laibson, and Loewenstein 2007). For example, decisions involving whether to save, consume unhealthy food, or avoid contraceptives during sex involve a tradeoff between what will happen today and the consequences that this will have for the future. This research finds that in general, people tend to discount future consequences, and instead focus more on the immediate results of an action. Thus, some smokers may yield to the temptation and immediate benefits from smoking because they do not exercise sufficient will power.

5.17 More recent research has shown that the ability to exert self-control varies across time. This research substantiates a model of self-control based on a limited pool of resources that gets depleted by any act of self-regulation. For example, resisting a temptation can temporarily deplete one's self control resources, leading to poorer performance on an unrelated subsequent self-control task (Muraven and Baumeister 2000). This limited resource model predicts that individuals will be unable to maintain a uniform level of self-control even when they form intentions to exert self control in particular situations (e.g. not smoking when they are out with friends). The prescription from this research is to avoid tempting situations when you have recently exerted self-control and therefore temporarily depleted your self regulatory resources. This is a difficult prescription to follow, since many tasks can deplete this resource, including resisting temptation (Baumeister et al 1998), making choices (Wang, Novemsky, Dhar, and Baumeister 2010), controlling one's emotional reactions (Muraven, Tice and Baumeister 1998), persisting at a difficult or unpleasant task (Vohs et al 2006), and any other activity that requires one to override intuitive or impulsive tendencies (Schmeichel 2007). This might explain why many people find it difficult to reduce consumption or quit when in stressful situations.

Application of the Framework to the Proposals

5.18 In light of the above, there are a number of different factors that impact behavior and should be considered in order to obtain deeper insights into how smokers assess the costs and benefits of consumption in response to particular circumstances as well as over time. These factors, while rooted in psychology, are now actively considered by behavioral economists. In particular, the economists Richard Thaler and Sendhil Mullainathan (2000) describe the emerging field of behavioral economics: "Economics traditionally conceptualizes a world populated by calculating, unemotional maximizers that have been dubbed *Homo economicus*. The standard economic framework ignores or rules out virtually all the behavior studied by cognitive and social psychologists. This 'unbehavioral' economic agent was once defended on numerous grounds: some claimed that the model was 'right'; most others

simply argued that the standard model was easier to formalize and practically more relevant.” The framework that we propose above relaxes the strict assumptions of how tradeoffs are made to better mimic the actual decision environment in order to produce proposals that are likely to affect the decision making process and that affect behavior, unlike the Proposals based on the traditional model.

5.19 Many of these factors are not considered in the traditional model of consumer behavior that we discussed earlier, yet they will have a large impact on choices that people make by shifting the weights assigned to the costs and benefits of smoking. In seeking to effect change to adult consumers’ decision-making, the role of these characteristics must be considered and any intervention must take these factors into account and counter their effects. Thus, given the already high level of awareness of the risks of smoking, strategies aimed at reducing smoking or encouraging quitting need to understand consumer behavior for risky activities and address optimism biases, an increased focus on the immediate consequences of an action and on the cumulative risks of an ongoing behavior. Further, strategies that understand the role of goals and consumer habits will help in designing communications that can disrupt existing patterns or highlight goals that will reduce the temptation of smoking. As a result, the Proposals, which focus on providing more information about the risks of smoking, are not likely to be effective since they do not take into account the many factors listed above which are more likely to influence actual behavior.

5.20 An analysis of the Proposals by the preferred framework shows that each of the recommendations included in the Proposal is unlikely to be successful. While the intent of graphic health warnings, larger health warning messages, and plain packaging may be to make this information more salient, the preferred framework shows that consumers are unlikely to change behavior simply based on information they receive. In addition, as mentioned earlier, consumers are already very aware of the serious health risks of smoking and so the provision of more, similar information, albeit potentially more salient, will not affect their decision making. Instead, consumer behavior is greatly impacted by the factors considered in the preferred framework. So, for instance, even though consumers are very aware of the risks of smoking, they still may have self-control problems and not act on this information. Or, a consumer who knows all about the health risks of smoking might say that he or she is going to quit when in one type of mindset, but this same consumer will reach for a cigarette when in a different mindset. Or, a consumer who is well aware that smoking carries risks in the future may discount such risks in favor of the immediate benefit derived from smoking, say when socializing. The framework also shows that banning in-store cigarette product displays will be ineffective because consumers are behaving habitually with regard to purchasing, acting based on their preferences created by the weighting of the costs and benefits, and are affected by peer influences, rather than by seeing a product in a store that has already been seen many times before. It is this balance that should be sought to be affected by the interventions, by a communication or measure that may amend the assessment of the costs or benefits, in the accepted knowledge that the adult smoker is already aware of the health risks.

6. THE EVIDENCE RELIED ON BY DG SANCO IN SUPPORT OF THE PROPOSALS

Overview

6.1 In the prior section, we described the traditional model of consumer behavior, and we noted that this model is incomplete and deficient when applied in the context of smoking and can lead to recommendations for how to reduce smoking which are unlikely to work. We then proposed a preferred framework, based on a current understanding of consumer behavior. Thus, the prior section focuses on whether the Proposals would be effective from a conceptual perspective. Having said this, it is apparent that the Consultation relies on various studies as supportive of the Proposals. In the sections that follow, we do not conduct a study-by-study critique to consider the methodological limitations of the various papers put forward in support of the Proposals but focus only on certain issues in respect of some of the studies that are put forward in support of the Proposals' effectiveness, where those issues are central to the questions discussed in this report. In particular, studies should be assessed in terms of whether they use a methodology that can produce reliable results and valid conclusions.

6.2 We note that many prior studies we have reviewed on the effect of changes in packaging and in-store displays on smoking behavior are seriously flawed because they have relied on a methodology which is not able to yield accurate insights into what truly motivates smokers to reduce or stop smoking. Conversely, studies which use a better methodology show that the proposals to change health warning messages are not likely to work.

6.3 The traditional view of the consumer suggests that consumers will be able to readily answer questions about what will influence them to quit smoking. Because consumers are not aware of the effect of different factors and the extent to which any of these factors impact their smoking decision, a methodology that relies on asking consumers about these factors is severely limited. Further, the traditional methodology assumes that consumers can easily recognize which types of health warnings will be most effective; thus, all that is needed is for messages which consumers predict will be influential to appear on cigarette packages, and then consumers will indeed smoke less. However, we next note a number of factors that must be taken into account in order to obtain valid information, and to form valid conclusions, when studying the effect of changes in packaging or in-store displays on smoking behavior. Many of the prior studies in support of the Proposals we have reviewed on smoking behavior and perceptions have not taken these critical factors into account, and thus their results are not able to lead to meaningful solutions that will actually work.

6.4 The studies examined below are provided by way of example of the serious limitations in the evidence presented (which relate to the issues that are central to the questions discussed in this report) in support of the effectiveness of the Proposals (which is in line with our view conceptually of the likely ineffectiveness of such Proposals to effect behavioral change).

Consumers as intuitive scientists

6.5 Many of the surveys or evidence that have been relied on to form the Proposals have asked individuals to predict their behavioral response to the changes in health warnings and other aspects of packaging. Although this is a common technique

used in many consumer surveys as well as social science research, many cognitive psychologists believe that people do not have direct access to higher order mental processes such as those involved in evaluation, judgment, and problem solving and hence cannot report accurately on the effects of particular stimuli on higher order processes such as evaluation (e.g., the effect of increasing the size of the health warning or plain packaging on their motivation to smoke or quit). This had been previously well known for basic processes of perception and memory (for example, Nisbett and Wilson 1977 states that if a person is asked, “what is your mother’s maiden name?”, the answer appears swiftly in consciousness. Then, if a person is asked “How did you come up with that?”, he is usually reduced to the inarticulate answer, “I don’t know, it just came to me.”). Subsequent research has shown that people cannot correctly report on the higher order cognitive processes underlying judgment, choice, and inference. Thus, people act (and respond to surveys) as if they do have introspective access to the process that underlies their preference evaluations but these verbal reports are unreliable. For example, a field study on actual energy conservation asked people to predict how likely certain factors would be to influence their decision to conserve (Nolan et al. 2008). People in this study thought that their own level of conservation would not be influenced much by finding out that other people in their community were starting to conserve more energy. Yet, these same people were in fact most likely to conserve more energy when they were informed, through a flyer placed on their doorknob, that others in their community were trying to save energy, than through any other method (such as being told it would help the environment).

6.6 It is important to understand what is the source of such beliefs in introspection on the part of the respondents if it is not the actual process. According to Nisbett and Wilson (1977), when asked to provide reasons for their evaluations, people may not have access to cognitive processes that operate on the stimuli but instead, they may base their verbal reports on implicit, a priori theories about the causal connection between stimuli and response. Thus, the characteristics of the stimuli that seem representative of the response (e.g., the size of the warning label on attention or motivation), influence beliefs about their behavior, regardless of whether these characteristics will be the actual driver of people’s behavior in practice. To quote from the study by Nisbett and Wilson (1977) cited above, “[S]ubjects were asked to say which article of clothing was the best quality and, when they announced a choice, were asked why they had chosen the article they had. There was a pronounced left-to-right position effect, such that the right most object in the array was heavily over chosen. For the stockings, the effect was quite large, with the right-most stockings being preferred over the left-most by a factor of almost four to one. When asked about reasons for their choices, no subject ever mentioned spontaneously the position of the article in the array. And, when asked directly about a possible effect of the position of the article, virtually all subjects denied it.” Instead, consumers justified their choice with all sorts of other reasons, showing that they had very poor insight into the true cause of their behavior. In summary, the effect on one’s own behavior for any changes that do not currently exist (e.g., increasing the size of the health warning or using plain packaging) are highly unreliable and do not necessarily reflect the actual behavior. These reports are likely to rely on a priori theories (psychologists call them lay beliefs) to intuit the effect of labeling changes on smoking behavior.

6.7 Much of the survey research that we have reviewed on changes in labeling has suffered from this assumption that consumers will readily be able to know the extent to which changes in packaging or in-store displays will affect their behavior. While relying on their general beliefs is particularly likely in surveys that asked smokers about their response to changes in packaging that currently do not exist in the market place, recent research suggests that a reliance on consumers' general beliefs (rather than actual causal link) is also the case in surveys conducted to recall respondents' response from memory (Schwarz, Kahneman, and Xu 2009) such as to the packaging changes that were implemented in certain markets. For example, a study examined how Canadian consumers reacted to the actual graphic warnings that were placed on cigarette packages (Hammond et al. 2004). This study asked consumers about the extent to which the graphic warning labels had caused them to smoke less (e.g., "I am a little/a lot less likely to quit as a result of the warnings.") Respondents said that the warnings had caused them to smoke less and to be more likely to quit. However, valid information cannot be gained from asking consumers whether or not a particular message or intervention has had an effect on their behavior. First, it is difficult for a consumer to even remember what their level of smoking or intent to quit smoking was before the graphic health warnings were put on cigarette packages. Second, it would be very difficult if not impossible for a consumer to really know whether these graphic messages had actually caused any changes in behavior. For example, they may have decided to smoke less not because of the warnings, but because of the influence of a family member. Without a true ability to answer these types of questions, the consumer has to rely on what is perceived to be the sensible or "correct" answer. For the graphic warnings, the consumer would perceive the "right" answer to be that, certainly, graphic warnings had caused a change in behavior, when in fact the consumer would have no real idea as to this cause and effect relationship (e.g., Fisher 1993; King and Bruner 2000). Yet another study asked smokers if they were "more likely to quit because of the warning labels" (Fathelrahman et al. 2009). Such a question is again flawed because it asks consumers to predict how likely a certain variable is to change their behavior.

Demand Concerns with Survey Based Studies

6.8 Second, the reliance on intuitive beliefs that may not reflect actual experience is further exacerbated by the strong possibility of demand effects in many of the surveys. A major consideration in any proper survey design is ensuring that the results obtained are based on the respondents' true opinions and are not due to what are known as "demand artifacts." Demand artifacts refer to the notion that any effect observed is not capturing true opinions but is caused by what the survey procedure and questions communicate to the respondents regarding the appropriate (or "correct") response in the situation that is presented (Orne 1962). Hence, a survey design that sets out to test a hypothesis should attempt to minimize any demand artifacts, that is, any aspect of the survey design that might convey to respondents what response is hoped for or expected (Sawyer 1975). The aspects of the survey design could be based on revealing who is conducting the survey (and hence suggesting to respondents what an appropriate response is to certain questions) or it could be based on the leading nature of the questions or the survey methodology. For instance, one study on the size of health warnings asked, "Do you think this pack would be very, somewhat, not very, or not at all effective in each of the following

ways...In encouraging Canadians to reduce their tobacco use?”³ This question is biased because it asks respondents to think about how others (Canadians) will respond to a particular package of cigarettes, which is a very difficult task for someone to accomplish and which will most likely lead the respondent to give a socially desirable answer (such as saying that larger warnings would be better for Canadians, as the respondents might infer that such an answer is the “appropriate” one). This question is also biased because it suggests that the goal is to reduce tobacco use. Another study asked consumers “How effective are the pictures on the packs at communicating the health effects of smoking?” and found that the great majority said they were either very effective or quite effective (Shanahan and Elliott 2009, p. 16). Again, it is difficult for a consumer to be able to judge how “effective” a particular message is, because the consumer would have to be able to test the effect of the new message versus the old message on consumer behavior of a population.

6.9 While demand effects can arise based on the leading nature of survey questions, they can also arise from unintended aspects of the survey methodology used to capture people’s attitudes and beliefs. A major problem with many prior smoking research surveys is that they used a within-subjects design, meaning that each respondent was exposed to several different stimuli whose effect the survey intended to capture. For instance, a Canadian study on changing the size of the warnings on cigarette packages used this within-subjects design (“All respondents were exposed to all four scenarios, in rotated order.”)⁴ Such a design is problematic because it increases the attention to the only variable that is changing (i.e., the size of the health warning) and exaggerates the effect of this variable on the intended behavior. This bias, called the “focusing illusion,” was proposed by Schkade and Kahneman (1998), and suggests that a focusing illusion occurs when people focus attention on the influence of any single factor and hence exaggerate its importance relative to other factors on the overall evaluation. Studies that have looked at predicted vs. actual effects when a variable is isolated find evidence of the focusing illusion. In one study, students were asked “how happy are you with your life in general” and “how many dates did you have last month.” When asked in that order, no correlation was found; when the statements were reversed, a strong correlation was found – suggesting that asking about dating exaggerated its impact on one’s life as a whole. In a similar manner, the surveys asking people to report the effect of larger warnings or plain packaging isolate a single variable resulting in respondents exaggerating the effectiveness of these tools, without any evidence to support such a conjecture in the actual marketplace.

Role of Consumer Mindsets

6.10 Another major problem with some of the past survey research is that it asked for consumer response to packaging changes when consumers were unlikely to be interested in smoking a cigarette at that moment in time. It is important for the methodology used to examine smoking behavior to consider how a particular question

³ Environics, “Consumer Research on the Size of Health Warning Messages: Quantitative Study of Canadian Adult Smokers,” May 2008, question 43.

⁴ “Effects of Modified Packaging through Increasing the Size of Warnings on Cigarette Packages,” HC POR-07-47, April 2008, p. 2.

would be answered if the consumer were in his or her typical smoking mindset. For example, a consumer who is craving a cigarette is likely to be in what has been called a “hot” state, and this state is different than how a smoker would feel when not craving a cigarette, and being in a “cold” state (Sayette, Loewenstein, Griffin, and Black 2008). According to this theory, the decision to smoke is more attractive during “hot craving” states. Survey respondents who are not in the same mindset as when they are actually craving a cigarette will rely on a cognitive mindset and hence over-predict the impact of size of the warnings or plain packaging on their intention to smoke or to quit.

6.11 Much of the existing research on smoking behavior and intentions asks smokers to answer questions when that smoker is not actually smoking or craving a cigarette. In this case, the smoker might answer the question in more of a “cold” mindset, and report that he/she would be likely to quit under various conditions or due to different types of health warnings. However, this would not accurately reflect how the smoker would respond to the same question when actually smoking or craving to soon smoke a cigarette. For example, smokers might say that a graphic health warning would be an effective way to get them to stop smoking when not currently smoking or craving a cigarette. Yet, those same smokers might actually behave quite differently when responding to the graphic warning while craving a cigarette or when a cigarette is about to be smoked; in this case, the consumer would be more likely to ignore or avoid the message, and simply smoke the cigarette to gain the immediate benefits of smoking. Similarly, consumers who habitually smoke would also be more likely to ignore or avoid certain health warning messages when in a habitual state rather than when being asked to carefully think about health warnings while answering survey questions.

Conclusion on consumer research on the effect of health warnings, product display bans and plain packaging

6.12 In sum, much of the existing consumer research on the effect of health warning messages, product display bans and plain packaging which we have reviewed uses an improper methodology in the ways we have described above. The work is flawed because of demand artifacts, which result in responses that are likely not what the consumer actually believes but are instead what the consumer thinks is the appropriate answer. This work is also flawed because it assumes that consumers are able to predict what will influence their, or others’ behavior, when in fact much research shows that consumers are not able to accurately do this. Finally, this work is flawed because it does not account for the fact that survey questions are often asked when consumers are not in the same mindset as they are when they are craving a cigarette or are currently smoking. As a result, it is impossible to form any valid conclusions based on this research. In the next section, we examine research that has used a more acceptable methodology to determine specifically whether the proposed changes to the health warning messages will likely be effective.

Consumer Information – Health Warnings and Pictorial Health Warnings

6.13 The prior section discusses why the methodology used to examine the effect of changes in packaging on smoking behavior in past studies was often flawed. As a

result of this, much of the prior work based on consumer reports cannot be used to draw valid conclusions about the effectiveness of the Proposals. However, some prior research has used a longitudinal methodology that can allow for more valid conclusions. In particular, some research on making health warnings more graphic and larger has examined how consumer behavior and preferences have changed over time, and then has purported to link behavioral responses to changes in packaging. Thus, this research asks consumers at any given point in time to state either their current behavior (e.g., quit smoking) or their current attitudes about smoking (e.g., interest in quitting). Although such responses are also susceptible to demand effects or social desirability effects, consumers will be better at providing such information as it does not require them to introspect on the reasons for their behavior. These studies have then examined changes in these measures over time (e.g., whether fewer people smoke after new health warning messages have taken effect). This research approach therefore does not ask consumers to predict how effective a certain message will be, but instead looks at how their behavior and attitudes have changed over time, and links this to any changes that have occurred in the environment (e.g., packaging changes).

6.14 An extensive research study used such a methodology to examine the effectiveness of new health warning messages that were employed in Canada. These are known as the Wave studies. In particular, new health warning messages were placed on Canadian cigarette packs on January 1, 2001 for major brands and on June 30, 2001 for all other brands. These new warnings were larger than previous warnings (50% of the pack versus 25% of the pack), and they contained graphic pictorial images. A series of 13 surveys were conducted between 2000 (for a baseline measure) and November-December 2007.⁵

6.15 We examine the results from Wave 5 of this survey, which was conducted in July of 2002, or approximately 1.5 years after the new warnings were being used. We do this because 1.5 years should be sufficient time for the new health warning messages to have an effect, but, although one cannot be certain of this, not too long such that other confounding factors (such as a general change in attitudes towards cigarettes) would be likely to have also influenced the results. This survey shows that cigarette consumption, for either those who smoke every day or those who smoke on occasion, was not affected by the new health warnings, at least as of July 2002.⁶ This survey also shows that neither quit attempts, number of times tried to quit, nor potential quitters were influenced by these new health warnings.⁷ This is a very important finding, because it provides useful evidence, using a more appropriate methodology, that the proposed changes to the health warning messages are not likely to be effective. This finding was confirmed by another study (Gospodinov and Irvine 2004), which found that the Canadian warnings had no effect on smoking prevalence, nor a statistically significant effect on the amount smoked at a high confidence level.

⁵ Environics, “Health Effects of Tobacco and Health Warning Messages, Wave 5”.

⁶ Environics, “Health Effects of Tobacco and Health Warning Messages, Wave 5,” p. 4.

⁷ Environics, “Health Effects of Tobacco and Health Warning Messages, Wave 5,” p. 5-6.

6.16 The proposals to (1) increase the size of (pictorial) health warnings, and (2) introduce plain packaging, are supposed to be ways to increase the attention devoted to, interest in, and influence of the health warnings on persuading consumers to smoke less. However, as mentioned earlier, there are many reasons why these proposed changes are likely to be ineffective in changing smoking behavior among regular smokers. The regular adult smoker has decided to smoke having balanced numerous factors, including the risks of smoking. It is unlikely that by simply making the package less attractive, if that was the goal, this would overcome or sufficiently affect the weighting of the inputs to change smoking behavior. Rather the solutions to reduce smoking or enhance quitting should focus on enhancing the weight on the risk of smoking as well as other factors that result in smokers continuing to choose smoking.

6.17 In addition, these proposed changes can make the package itself simply seem less attractive although this is a very subjective measure, and one which is difficult to quantify reliably.

6.18 Earlier, we discussed a model of consumer decision making that the RAND Report used to help it make recommendations. This model assumed that consumers would be persuaded by a health warning message to change their behavior if they first noticed the message and then understood the message (however, as noted, consumers already have a good grasp on the negative health consequences from smoking). Such a model of consumer decision making might predict that it would be a good idea to make the health warnings as disturbing as possible, since a disturbing message might be a message to which the consumer pays more attention and increase the weight assigned to risk over the benefits. However, the Canadian study found that there was actually a decrease in the amount of times per day or week that consumers looked at the new, graphic health warning messages on packs of cigarettes.⁸ This is because consumers often avoid these types of disturbing messages. For instance, many consumers will turn away from a disturbing image they see in movies or television, and advertisers are quite reluctant to use disturbing images as a result. Thus, a disturbing message might actually result in the unintended consequence that consumers would actively look away from the warnings, which seems to defeat their whole purpose in the first place. It would seem like a more successful approach would be to engage consumers with a more effective message, which is an approach we expand upon in the next section. Since cigarettes are often used as a means to deal with stress, large graphic warnings might thus backfire and cause smokers to actually smoke more cigarettes at the point of consumption (Hansen, Winzeler, and Topolinski 2010).

6.19 It is important to note that health messages about smoking are also provided directly by government sources and there is no reason to believe that there is a lack of credibility associated with health messages about smoking whether communicated by the warnings or from other media (e.g. Government, schools, TV, etc). Moreover, it is highly unlikely that the packaging detracts from the health messages and health warning as consumers typically process brand information very rapidly as these have

⁸ Environics, “Health Effects of Tobacco and Health Warning Messages, Wave 5,” p. 32.

been used over many years and are easy to identify rapidly and are aware of the health messages from other sources.

6.20 In sum, much of the existing research that has focused on making cigarette health warning messages larger and more graphic, and which provide support for the Proposals, is flawed for a variety of reasons. In contrast, studies that do not exhibit such flaws show that these proposals are unlikely to be effective. In addition, as mentioned earlier, it should again be emphasized that current levels of awareness of the health risks of smoking are already very high, so making health warnings more graphic and larger is very unlikely to further increase awareness or, importantly, to change behavior. As the proposed framework posits, the daily consumption is likely to be habitual, influenced by consumer mindset at the moment of consumption, peer influence, and a failure of self-control. In the next sections, we examine the methodology of papers in support of the other proposals put forward by DG SANCO – the proposal to institute plain packaging and the proposal to ban in-store cigarette displays and promotions. Further, any alteration to make the packaging less attractive in order to draw attention to the health warning seems superfluous as the awareness of the health risk is already high for the regular adult smoker. On the contrary, packaging with ugly graphic images may have unintended consequences that make the messages less effective for some smokers. Finally, there is no credible evidence based on our analysis of adult consumer decision making to suggest that current packaging somehow distracts consumers from paying attention to health warning messages.

Consumer Information - Plain Packaging

6.21 The prior sections focused on the potential effectiveness of larger and more graphic health warnings. We next turn to the Proposal that cigarettes could be placed in plain packaging, and whether this Proposal is supported by reliable research which can lead to valid conclusions.

6.22 First, note that the RAND Report says, “Given that no country has implemented plain packaging to date, no observed data currently exist on the impact of plain packaging on consumer behavior.”⁹ Instead, there have been a few studies on plain packaging that have relied on focus groups, interviews, and surveys. These studies have been criticized already by Padilla and Watson (2010) for some of the same reasons that we mention above.

6.23 However, it is odd that the RAND Report would then go on to say: “This conclusion [that the prior studies are flawed] is based on the fact that the methodologies of the research papers reviewed by the authors [Padilla and Watson 2010] were judged to be flawed due to the general overreliance on focus groups and surveys. While this methodological critique should be acknowledged and taken into account when reviewing the evidence presented in the literature, it is not entirely valid given that there cannot possibly be empirical evidence of the impact of a given policy unless legislation is implemented in the first place. Hence, in such cases, legislators have to rely on evidence such as that derived from perception data in order to get as good an indication as feasible of the potential impacts of these policies on

⁹ Page 131.

consumers.”¹⁰ However, while it is true that data on consumer perceptions can be useful, it is also of the utmost importance that this data be collected in the appropriate manner. Prior studies we have reviewed of plain packaging have unfortunately suffered from the many problems we discussed earlier, and thus cannot be relied on – not because they rely on perceptual data per se, but because this perceptual data was not collected properly.

6.24 Thus, there does not appear to be any reliable research showing that plain packaging would be an effective way to get adult smokers to smoke less or to quit. Further, there is no reason to think that packaging would somehow detract from the impact of a health warning. As mentioned earlier, consumers are already very aware of the health risks of smoking, and the presence of packaging elements should not detract from these messages or the level of awareness of the risks of smoking or affect consumer behavior. We will examine this issue in more detail in the section below on “package attractiveness.”

6.25 In addition, we do know from the marketing literature and our expertise that packaging serves the purpose of aiding consumers in the choice of their favorite brand. For the purchase of cigarettes, which is typically associated with strong brand preference, packaging thus helps regular smokers to identify the brand they typically purchase.

Access to Tobacco products – Display Bans

6.26 Part of the rationale for the proposal to introduce restrictions or bans on in-store displays put forward by the Commission is based on concerns about increased impulse purchasing. The RAND Report cites various studies that claim that in-store displays encourage impulse purchasing. It is suggested that in-store product displays and advertising influence smoking behavior and increase the purchase of cigarettes that would not have otherwise been purchased.

6.27 As noted in the RAND Report, “...there is currently very little research available on [displays] impact on adult smokers’ tobacco consumption behaviors.”¹¹ It also appears that what little research has been conducted on this topic suffers from the same severe methodological problems identified earlier (i.e., demand artifacts, asking consumers to be lay scientists, mindsets). For example, Wakefield et al. (2008) conducted a telephone survey of nearly 3000 Australian consumers. One of the main questions asked was, “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?” However, this is an extremely biased question that cannot lead to valid results. As mentioned earlier, consumers really have no way of knowing this. A consumer would have to recall all of their trips to a store, recall how often they noticed a display, recall how often they bought cigarettes, and then be able to calculate the effect of seeing a display on the likelihood of buying cigarettes. There is simply no way a consumer would be able to accurately determine this.

¹⁰ Page 131.

¹¹ p. 192.

6.28 While there are many problems with the approach used by Wakefield et al. (2008), a study was conducted by Shiffman et al. (1996) which in some ways did use a more valid methodology. The Shiffman et al. (1996) paper notes that “Unfortunately, past studies of relapse episodes are united only by common findings but also by common methodological flaws. Most striking has been the studies’ reliance on long-term retrospective recall.”¹² Rather than relying on any specific memory, respondents are more likely to base their answer on a lay belief in a causal link between display and likelihood of purchase (e.g., “displays increase my likelihood of making a purchase.”) In other words, studies like the Wakefield et al. (2008) study are flawed, as mentioned above, in part because they ask consumers to recall events they most likely have long since forgotten (e.g., remembering that seeing a cigarette pack display in a store has resulted in an increased urge to buy cigarettes).

6.29 To try to overcome the problems that would be implicit in any research like the Wakefield et al. (2008) paper, the Shiffman et al. (1996) paper collected real-time data in participants’ natural environments, by asking respondents to record their behavior with an electronic diary. The Shiffman et al. paper found that 44% of urges occurred in the home, 31% at work, 8% at others’ home, 5% at a bar-restaurant, 2% in a vehicle, 4% outside, and 6% other (the data was quite similar when measuring smoking lapses rather than urges). Thus, it is clear from this data that either no one or possibly a very small percentage (possibly part of the “other” category) felt an urge in-store, and therefore (even potentially) due to in-store displays. This evidence, which was collected with a more reliable methodology, directly contradicts the Wakefield et al. results. In addition, the Shiffman et al. paper shows that people do feel urges and cravings to smoke, but this occurs primarily at home or at work, where cigarettes are not sold in any form. This is also consistent with the data reported in the Australian Government Department of Health and Ageing study on the key triggers to smoking. This means that cravings occur at the point of consumption, and not at the point of purchase, and as a result, store displays are not likely to somehow cause impulse purchases induced by cravings.

6.30 While the above research shows that it is highly unlikely that in-store displays will cause cravings and impulse purchases, there is other research which shows which types of cues actually are likely to produce cravings. It is important to better understand what drives cravings, because a study found that cravings act as a strong motive to smoke (Piasecki et al. 2007). In particular, this study asked respondents to carry around electronic diaries for 14 days to record smoking-related events. This study found that craving was the most commonly reported motive (62.8% of smoking occasions), followed by habit/automatic (42.1%), opportunity to socialize (23.0%), boredom/time to kill (20.0%), soon going where can’t smoke (14.9%), enhance positive emotion (11.8%), break from work or studying (10.3%), and cope with negative emotion (10.2%) (the results add up to over 100% because people could list more than one motive).

6.31 Research has found that certain cues can induce cravings, but these cues are much stronger than simply seeing an unopened pack of cigarettes. These cravings or triggers are more likely to occur at the point of consumption (when someone is at

¹² p. 366.

home, socializing, or at work) rather than at the point of purchase (when someone is in the store). For example, cues have been manipulated by having smokers take out a cigarette and light it, but not smoke it, which again is much stronger than a weaker cue like just seeing a package, especially a package that appears in a place where it is regularly seen and expected such as in an in-store display (Griffin and Sayette 2008).

6.32 As a result, if the intent is to reduce consumer cravings and temptations to smoke, and thus the purchase of cigarettes, then intervention efforts should focus on where these cravings and urges occur (in the home or at work, not in a store) and on what induces these cravings (a lit cigarette that can be seen in social settings or in common smoking areas, but not cigarettes that are in packs in a store). Thus impulse buys driven by cravings are very unlikely to be due to any in-store cigarette displays.

6.33 As the study by Piasecki et al. (2007) notes, another common motive to smoke is that smoking is a habit. If smokers habitually buy cigarettes, and this is a regular act, which they do in a repetitive fashion without prolonged deliberation, then banning cigarette displays is also very unlikely to cause a reduction in smoking. Instead, these smokers are likely to simply stop in a particular store and automatically buy their regular brand, regardless of any displays, and not on impulse, but as a habitual response.

6.34 In addition, after smokers reach a certain level of intake of cigarettes, they tend to stick to that level. The 1988 Surgeon General's Report (The Health Consequences of Smoking: Nicotine Addiction) suggested that after initiation, smokers would increase their intake until they found a level of consumption that would remain stable.

6.35 Further, the suggestion that a ban on displays would assist those smokers wishing to quit is flawed on the basis that it does not take into account the way in which adult smokers decide to quit smoking and implement that decision. Implementing the decision to quit smoking comes as a result of a value system choice and an evaluation of costs and benefits in the context of the individual's specific goals and motivations at that given time. A decision to quit smoking which is properly implemented in such a way is unlikely to be displaced simply by seeing a pack in-store. Adults attempting to quit may be subject to urges and cravings however, in line with the evidence described above, these are likely to occur at point of consumption rather than at point of purchase.

6.36 In sum, the prior research on in-store displays which we have reviewed has not been conducted with a valid methodology. As a result, any recommendations based on these results should not be accepted. Instead, the purchase of cigarettes is not an impulse buy, as smokers tend to smoke about the same amount every day. For example, the 1988 Surgeon General's report suggested that after initiation, smokers would increase their intake until they found a level of consumption that would remain stable (or at least until they decided to cut down or quit). This further supports the notion that while smokers may make unplanned purchases (i.e. buying a pack earlier than they otherwise would have or a different brand or in a different store to where they intended to buy), this is not the same as choosing to purchase a product when such a choice would not have been made at all (i.e. even in the future) but for the

point-of-sale display. Furthermore, when smokers do experience a craving, this tends to be at work or at home, and this craving is internally driven rather than induced by such things as in-store displays.

7. ALTERNATIVE SOLUTIONS

7.1 Given our proposed framework about what influences adult smoking behavior and decision making, it is apparent that the Proposals would not effectively alter adult consumer smoking behavior. Thus, it is important to develop solutions that are more likely to work. Below, we present some ideas supported by the preferred framework that are likely to be more effective than the Proposals and which should be considered in any analysis of potential interventions.

Message characteristics

7.2 Since adult consumers are already very aware of the health risks associated with smoking, it does not make sense to continue to focus on providing more of the same type of information. Instead, by applying our preferred framework to this issue, we are able to generate new ways to communicate the risks of smoking. Specifically, it makes sense to develop messages about the risks of smoking the content of which are more persuasive or which prompt the smoker to reassess the weight of the known risks, so that consumers will act on the messages. We next consider ways in which to make these messages more effective.

Message relevance

7.3 Research shows that one of the most important factors in getting a consumer to process a message is the relevance of that message to the consumer (Petty and Brinol 2010). Linking a message to particular aspects of the self, such as a consumer's goals, values, or identity can increase the chance that a message will be processed and its persuasive impact (Blankenship and Wegener 2008). Health warnings could also be more relevant to adult consumers by providing specific messages for specific groups of smokers. For example, people can be classified to the extent that they are either "social smokers," "secret smokers," "stress smokers," "emotional smokers," "smoking to relax," or "weight-conscious smokers." (Beck 2010). Each of these different groups might respond differently to certain appeals. Thus, any campaign to reduce smoking will be even more effective to the extent that it can customize messages and interventions to different types of smokers.

Message framing

7.4 One way to make health warning messages more effective is to frame them in a positive light and to make them specific. According to this research, it will be easier for consumers to pursue a goal when the consumer thinks of the goal more as a desire to reach a favorable end-state than as a desire to avoid a negative end-state (Rothman 2000). This research suggests that health warnings may be more effective if they focus on positive end-states (e.g., not smoking leads to a better social life or immediate benefits like having more spending money in your pocket). For example, gain-framed messages have been shown to be more effective than loss-framed messages in getting smokers to quit (Toll et al. 2007).

Messages Influencing the Assessment of Risk

7.5 The framework that we developed earlier notes that adult consumers often do not take account of the risks of smoking because each cigarette by itself represents only a small risk. Thus, it is important for messages to emphasize that, at least for regular smokers, there really is no such thing as just smoking one cigarette when assessing health risks. Instead, smokers who consume one pack of cigarettes a day should be made aware of how many cigarettes this will amount to over a year, or over their lifetime. For example, research notes that: “If choices are made one cigarette at a time, the expected pleasure from each cigarette can easily seem to outweigh its trivial health consequences, so lighting up may appear to be the best choice. But if 7,300 single-cigarette choices (one year’s worth, for a pack-a-day smoker) are combined, the health consequences may appear less trivial, and might well outweigh the pleasure. The individual who makes 7,300 individually inconsequential decisions to smoke, therefore, makes an aggregate choice that might have been rejected had all the decisions been bracketed together. Whether someone who likes cigarettes ends up as a lifetime smoker may thus depend in part on how she brackets her choices. (Read, Loewenstein, and Rabin 1999, p. 172).” Thus, a health warning message might note that, “People who smoke one pack a day are smoking 7300 cigarettes a year!” As another example of this technique, there is an advertisement showing how many packs of sugar are in a single can of soda. This makes it more clear to the consumer that drinking one soda actually amounts to drinking many packs of sugar.

Message Using Goals

7.6 Research on consumer goals suggests that health warning messages that trigger desirable goals will reduce the temptation and increase the desirability to quit or reduce smoking. In our earlier discussion of a preferred framework for studying smoking behavior, we mentioned that consumers often have a goal to either quit smoking or to reduce the amount that they smoke. Research on goals finds that goals which are concrete and specific are more motivating than other types of goals (e.g., Locke, Latham, Smith, and Wood 1990). Thus, health warning messages could try to encourage smokers to set specific goals (e.g., smoke 2 cigarettes less every week), and link these goals to people who are important to the smoker (e.g., “You can quit smoking if you commit to a date! Quit on the birthday of your child.”) Similarly, the risks can be described concretely rather than in more abstract terms; for example, it could be emphasized that smoking for a year is like consuming two pounds of tar.

7.7 Goals also become more or less active over time. For example, it is very common to set goals about losing weight or cut back on smoking at the end of the year. Labels could take advantage of the increased receptivity of certain smokers and encourage them to set a new year’s resolution to quit or reduce smoking.

Message Focusing on Peer Influences

7.8 As mentioned earlier, the influence of peers is one of the greatest influences on smoking behavior. However, it is interesting to note that the overwhelming majority (about 50%) of smokers who are asked how they will quit smoking mention “will power/cold turkey/just stop” as the one technique they will use (Enviro-nics p.

9). On the other hand, only 1% of smokers say they will “avoid other smokers/smoking situations.” Thus, it is apparent that, even though social influences exert a large effect on the ability and motivation to quit smoking, smokers are not aware of this effect and so do not try to manage it when trying to quit.

7.9 Thus, one type of health warning message could focus on the influence of peers, and say something like, “Research clearly shows that you should avoid others who are smoking when you are trying to quit.” In addition, as mentioned earlier, messages should focus on linking smokers to people who are “uncool”. For example, research finds that people are more likely to make healthier choices when the poor choice is associated with a social identity that people do not want (Berger and Rand 2008). Thus, messages could make a direct link between cigarettes and “uncool” people to reduce the motivation to smoke.

Message Delivery

7.10 The learning gained from the role of different factors described in our preferred framework as impacting the decision to smoke also suggests which media would be most effective. The key insight is that the messages should be delivered at times when the smoker feels the desire to consume a cigarette. Given this, it may be that certain media are more effective means to deliver the more effective interventions. For example, given that smokers tend to feel cravings when they are near others who are smoking, it would make sense for health warning messages to be placed in areas where people who are smoking congregate. Thus, if people who are at work need to smoke in a designated smoking area, this would be the place where health warning messages would be the most effective. Or, if people are allowed to smoke in a bar or restaurant, then placing health warning messages in such an area, maybe via television messages on a sports channel at the bar, would likely have a greater influence on smoking behavior. Conversely, smokers may be more receptive to messages about the importance of health and harmful effects of smoking when they are engaging in healthy activities (e.g., on television programs playing at the gym) or family activities (e.g., theme parks with children).

Changing Habits

7.11 We stated earlier that simply providing more information on the risks of smoking is unlikely to be an effective way to encourage smokers to quit. This is further supported by research on changing habits, which notes that “Information campaigns that successfully convey information do not necessarily change consumers’ behaviors. The disconnection between changing minds and changing behavior has been noted in several different research streams” (Verplanken and Wood 2006, p. 91). This research goes on further to note that, in order to get people to really change, it is important to realize the power of habits, and how to break those habits (or even addictions). One suggestion is that interventions are likely to be most effective when the consumer is in a new environment, since a new environment does not have as many of the cues to continue with a habit as the old environment. Thus, a smoker will be much more likely to actually quit smoking when in a new environment, such as when the smoker moves and must meet new friends who hopefully do not also smoke. Finally, this research notes that consumers can more

successfully stop a bad habit by devoting resources to starting a good habit. For instance, a habit of smoking can be replaced with a habit of chewing gum or eating dried fruit.

7.12 Other research on habits finds that a good way for consumers to inhibit their habits is for them to carefully monitor their behavior (Quinn et al. 2010). For instance, a consumer who smokes habitually but reports a desire to quit should carefully monitor this habit. Thus, this habit can be put under control with constant vigilance. On the other hand, a consumer can best avoid craving a cigarette by avoiding certain cues that could trigger such cravings. For instance, a consumer who is trying to quit smoking should be told by messages to avoid areas where others are smoking, such as bars or the homes of friends who smoke. In addition, smokers should try to avoid congregating outside of buildings in smoking-designated areas, as this can encourage smokers to smoke. By using cigarette labels to remind people to avoid these types of triggers, consumers can reduce their urges and be better able to quit.

Context

7.13 Other suggestions include making the products that are desired less accessible, in the sense of less available as it requires more money to buy them i.e. more expensive and thereby increasing the immediate costs to offset the immediate benefits. Thus, cigarettes should be made more expensive to encourage people to quit.

Self-Control Solutions

7.14 As mentioned earlier, consumers often give in to urges because they do not exhibit enough self-control. One way to deal with situations of self-control is to allow people to limit consumption by limiting their ability to over-consume at the moment of consumption (Schelling 1984). This suggests that cigarettes should be sold in smaller package sizes as this would be a way to pre-commit to self-control. At the same time, there needs to be effective enforcement of cigarette sales to make sure they are not being sold to minors, as the cost of a smaller pack would be cheaper than a full pack, and thus minors with less money may want to try to buy them. Another strategy to reduce temptation is by increasing the costs associated with smoking. Hence, increasing the price of cigarettes but making them available in smaller pack sizes will shift the consumption level to a lower quantity.

8. Conclusion

8.1 The Proposals are not likely to be effective means to reduce smoking and encourage quitting. Support for the Proposals is based on the traditional view of the consumer behavior and behavior change. This view suggests that one way to persuade consumers to reduce smoking is to offer more information. However, consumers are already very aware of the risks of smoking. Thus, what is needed is an understanding of what really drives adult smoking behavior. We have provided a preferred framework for better understanding such behavior. This preferred framework is able to produce recommendations that are more likely to change

smoking behavior, because the framework recognizes many additional factors that impact smoking and are not being targeted as a means to change smoking behavior.

REFERENCES

- Australian Government Department of Health and Ageing (2008).
- Baker, Timothy B., Thomas H. Brandon, and Laurie Chassin (2004), "Motivational Influences on Cigarette Smoking," *Annual Review of Psychology*, 55, 463-491.
- Baumeister, R.F., Bratslavsky, E., Muraven, M., & Tice, D.M. (1998), "Ego Depletion: Is the Active Self a Limited Resource?" *Journal of Personality and Social Psychology*, 74 (5), 1252-1265.
- Beck, Melinda (2010), "Rise of the Part-Time Smoker," *Wall Street Journal*, January 12, D1.
- Berger, Jonah and Chip Heath (2007), "Where Consumers Diverge from Others: Identity Signaling and Product Domains," *Journal of Consumer Research*, 34 (2), 121-134.
- Berger, Jonah and Lindsay Rand (2008), "Shifting Signals to Help Health: Using Identity Signaling to Reduce Risky Health Behaviors," *Journal of Consumer Research*, 35 (October), 509-518.
- Berns, Gregory S., David Laibson, and George Loewenstein (2007), "Intertemporal Choice – Toward an Integrative Framework," *Trends in Cognitive Sciences*, 11 (11), 482-488.
- Blankenship, Kevin L. and Duane T. Wegener (2008), "Opening the Mind to Close It: Considering a Message in Light of Important Values Increases Message Processing and Later Resistance to Change," *Journal of Personality and Social Psychology*, 94 (2), 196-213.
- Cialdini, R.B., Reno, R.R., and Kallgren, C.A. (1990), "A Focus Theory of Normative Conduct: Recycling the Concept of Norms to Reduce Littering in Public Places," *Journal of Personality and Social Psychology*, 58 (6), 1015-1026.
- Dhar, Ravi and Eunice Y. Kim (2007), "Seeing the Forest or the Trees: Implications of Construal Level Theory for Consumer Choice," *Journal of Consumer Psychology*, 17 (2), 96-100.
- Dhar, Ravi and Stephen M. Nowlis (1999), "The Effect of Time Pressur on Consumer Choice Deferral," *Journal of Consumer Research*, 25 (4), 369-384.
- Dhar, Ravi, Stephen M. Nowlis, and Steven J. Sherman (1999), "Comparison Effects on Preference Construction," *Journal of Consumer Research*, 26 (3), 293-306.

Dhar, Ravi, Stephen M. Nowlis, and Steven J. Sherman (2000), "Trying Hard or Hardly Trying: An Analysis of Context Effects in Choice," *Journal of Consumer Psychology*, 9 (4), 189-200.

Envionics, "Health Effects of Tobacco and Health Warning Messages, Wave 5."

Fathelrahman, Ahmed I., Maizurah Omar, Rahmat Awang, Ron Borland, Geoffrey T. Fong, David Hammond, and Zariah Zain (2009), "Smokers' Responses Toward Cigarette Pack Warning Labels in Predicting Quit Intention, Stage of Change, and Self-Efficacy," *Nicotine & Tobacco Research*, 11 (3), 248-253.

Fisher, Robert J. (1993), "Social Desirability Bias and the Validity of Indirect Questioning," *Journal of Consumer Research*, 20 (2), 303-315.

Fishbach, Ayelet and Ravi Dhar (2007), "Dynamics of goal-based choice," In *Handbook of Consumer Psychology*, 611-637, NY:Psychology Press.

Frederick, Shane (2006), "Valuing Future Life and Future Lives: A Framework for Understanding Discounting," *Journal of Economic Psychology*, 27 (5), 667-680.

Frederick, Shane, George Loewenstein, and Ted O'Donoghue (2002), "Time Discounting and Time Preference: A Critical Review," *Journal of Economic Literature*, 40 (2), 351-401.

Gately, Dermot (1980), "Individual Discount Rates and the Purchase and Utilization of Energy-Using Durables: Comment," *Bell Journal of Economics*, 11, 373-4.

Goldstein, Noah J., Robert B. Cialdini, and Vladas Griskevicius (2008) "A Room with a Viewpoint: Using Social Norms to Motivate Environmental Conservation in Hotels," *Journal of Consumer Research*, 35 (3), 472-482.

Gospodinov, Nikolay and Ian J. Irvine (2004), "Global Health Warnings on Tobacco Packaging: Evidence from the Canadian Experiment," *Topics in Economic Analysis & Policy*, 4 (1), 1-21.

Griffin, Kasey M. and Michael A. Sayette (2008), "Facial Reactions to Smoking Cues Relate to Ambivalence About Smoking," *Psychology of Addictive Behaviors*, 22 (4), 551-556.

Hammond, David, Geoffrey T. Fong, Paul W. McDonald, K. Stephen Brown, and Roy Cameron (2004), "Graphic Canadian Cigarette Warning Labels and Adverse Outcomes: Evidence from Canadian Smokers," *American Journal of Public Health*, 94 (8), 1442-1445.

Hansen, Jochim, Susanne Winzeler, and Sascha Topolinski (2010), "When the Death Makes You Smoke: A Terror Management Perspective on the Effectiveness of Cigarette On-Pack Warnings," *Journal of Experimental Social Psychology*, 46, 226-228.

- Hausman, Jerry.A. (1979), "Individual Discount Rates and the Purchase and Utilization of Energy-Using Durables," *Bell Journal of Economics*, 10, 33-54.
- Kahneman, Daniel and Amos Tversky (1979), "Prospect Theory: An Analysis of Decision Under Risk," *Econometrica*, 47 (2), 263-292.
- Khan, Uzma and Ravi Dhar (2007), "Where There Is a Wa, Is There a Will The Effect of Future Choices on Self-Control," *Journal of Experimental Psychology: General*.
- King, Maryon F., and Gordon C. Bruner (2000), "Social Desirability Bias: A Neglected Aspect of Validity Testing," *Psychology & Marketing*, 17 (2), 79-103.
- Kirby, Kris N. and R.J. Herrnstein (1995), *Psychological Science*, 6, 83-89.
- Kotler, Philip and Kevin Lane Keller (2009), *Marketing Management*, 13th edition, Pearson Prentice Hall.
- Lewin, K. (1935), *A Dynamic Theory of Personality*, New York: McGraw Hill.
- Li, Qian, Carolyn Dresler, Julia E. Heck, Shane Allwright, Margaretha Haglund, Sara Sanchez, Eva Kralikova, Isabelle Strucker, Elizabeth Tamang, Ellen R. Gritz and Mia Hasbibe (2010), "Knowledge and Beliefs about Smoking and Cancer among Women in 5 European Countries." *Cancer Epidemiology, Biomarkers and Prevention* Forthcoming
- Locke, Edwin A., Gary P. Latham, Ken J. Smith, and Robert E. Wood (1990), *A Theory of Goal Setting & Task Performance*, Prentice Hall.
- Loewenstein, George F., Elke U. Weber, Christopher K. Hsee, and Ned Welch (2001), "Risk as Feelings," *Psychological Bulletin*, 127 (2), 267-286.
- Markman, Arthur B. and C. Miguel Brendl (2000), "The Influence of Goals on Value and Choice," *Psychology of Learning and Motivation*, 39, 97-128.
- Markowitz, Harry (1952), "The Utility of Wealth," *The Journal of Political Economy*, 60 (2), 151-158.
- Muraven, Mark and Roy F. Baumeister (2000), "Self-Regulation and Depletion of Limited Resources: Does Self-Control Resemble a Muscle?," *Psychological Bulletin*, 126 (2), 247-259.
- Muraven, Mark, Dianne M. Tice, and Roy F. Baumeister (1998), "Self-Control as Limited Resource: Regulatory Depletion Patterns," *Journal of Personality and Social Psychology*, 74 (3), 774-789.
- Neal, D.T., W. Wood, P. Lally, and M. Wu (2009), "Do habits depends on goals? Perceived versus actual role of goals in habit performance," Working Paper, University of Southern California.

- Nisbett, Richard E. and Timothy D. Wilson (1977), "Telling More Than We Can Know: Verbal Reports on Mental Processes," *Psychological Review*, 84 (3), 231-259.
- Nolan, Jessica M., P. Wesley Schultz, Robert B. Cialdini, Noah J. Goldstein, and Vldas Griskevicius (2008), "Normative Social Influence in Underdetected," *Personality and Social Psychology Bulletin*, 34 (7), 913-923.
- Nowlis, Stephen M., Ravi Dhar, and Itamar Simonson (2010), "The Effect of Decision Order on Purchase Quantity Decisions," *Journal of Marketing Research*, 47 (4), 725-737.
- Nowlis, Stephen M., Barbara E. Kahn, and Ravi Dhar (2002), "Coping with Ambivalence: The Effect of Removing a Neutral Option on Consumer Attitude and Preference Judgments," *Journal of Consumer Research*, 29 (3), 319-334.
- Orne, Martin T. (1962), "On the Social Psychology of the Psychological Experiment: With Particular Reference to Demand Characteristics and Their Implications," *American Psychologist*, 17, 776-783.
- Padilla, Jorge and Nadine Watson (2010), "A Critical Review of the Literature on Generic Packaging for Cigarettes – A Report for PMI by Legg Consulting: Belgium."
- Petty, Richard E. and Pablo Brinol (2010), "Attitude Change," in *Advanced Social Psychology: The State of the Science*.
- Piasecki, Thomas M., Alison E. Richardson, and Shawn M. Smith (2007), "Self-Monitored Motives for Smoking Among College Students," *Psychology of Addictive Behaviors*, 21 (3), 328-337.
- Piper, Megan E., Thomas M. Piasecki, E. Belle Federman, Daniel M. Bolt, Stevens S. Smith, Michael C. Fiore, and Timothy B. Baker (2004), "A Multiple Motives Approach to Tobacco Dependence: The Wisconsin Inventory of Smoking Dependence Motives (WISDM-68)," *Journal of Consulting and Clinical Psychology*, 72 (2), 139-154.
- Quinn, Jeffrey M., Anthony Pascoe, Wendy Wood, and David T. Neal (2010), "Can't Control Yourself? Monitor Those Bad Habits," *Personality and Social Psychology Bulletin*, 36 (4), 499-511.
- Read, Daniel, George Loewenstein, and Matthew Rabin (1999), "Choice Bracketing," *Journal of Risk and Uncertainty*, 19, 171-197.
- Rothman, Alexander J. (2000), "Toward a Theory-Based Analysis of Behavioral Maintenance," *Health Psychology*, 19, 64-69.
- Ruderman, H., M.D. Levine and J.E. McMahon (1987), "The Behavior of the Market for Energy Efficiency in Residential Appliances including Heating and Cooling Equipment," *The Energy Journal*, 8 (1), 101-124.

Sawyer, Alan G. (1975), "Demand Artifacts in Laboratory Experiments in Consumer Research," *Journal of Consumer Research*, 1 (4), 20-30.

Sayette, Michael A., George Loewenstein, Kasey M. Griffin, and Jessica J. Black (2008), "Exploring the Cold-to-Hot Empathy Gap in Smokers," *Psychological Science*, 19 (9), 926-932.

Schelling, Thomas C. (1984), "Self-Command in Practice, in Policy, and in a Theory of Rational Choice," *American Economic Review*, 74 (2), 1-11.

Schkade, David A. and Daniel Kahneman (1998), "Does Living in California Make People Happy? A Focusing Illusion in Judgments of Life Satisfaction," *Psychological Science*, 9 (5), 340-346.

Schmeichel, Brandon J. (2007), "Attention Control, Memory Updating, and Emotion Regulation Temporarily Reduce the Capacity for Executive Control," *Journal of Experimental Psychology: General*, 136 (2), 241-255.

Schultz, P. Wesley (1999), "Changing Behavior with Normative Feedback Interventions: A Field Study on Curbside Recycling," *Basic and Applied Social Psychology*, 21 (1), 25-36.

Schwarz, Norbert, Daniel Kahneman and Jing Xu (2009), "Global and Episodic Reports of Hedonic Experience," in Robert Belli, Duane Alwin, and Frank Stafford (eds.), *Using calendar and diary methods in life events research*. Newbury Park, CA: Sage.

Shanahan, Patrick and David Elliott (2009), "Evaluation of the Effectiveness of the Graphic Health Warnings on Tobacco Product Packaging 2008," Australian Government Department of Health and Ageing.

Shiffman, Saul, Jean A. Paty, Maryann Gnys, Jon A. Kasel, and Mary Hickcox (1996), "First Lapses to Smoking: Within-Subjects Analysis of Real-Time Reports," *Journal of Consulting and Clinical Psychology*, 64 (2), 366-379.

Shimp, Terence A. (2007), *Advertising, Promotion, and Other Aspects of Integrated Marketing Communications*, 7th edition, Thompson South-Western, Mason, OH.

Simonson, Itamar, Ziv Carmon, Ravi Dhar, Aimee Drolet, and Stephen M. Nowlis (2001), "Consumer Research: In Search of Identity," *Annual Review of Psychology*, 52, 249-275.

Steptoe, Andrew, Jane Wardle, Weiwei Cui, Adriana Baban, Kelli Glass, Karl Pelzer, Akira Tsuda, and Jan Vinck (2002), "An international comparison of tobacco smoking, beliefs and risk awareness in university students from 23 countries." *Addiction*, 97, 1561-71.

- Swagler, Roger M. and Paula Wheeler (1989), "Rental-Purchase Agreements: A Preliminary Investigation of Consumer Attitudes and Behaviors," *Journal of Consumer Affairs*, 23 (1), 145-160.
- Thaler, Richard H. and Sendhil Mullainathan (2000), "Behavioral Economics," in *The Concise Encyclopedia of Economics*, David R. Henderson editor, <http://www.econlib.org/library/CEE.html>.
- Toll, Benjamin A., Stephanie S. O'Malley, Nicole A. Katulak, Ran Wu, Joel A. Dubin, Amy Latimer, Boris Meandzija, Tony P. George, Peter Jatlow, Judith L. Cooney, and Peter Salovey (2007), "Comparing Gain- and Loss-Framed Messages for Smoking Cessation With Sustained-Release Bupropion: A Randomized Controlled Trial," *Psychology of Addictive Behaviors*, 21 (4), 534-544.
- Trope, Yaacov and Nira Liberman (2003), "Temporal Construal," *Psychological Review*, 110 (3), 403-421.
- Trope, Yaacov and Nira Liberman (2010), "Construal-Level Theory of Psychological Distance," *Psychological Review*, 117 (2), 440-463.
- U.S. Surgeon General (1988), *The Health Consequences of Smoking: Nicotine Addiction. A Report of the Surgeon General*, Rockville, MD: Department of Health and Human Services, Public Health Service.
- Verplanken, Bas and Wendy Wood (2006), "Interventions to Break and Create Consumer Habits," *Journal of Public Policy & Marketing*, 25 (1), 90-103.
- Viscusi, W. Kip (1996), *Rational Risk Policy: The 1996 Arne Ryde Memorial Lectures*, Oxford University Press.
- Viscusi, W. Kip (2002), *Smoke-Filled Room: A Postmortem on the Tobacco Deal*, University of Chicago Press.
- Vohs, Kathleen D., Nicole L. Mead, and Miranda R. Goode (2006), "The Psychological Consequences of Money," *Science*, 17 (November), 1154-1156.
- Von Neumann, John and Oscar Morgenstern (1947), *The Theory of Games and Economic Behavior*, 2nd edition, Princeton University Press, Princeton, N.J.
- Wakefield, Melanie, Daniella Germain, and Lisa Henriksen (2008), "The Effect of Retail Cigarette Pack Displays on Impulse Purchase," *Addiction*, 103 (2), 322-328.
- Wang, Jing, Nathan Novemsky, Ravi Dhar, and Roy F. Baumeister (2010), "Trade-Offs and Depletion in Choice," *Journal of Marketing Research*, 47 (5), 910-919.
- Weinstein, Neil D. (1998), "Accuracy of Smokers' Risk Perceptions," *Annals of Behavioral Medicine*, 20, 135-140.

Weinstein, Neil D., Paul Slovic, and Ginger Gibson (2004), "Accuracy and Optimism in Smokers' Beliefs about Quitting," *Nicotine & Tobacco Research*, 6 (3), S375-S380.

Wood, Wendy and David T. Neal (2007), A New Look at Habits and the Habit-Goal Interface, *Psychological Review*, 114, 843-863.

Wood, Wendy and David T. Neal (2009), "The Habitual Consumer," *Journal of Consumer Psychology*, 19, 579-592.

ANNEX A: CURRICULUM VITAE OF PROFESSOR RAVI DHAR

RAVI DHAR
Yale School of Management
135 Prospect Street
Yale University
New Haven, CT 06511
(203) 432-5947

Employment

George Rogers Clark Professor of Management	2005 - Present
Professor of Psychology (<i>joint appointment</i>)	2003 – Present
Director, Yale Center for Customer Insights	2004 – Present
Professor of Marketing,	2000 – Present
Associate Professor of Marketing,	1997 - 2000
Assistant Professor of Marketing	1992 - 1997
Yale School of Management	

Other Appointments

Visiting Faculty, HEC Paris	Summer 1996
Visiting Associate Professor, Stanford University	Spring 1998
Visiting Professor, Erasmus University	Summer 2000, 2001
Visiting Professor, New York University	Spring 2005, Spring 2010

Education

Haas School of Business, UC Berkeley	1988-1992
Ph. D. (Business Administration)	1992
M.S. (Business Administration)	1990
Indian Institute of Management	1987
M.B.A.	
Indian Institute of Technology	1985
B.Technology	

Academic Honors and Fellowships

Finalist, O'Dell Award, 2008
Winner, O'Dell Award 2005
Finalist, O'Dell Award, 2004
Finalist, Paul Green Award, 2004
AMA Consortium Faculty Fellow, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010
INFORMS Doctoral Consortium Faculty – Multiple Years
ACR Doctoral Consortium Faculty – Multiple Years
John A. Howard Doctoral Dissertation Award (Honorable Mention), 1993
AMA Doctoral Consortium Fellow, 1991

Research Interests

Consumer Behavior	Marketing Strategy
Judgment and Decision Making	Branding
E-Commerce	Behavioral Finance

Teaching Interests

Marketing Management	Consumer Behavior
Marketing Strategy	Behavioral Decision Theory
Financial Services	E-Commerce Marketing

Professional Affiliation (Member)

American Marketing Association
Association for Consumer Research
Society of Judgment and Decision Making

Professional Activities

Editorial Board, *Journal of Consumer Research*, 1997 – Present, Associate Editor
Journal of Consumer Psychology, 1997 – 2002, 2005 - Present

Journal of Marketing Research, 2001 – Present, Area Editor

Journal of Marketing, 2005 - Present

Marketing Letters, 2000 - Present

Marketing Science, 2002- Present, Area Editor

Occasional Reviewer, *Marketing, Management, Psychology Journals, NSF, etc.*

Publications in Journals

Approximate Number of Citations in Google Scholar: 2500+

1. “Price Framing Effects on Purchase of Hedonic and Utilitarian Bundles,” (with U. Khan), *Journal of Marketing Research*, forthcoming.
2. “Making Products Feel Special: When Metacognitive Difficulty Enhances Evaluation,” (with A. Pocheptsova and A. Labroo), *Journal of Marketing Research*, forthcoming.
3. “Modeling the Under Reporting Bias in Panel Survey Data,” (with Sha Yang and Yi Zhao) *Marketing Science*, 2010.
4. " The Effect of Decision Order on Purchase Quantity Decisions,” (with I. Simonson and S. M. Nowlis), *Journal of Marketing Research*, 2010.
5. Tradeoffs and Depletion in Choice,” (with N. Novemsky, J. Wang, R. Baumeister), *Journal of Marketing Research*, 2010.

6. Opportunity Cost Neglect" (with S. Frederick, N. Novemsky, J. Wang, and S. Nowlis), *Journal of Consumer Research*, 2009.
7. "Anticipating Adaptation to Products" (with J. Wang and N. Novemsky), *Journal of Consumer Research*, 2009.
8. Deciding Without Resources: Psychological Depletion and Choice in Context," (with O. Amir, A. Pocheptova, and R. Baumeister), *Journal of Marketing Research*, 2009.
9. Customization Procedures and Customer Preferences," (with A. Valenzuela and F. Zettelmeyer), *Journal of Marketing Research*, 2009.
10. "Beyond Rationality: The Content of Preferences," (with N. Novemsky), *Journal of Consumer Psychology*, 2008.
11. "Of Frog Wines and Frowning Watches: Semantic Priming of Perceptual Features and Brand Evaluation," (with A. Labroo and N. Schwarz), *Journal of Consumer Research*, 2008.
12. "When Thinking Beats Doing: The Role of Optimistic Expectations in Goal-Based Choice," (with A. Fishbach and Y. Zhang), 2007, *Journal of Consumer Research*.
13. "Seeing The Forest Or The Trees: Implications of Construal Level Theory for Consumer Choice," (with E. Kim), *Journal of Consumer Psychology*, 2007
14. "Where There Is a Way, Is There a Will? The Effect of Future Choices on Self-Control" (with U. Khan), *Journal of Experimental Psychology: General*, 2007
15. Preference Fluency in Choice," (with N. Novemsky, N. Schwarz, and I. Simonson), 2007, *Journal of Marketing Research*.
16. "The Shopping Momentum Effect," (with J. Huber and U. Khan), 2007, *Journal of Marketing Research*.
17. "Institutional Perspectives in Real Estate Investing," (with W. Goetzmann), 2006, *Journal of Portfolio Management*.
18. "Are Rheumatologists' Treatment Decisions Influenced by Patients Age?," (with L. Fraenkel and N. Rabidou)," 2006, *Rheumatology*.
19. "Sub-goals as Substitutes or Complements: The Role of Goal Accessibility," (with A. Fishbach and Y. Zhang), 2006, *Journal of Personality & Social Psychology*.
20. "Up Close and Personal: A Cross Sectional Study of the Disposition Effect" (with N. Zhu), *Management Science*, 2006.
21. "Licensing Effect in Consumer Choice," (with U. Khan), *Journal of Marketing Research*, 2006.
22. "Goals as excuses or guides: The liberating effect of perceived goal progress on choice," (with A. Fishbach), *Journal of Consumer Research*, 2005.

23. "Goal Fulfillment and Goal Targets in Sequential Choice," (with N. Novemsky), *Journal of Consumer Research*, 2005.
24. "Towards extending the Compromise Effect to Complex Buying Contexts," (with Anil Menon and Bryan Maach), *Journal of Marketing Research*, 2004.
25. "To Buy or Not to Buy: Response Mode Effects on Consumer Choice," (with S. Nowlis), *Journal of Marketing Research*, 2004.
26. "Hedging Customers," (with R. Glazer), *Harvard Business Review*, 2003.
27. "The Effect of Forced Choice on Choice," (with I. Simonson), *Journal of Marketing Research*, 2003.
28. "Coping with Ambivalence: The Effect of removing a "fence sitting" option on Consumer Attitude and Preference Judgments (with B. Kahn and S. Nowlis), *Journal of Consumer Research*, 2002.
29. "Consumer Psychology: In Search of Identity," (with Z. Carmon, A. Drolet, S. Nowlis, and I. Simonson), *Annual Review of Psychology*, 2001.
30. "An Empirical Analysis of the Determinants of Category Expenditure," (with W. Putsis), *Journal of Business Research*, 2001.
31. "Trying Hard or Hardly Trying: An Analysis of Context Effects in Choice" (with S. Nowlis and S. Sherman), *Journal of Consumer Psychology*, September 2000.
32. "Consumer Choice between Hedonic and Utilitarian Goods," (with K. Wertenbroch), *Journal of Marketing Research*, February 2000.
33. "Assessing the Competitive Interaction Between Private Labels and National Brands," (with R. Cotterill and W. Putsis), *Journal of Business*, January 2000.
34. "Comparison Effects on Preference Construction," (with S. Nowlis and S. Sherman), *Journal of Consumer Research*, December 1999.
35. "The Effect of Time Pressure on Consumer Choice Deferral," (with S. Nowlis), *Journal of Consumer Research*, March, 1999.
36. "Making complementary choices in consumption episodes: Highlighting Versus Balancing," (with I. Simonson), *Journal of Marketing Research*, February, 1999.
37. "The Many Faces of Competition," (with W. Putsis), *Marketing Letters*, July, 1998.
38. "Consumer Preference for a No-Choice Option," *Journal of Consumer Research*, September, 1997.
39. "Context and Task Effects on Choice Deferral," *Marketing Letters*, January, 1997.
40. "The Effect of Decision Strategy on the Decision to Defer Choice," *Journal of Behavioral Decision Making*, December, 1996.

41. "The Effect of Common and Unique features in Consumer Choice," (with S. J. Sherman), *Journal of Consumer Research*, December, 1996.
42. "Similarity in Context: Cognitive Representation and the Violation of Preference Invariance in Consumer Choice," (with R. Glazer), *Organizational Behavior and Human Decision Processes*, September, 1996.
43. "The Effect of the focus of comparison on consumer preferences," (with I. Simonson), *Journal of Marketing Research*, November, 1992.

Publications in Book Chapters / Managerial Summary

1. "The Power of Customer's Mindset," (with Kelly Goldsmith and Jing Xu), *Sloan Management Review*, 2010.
2. "Giving Consumers License to Enjoy Luxury," (with U. Khan and S. Schmidt), *Sloan Management Review*, 2010.
3. "Brand Permission: A Conceptual and Managerial Framework," (with Tom Meyvis), In Handbook on Brand and Experience Management, Bernd H. Schmitt and David L. Rogers (Eds.), Elgar Publishing, Northampton, MA, 2008.
4. "Dynamics of goal-based choice," (with A. Fishbach), In Handbook of Consumer Psychology, (eds. C. P. Haugtvedt, P.M. Herr & F. R. Kardes), Erlbaum Press, 2007.
5. "A Behavioral Decision Theoretic Perspective on Hedonic and Utilitarian Choice," (with U. Khan and K. Wertenbroch) in Inside Consumption: frontiers of Research on Consumer Motives, Goals, and Desires, (eds. S. Ratneshwar and David Glen Mick), London: Routledge, 2005.
6. "Customer Relations Online," in Wiley Next Generation of Business Thinkers, (ed. Subir Chowdhury), 2004.
7. "Defining Customers' Needs and Values for Marketing Success," in Inside the Minds: Textbook Marketing, Aspatore Press, 2003.
8. "The Online Store," (with D. R. Wittink), in Managing Customer Relationships (eds. Martha Rogers and Don Peppers), Wiley, 2003.
9. "Choice Deferral," in The Elgar Companion to Consumer Research and Economic Psychology (eds. P. Earl and S. Kemp), 1999.

Select Working Papers / Papers Under Review

1. "Seeing and Comparing Brand Extensions: The Importance of the Consumer Decision Environment." (with T. Meyvis and K. Goldsmith), under second review, *Journal of Marketing Research*.

2. "When Guilt Begets Pleasure: The Positive Effect of a Negative Emotion," (with K. Goldsmith and E. Kim), revising for second round, *Journal of Marketing Research*.
3. "Ironic Effects of Goal Activation on Choice," (with K. Goldsmith), under first review.
4. "The Effect of Goal Breadth on Consumer Preferences," (with E. Kim), under first review.
5. "Choosing between Apples or Apples and Oranges: The Role of Mental Construal in Comparable vs. Non-Comparable Choices," (with E. Kim and U. Khan), under first review.
6. "Can Investors Multiply and Divide: Investors' response to Stock Splits," (with N. Zhu and Dan Ariely).
7. "Choice Set Effects on Consumption Utility," (with K. Wertenbroch), under first review.
8. "Category Expenditure and Promotion: Can Private Labels Expand the Pie," (with W. Putsis), Working Paper.
9. "Mindset over Matter: The Interplay between Goals and Preferences," (with A. Pochepstova), Working Paper.
10. "Sophisticated by Design: Nonconscious Influences on Consumer Choice," (with T. Andrew Poehlman, Eric Luis Uhlmann, and John A. Bargh).

Conference Proceedings Publications

1. Constructing preferences: The role of comparisons in consumer judgment and choice," (with S. Zhang) *Proceedings of the Association for Consumer Research*, University of Chicago Press (1999).
2. "Sequential Choices and Uncertain Preferences," *Proceedings of the Association for Consumer Research*, University of Chicago Press (1997).
3. "Causes and Effects of Reference Effects in Choice," *Proceedings of the Association for Consumer Research*, University of Chicago Press (1997).
4. "New Directions in Mental Accounting," *Proceedings of the Association for Consumer Research*, University of Chicago Press (1995).
5. "Decision Difficulty and Uncertain Preferences: Implications for Consumer Choice," *Proceedings of the Association for Consumer Research*, University of Chicago Press (1994).
6. "Behavioral Decision Research: Theory and Applications," *Proceedings of the Association for Consumer Research*, University of Chicago Press (1993).

7. "To Choose Or Not To Choose: This is the Question," *Proceedings of the Association for Consumer Research*, University of Chicago Press (1992).

Invited and Conference Presentations

Invited Academic Presentations (* denotes multiple presentations)

Boston College
Carnegie-Mellon University
*Columbia University**
*Cornell University**
*Duke University**
Harvard University
Hong Kong University of Science and Technology
*IIPM**
*INSEAD**
Indiana University
Korea University
*London Business School**
*MIT**
National University of Singapore
*New York University**
*Northwestern University**
*Stanford University**
Texas A&M University
Tilburg University
Tulane University
University of British Columbia (planned)
*University of California, Berkeley**
*University of California, Los Angeles**
*University of Chicago**
University of Delaware
University of Colorado
University of Florida
University of Houston
University of Miami
University of Maryland
University of Massachusetts, Amherst
*University of Michigan**
University of North Carolina
*University of Pennsylvania**
*University of Rotterdam**
University of Texas, Austin
University of Utah
*University of Toronto**
*Washington University, St. Louis**

Conference Presentations (Over 150 presentations at conferences, consortiums, keynotes, symposiums, workshops, etc.) Recent presentations include:

Keynote Addresses to Practitioners
Choice Symposium
CEO Roundtables, New York and New Haven
CMO Roundtables
ACR
Informs
Judgment and Decision Making
Behavioral Decision Research in Management
Society of Consumer Psychology

ANNEX B: CURRICULUM VITAE OF PROFESSOR STEPHEN M. NOWLIS

Stephen M. Nowlis

Olin Business School, Washington University
One Brookings Dr., Campus Box 1133
St. Louis, MO 63130
Phone: 314-935-5113
email: nowlis@wustl.edu
<http://www.nowlis.com>

Education

Ph.D. Business Administration (Marketing concentration), Haas School of Business,
University of California at Berkeley, 1994

Thesis: Competitive Brand Strategies of High-Tier and Low-Tier Brands: A
Consumer Choice Perspective

M.B.A. Haas School of Business, University of California at Berkeley, 1990

B.A. Economics, with Distinction, Stanford University, 1986

Academic employment

August A. Busch, Jr. Distinguished Professor of Marketing, Olin Business School,
Washington University, St. Louis, MO, 2010 -

AT&T Distinguished Research Professor of Marketing, WP Carey School of
Business, Arizona State University, Tempe, AZ, 2003-2009

Associate Professor, WP Carey School of Business, Arizona State University,
Tempe, AZ, 2000-2003

Assistant Professor, WP Carey School of Business, Arizona State University,
Tempe, AZ, 1996-2000

Assistant Professor, Washington State University, Pullman, WA, 1994-1996

Professional service

Associate Editor, *Journal of Marketing Research*, 2009-

Associate Editor, *Journal of Consumer Psychology*, 2008-

Associate Editor, *Journal of Consumer Research*, 2002-2008

Editorial Review Board, *Journal of Marketing*, 2005-

Editorial Review Board, *Journal of Consumer Research*, 2000-2001, 2008-

Editorial Review Board, *Marketing Letters*, 2001-

Editorial Review Board, *Journal of Marketing Research*, 2001-2008

Ad-Hoc Reviewer, *Marketing Science*, *Management Science*, *Journal of Retailing*,
Current Anthropology, *Nonprofit & Voluntary Sector Quarterly*, *Industrial and*

Corporate Change, Reviewer for Association for Consumer Research conferences, American Marketing Association conferences, AMA John A. Howard Doctoral Dissertation Competition, Society for Consumer Psychology conferences. Program Committee, Association for Consumer Research conference, 2001 and 2003. Representative of the Society for Consumer Psychology at the main meeting of the American Psychological Association, 2001. Advisory Board for the MSI-JCP Research Competition on Product Assortment and Variety-Seeking in Consumer Choice, 2004.

Honors and Awards

A January 2009 study in the *Journal of Marketing* (by Seggie and Griffith) found that I am the 18th most productive marketing professor in the world in terms of my publications.

My doctoral student, Maura Scott, won Honorable Mention (2nd place) for the 2009 Ferber Award (best paper based on a dissertation), for our paper: Scott, Maura L., Stephen M. Nowlis, Naomi Mandel, and Andrea C. Morales (2008), "The Effects of Reduced Food Size and Package Size on the Consumption Behavior of Restrained and Unrestrained Eaters," *Journal of Consumer Research*, 35 (October), 391-405.

Winner of the 2008 Emerald Management Reviews Citation of Excellence Award for "A Bite to Whet the Reward Appetite: The Influence of Sampling on Reward-Seeking Behaviors." This award means that this article was selected as one of the top 50 business and management articles from 15,000 published in 2008, and the only article from *Journal of Marketing Research* to receive this award.

Co-Chair of AMA doctoral consortium, 2007

Co-Chair of ACR doctoral symposium, 2006

Ferber Award Judge, 2005

Finalist for Paul Green Award, 2005

Outstanding Reviewer Award, *Journal of Consumer Research*, 2002.

Winner of the 2001 William F. O'Dell Award. Given for the article appearing in the *Journal of Marketing Research* in 1996 that has made the most significant long-term contribution to the marketing discipline in the five year period 1996-2001.

Finalist (top 4) for the 2002 William F. O'Dell Award. Given for the article appearing in the *Journal of Marketing Research* in 1997 that has made the most significant long-term contribution to the marketing discipline in the five year period 1997-2002.

Winner of the 2001 Early Career Contribution Award from the Society for Consumer Psychology – Sheth Foundation, Division 23, American Psychological Association. Given annually to the most productive researcher in the field of consumer behavior/marketing who has been a faculty member for less than ten years.

Winner of Best Theoretical Paper award (Stephen M. Nowlis and Deborah B. McCabe), “Online vs. Off-line Consumer Decision Making: The Effect of the Ability to Physically Inspect Merchandise,” at 2nd INFORMS "Marketing Science and the Internet: Understanding Consumer Behavior on the Internet," conference, sponsored by Andersen Consulting and the Marshall School of Business, April 29 - 30, 2000. Prize paid \$2500.

Voted Outstanding Graduate Student Instructor, Haas School of Business, University of California at Berkeley, 1992-1993

Winner of Delbert Duncan Award for Best Marketing MBA student, 1988-1990

Publications

Nowlis, Stephen M., Ravi Dhar, and Itamar Simonson (2010), “The Effect of Decision Order on Purchase Quantity Decisions,” *Journal of Marketing Research*, 47 (August), 725-737.

Griskevicius, Vladas, Michelle Shiota, and Stephen M. Nowlis (2010), “The Many Shades of Rose-Colored Glasses: An Evolutionary Approach to the Influence of Different Positive Emotions,” *Journal of Consumer Research*, 37 (2), 238-250.

Frederick, Shane, Nathan Novemsky, Jing Wang, Ravi Dhar, and Stephen M. Nowlis (2009), “Opportunity Cost Neglect,” *Journal of Consumer Research*, 36 (4), 553-561.

Scott, Maura L., Stephen M. Nowlis, Naomi Mandel, and Andrea C. Morales (2008), “The Effects of Reduced Food Size and Package Size on the Consumption Behavior of Restrained and Unrestrained Eaters,” *Journal of Consumer Research*, 35 (October), 391-405. This paper won Honorable Mention for the 2009 Ferber Award.

Wadhwa, Monica, Baba Shiv, and Stephen M. Nowlis (2008), “A Bite to Whet the Reward Appetite: The Influence of Sampling on Reward-Seeking Behaviors,” *Journal of Marketing Research*, 45 (August), 403-413. This paper won the 2008 Emerald Citation of Excellence Award.

Mandel, Naomi and Stephen M. Nowlis (2008), “The Effect of Making a Prediction about the Outcome of a Consumption Experience on the Enjoyment of that Experience,” *Journal of Consumer Research*, 35 (June), 9-20.

Kahn, Barbara E., Mary Frances Luce, and Stephen M. Nowlis (2006), “Debiasing Insights from Process Tests,” *Journal of Consumer Research*, 33 (June), 131-138.

- Nowlis, Stephen M. and Baba Shiv (2005), "The Influence of Consumer Distractions on the Effectiveness of Food Sampling Programs," *Journal of Marketing Research*, 42 (May), 157-168.
- Shiv, Baba, Alexander Fedorikhin, and Stephen M. Nowlis (2005), "Interplay of the Heart and Mind in Decision Making," in *Inside Consumption: Frontiers of Research on Consumer Motives, Goals, and Desire*, ed. Ratti Ratneshwar and David Mick.
- Nowlis, Stephen, Naomi Mandel, and Deborah Brown McCabe (2004), "The Effect of a Delay Between Choice and Consumption on Consumption Enjoyment," *Journal of Consumer Research*, 31 (December), 502-510.
- Shiv, Baba and Stephen M. Nowlis (2004), "The Effect of Distractions while Tasting a Food Sample: The Interplay of Informational and Affective Components in Subsequent Choice," *Journal of Consumer Research*, 31 (December), 599-608.
- Dhar, Ravi and Stephen M. Nowlis (2004), "To Buy or Not to Buy: Response Mode Effects on Consumer Choice," *Journal of Marketing Research*, 41 (November), 423-432.
- Nowlis, Stephen M. and Deborah B. McCabe (2004), "The Effect of Examining Actual Products or Product Descriptions on Consumer Preference," *Journal of Consumer Psychology*, 13 (4), 431-439.
- Nowlis, Stephen M., Barbara E. Kahn, and Ravi Dhar (2002), "Coping with Ambivalence: The Effect of Removing a Neutral Option on Consumer Attitude and Preference Judgments," *Journal of Consumer Research*, 29 (December), 319-334.
- Lemon, Katherine and Stephen M. Nowlis (2002), "Developing Synergies Between Promotions and Brands in Different Price-Quality Tiers," 39 (May) *Journal of Marketing Research*, 171-185.
- Itamar Simonson, Ziv Carmon, Ravi Dhar, Aimee Drolet, Stephen M. Nowlis (2001), "Consumer Research: In Search of Identity," *Annual Review of Psychology*, 52, 249-275.
- Simonson, Itamar and Stephen M. Nowlis (2000), "The Role of Explanations and Need for Uniqueness in Consumer Decision Making: Unconventional Choices Based on Reasons," *Journal of Consumer Research*, 27 (June), 49-68.
- Dhar, Ravi, Stephen M. Nowlis, and Steven J. Sherman (2000), "Trying Hard or Hardly Trying: Context Effects in Choice," *Journal of Consumer Psychology*, 9 (4), 189-200.

Nowlis, Stephen M. and Itamar Simonson (2000), "Sales Promotions and the Choice Context as Competing Influences on Consumer Decision Making," *Journal of Consumer Psychology*, 9 (1), 1-16.

Dhar, Ravi, Stephen M. Nowlis, and Steven J. Sherman (1999), "Comparison Effects On Preference Construction," *Journal of Consumer Research*, 26 (December), 293-306.

Ravi Dhar and Stephen M. Nowlis (1999), "The Effect of Time Pressure on Consumer Choice Deferral," *Journal of Consumer Research*, 25 (March), 369-384.

Nowlis, Stephen M. and Itamar Simonson (1997), "Attribute-Task Compatibility as a Determinant of Consumer Preference Reversals," *Journal of Marketing Research*, 34 (May), 205-218. This paper was a finalist for the 2002 O'Dell Award. A Brief of this paper is written by John T. Landry in *Harvard Business Review* (1996), 74 (November/December), 13. This article was reprinted in *The Construction of Preference* (2006), eds. Sarah Lichtenstein and Paul Slovic, Cambridge University Press: New York, NY, p. 192-219.

Nowlis, Stephen M. and Itamar Simonson (1996), "The Effect of New Product Features on Brand Choice," *Journal of Marketing Research*, 33 (February), 36-46. This paper won the 2001 O'Dell Award.

Nowlis, Stephen M. (1995), "The Effect of Time Pressure on the Choice Between Brands that Differ in Quality, Price, and Product Features," *Marketing Letters*, 6(4), 287-295.

Simonson, Itamar, Stephen M. Nowlis, and Katherine Lemon (1993), "The Effect of Local Consideration Sets on Global Choice Between Lower Price and Higher Quality," *Marketing Science*, 12 (4), 357-377

Simonson, Itamar, Stephen M. Nowlis, and Yael Simonson (1993), "The Effect of Irrelevant Preference Arguments on Consumer Choice," *Journal of Consumer Psychology*, 2 (3), 287-306.

Industry experience

Assistant Buyer, May Company Department Stores, Los Angeles, CA, 1986-1988

Expert Witness Consulting, 2001-

Professional affiliations

American Marketing Association
Association for Consumer Research
International Trademark Association
Society for Consumer Psychology

Conference presentations

“The Effect of Goal Setting on Consumption and Consumer Well-Being,” with Maura Scott, *Association for Consumer Research* conference, Pittsburgh, PA, October 2009.

“The Many Shades of Rose-Colored Glasses: An Evolutionary Approach to Positive Emotions,” with Vladas Griskevicius and Michelle Shiota, *Society for Consumer Psychology* conference, Las Vegas, NV, February 2009.

“The Effect of Self-Awareness on Goal Setting, Consumption, and Consumer Well-Being,” with Maura Scott, *Society for Consumer Psychology* conference, Las Vegas, NV, February 2009.

“Smelling Your Way to Satiety: Impact of Odor Satiation on Subsequent Consumption-Related Behaviors,” with Baba Shiv and Monica Wadhwa, *Society for Consumer Psychology* conference, Las Vegas, NV, February 2009.

“Consumer Usage of Ultra-Concentrated Products,” with Maura Scott and Naomi Mandel, *Association for Consumer Research* conference, San Francisco, October 2008.

“A Bite to Whet the Reward Appetite: The Influence of Sampling on Reward-Seeking Behaviors,” with Baba Shiv and Monica Wadhwa, *Association for Consumer Research* conference, Memphis, TN, October 2007.

“Do Diet Foods Lead to Increased Consumption? The Effect of Reduced Food Sizes and Packages on the Consumption Behavior of Dieters and Non-Dieters,” with Maura Scott, Naomi Mandel, and Andrea Morales, *Association for Consumer Research* conference, Memphis, TN, October 2007.

“The Effect of Making a Prediction about the Outcome of a Consumption Experience on the Enjoyment of that Experience,” (with Naomi Mandel), *Society for Consumer Psychology* conference, Las Vegas, NV, February 2007.

“Social Norms and Shelf Space Strategies,” (with Detra Montoya and Naomi Mandel), *Society for Consumer Psychology* conference, Las Vegas, NV, February 2007.

“A Bite to Whet the Reward Appetite: Influence of Sampling on Appetitive Behaviors,” (with Baba Shiv and Monica Wadhwa), *Association for Consumer Research* conference, San Antonio, TX, September 2005.

“The Effect of Predictions on the Enjoyment of a Consumption Experience,” (with Naomi Mandel), *Association for Consumer Research* conference, San Antonio, TX, September 2005.

“The Effect of Distractions while Tasting a Food Sample: The Interplay of Informational and Affective Components in Subsequent Choice,” (with Baba Shiv), *Society for Consumer Psychology* conference, San Francisco, CA, February 2004.

“The Effect of Tradeoff Resolution Order on Consumer Choice,” (with Ravi Dhar and Itamar Simonson), *Association for Consumer Research* conference, Toronto, Canada, October 2003.

“The Effect of a Forced Delay after Choice on Consumption Enjoyment,” (with Deborah McCabe and Naomi Mandel), *Society for Consumer Psychology* conference, New Orleans, LA, February 2003.

“Effects of Distraction While Consuming a Food Item: Will it Increase or Decrease Subsequent Choice,” (with Baba Shiv), *Society for Consumer Psychology* conference, New Orleans, LA, February 2003.

“The Effect of a Delay between Choice and Consumption on Consumption Preference,” (with Deborah McCabe and Naomi Mandel), *Association for Consumer Research* conference, Atlanta, GA, October 2002.

“Effects of Distraction while Consuming a Food Item: Will it Increase or Decrease Subsequent Choice?,” (with Baba Shiv), *Association for Consumer Research* conference, Atlanta, GA, October 2002.

"Consumer research in computer mediated environments," (with Sharon Shavitt), *Association for Consumer Research* doctoral symposium, Atlanta, GA, October 2002.

“The Effects of Generating Options on Judgment and Choice,” (with Ravi Dhar), *Association for Consumer Research* conference, Austin, TX, October 2001.

“Developing Synergies Between Promotional and Brand Strategies,” (with Katherine Lemon), *Association for Consumer Research* conference, Salt Lake City, UT, October 2000.

“The Effect of the Ability to Inspect Merchandise on the Likelihood of Choosing Products Online,” (with Deborah B. McCabe), *American Marketing Association* summer marketing educators’ conference, Chicago, IL, August 2000.

“Managerial Strategy Making: Problem Structuring and Alternative Generation by Marketing Managers,” (with Gabriel R. Gonzales), *American Marketing Association* summer marketing educators’ conference, Chicago, IL, August 2000.

"Online vs. Offline Shopping Experiences," (with Deborah Brown McCabe), *INFORMS "Marketing Science and the Internet"* Conference, USC, Los Angeles, April 2000.

“The Effect of Physically Inspecting Merchandise on Product Choice in Store and Online Environments,” (with Deborah McCabe), *Haring Symposium*, Indiana University, Bloomington, IN, April 2000.

“The Effect of Alternative Generation on Preference for Hedonic and Utilitarian Goods,” (with Ravi Dhar and Steven J. Sherman), *Society for Judgment and Decision Making*, Los Angeles, CA, November 1999.

“Comparison Processes in Consumer Choice,” (with Ravi Dhar and Steven J. Sherman) *Association for Consumer Research* conference, Columbus, OH, October 1999.

“Brand Switching Between Quality Tiers: The Role of Price Promotions and the Choice Context,” (with Itamar Simonson), *Marketing Science* Conference, Berkeley, CA, March 1997.

Co-Chair of session, “How Do I Prefer Thee? Let the Way Decide for Me: An Examination of Task Effects and Consumer Preference Formation,” (with Ziv Carmon) and presenter of “The Effect of Providing Reasons and Being Evaluated by Others on Consumer Decision Making,” *Association for Consumer Research* conference, Tucson, AZ, October 1996.

Chair of session, “Moderators of Consumer Response to Promotions,” and presenter of “The Effect of Choice Set Composition on Consumer Response to Sales Promotions,” *Association for Consumer Research* conference, Minneapolis, MN, October 1995.

Co-chair of session, “The Constructive nature of Consumer Response to Differential Product Advantages,” (with Ziv Carmon), and presenter of “The Effect of Response Mode on Consumer Decisions Involving Overall Brand Quality, Price, and Product Features,” *Association for Consumer Research* conference, Boston, MA, October 1994

Co-chair of session, “A Later Mover Advantage? The Impact of Order of Entry and Brand Characteristics on Consumer Preferences,” (with Jennifer Aaker), and presenter of “The Effect of Differentiating Product Features on Brand Choice,” (with Itamar Simonson), *Association for Consumer Research* conference, Nashville, TN, October 1993

“Influences on the Decision to Purchase Product Enhancements,” (with Itamar Simonson), National *ORSA/TIMS* Conference, San Francisco, CA, November 1992

“The Effect of Paired Comparisons and Product Display Format on Choices Between Lower Price and Higher Quality,” (with Itamar Simonson and Katherine Lemon), *Association for Consumer Research* conference, Vancouver, British Columbia, October 1992.

“Influencing Consumer Preferences Between High and Low Price Alternatives,”
(with Itamar Simonson and Katherine Lemon), *Marketing Science* Conference,
London, England, July 1992.

“Managing the Marketing Mix to Increase Frequent use of Consumer Services,”
(with Jukka M. Laitamaki and Ross Bellingham), *AMA’s Services Marketing*
Conference, Chicago, IL, October 1990.