

The copyright of this thesis vests in the author. No quotation from it or information derived from it is to be published without full acknowledgement of the source. The thesis is to be used for private study or non-commercial research purposes only.

Published by the University of Cape Town (UCT) in terms of the non-exclusive license granted to UCT by the author.

THE EFFECTS OF PARTNER TYPE ON CONDOM CHOICE AND CONDOM USE

S ZONDO (ZNDSIZ004)

A dissertation submitted in partial fulfillment of the requirements for the award of the degree
of Master of Arts (Research Psychology)

Supervisor: Kevin G. F. Thomas, Ph.D.

Department of Psychology

Faculty of the Humanities

University of Cape Town

2010

COMPULSORY DECLARATION

This work has not been previously submitted in whole, or in part, for the award of any degree. It is my own work. Each significant contribution to, and quotation in, this dissertation from the work, or works, of other people has been attributed, and has been cited and referenced.

Signature:

Date:

ACKNOWLEDGEMENTS

Firstly, I Thank the Almighty for all His Blessings and for making the completion of this work and degree possible.

Dr. Kevin Tomas, University of Cape Town: The supervisor of this work. I would like to thank him for his guidance throughout this project. I have learnt so much from him that I am certain will be of guidance in the future.

Dr Jonathan Ipser, University of Cape Town, for his guidance in the programming of the Implicit Associations Test .Without him this study would not have been conducted.

I would also like to thank Dr Charikleia-Maria Protogerou for her invaluable input into the thesis.

Scholarships: The Harry Crossley Research Foundation and National Research Foundation. I would like to thank these funders. Without this financial assistance this project would not have been possible.

To my family and dear friends, Mr. Hlengani Mathema, and Madalitso Phiri, a Big Thank you for your support and guidance.

ABSTRACT

South Africa has one of the world's highest rates of HIV infection. Little previous research has focused on the relationship between individuals in different sexual contexts and their attitudes toward condom choice. I tested the hypotheses that (a) implicit and explicit measures of attitudes towards condom choice would show that individuals in casual sexual contexts, compared to those in the context of exclusive sexual relationships, would spontaneously associate more strongly with brand-name condoms over generic condoms, and (b) there would be a positive correlation between explicit and implicit attitudes towards condom choice. Explicit attitudes towards condom choice and condom use were assessed by means of self-report questionnaires. The Implicit Attitudes Test (IAT) was used to measure the implicit association between condom choice and self-concept. The obtained data disconfirmed the hypothesis that people in casual sexual relationships would more readily associate with brand-name condoms than generic condoms. The hypothesis that there would be a positive correlation between explicit attitudes and implicit attitudes towards condom choice was partially confirmed, however. The implications of these findings are discussed in relation to the context of HIV/AIDS in South Africa.

Keywords: sexual context; condom choice; condom use; Implicit Attitudes Test; HIV/AIDS

TABLE OF CONTENTS

| | |
|-------------------------------------------------|-----------|
| TITLE PAGE | 1 |
| COMPULSORY DECLARATION | 2 |
| ACKNOWLEDGEMENTS | 3 |
| ABSTRACT | 4 |
| LIST OF TABLES | 7 |
| LIST OF FIGURES | 8 |
| CHAPTER ONE: INTRODUCTION AND BACKGROUND | 9 |
| LITERATURE REVIEW | 10 |
| Behavioral Economics | 12 |
| Decision Making | 19 |
| Social Cognition | 20 |
| Implicit Associations Test | |
| Hypotheses | 35 |
| CHAPTER TWO: METHODOLOGY | 36 |
| Research Design and setting | 36 |
| Participants | 36 |
| Materials | 37 |
| Procedure | 47 |
| CHAPTER THREE: RESULTS | 50 |
| Demographic Characteristics of sample | 50 |
| Hypothesis 1 | 51 |
| Hypothesis 2 | 56 |

| | |
|------------------------------------------------------------------|------------|
| | 6 |
| Hypothesis 3 | 57 |
| CHAPTER FOUR: DISCUSSION | 60 |
| Summary of Results | 62 |
| Limitation and proposed Solutions for Future Research | 67 |
| Recommendation Derived from Study | 74 |
| Conclusion | 74 |
| REFERENCES | 75 |
| APPENDIX A: Demographic Questionnaire | 91 |
| APPENDIX B: Relationship and Sexual History Questionnaire | 92 |
| APPENDIX C: Attitude Towards Condom Scale | 96 |
| APPENDIX D: Informed Consent Form | 98 |
| APPENDIX E: Sign Up Forms | 101 |

| | |
|------------------------------------------------------------------|------------|
| | 6 |
| Hypothesis 3 | 57 |
| CHAPTER FOUR: DISCUSSION | 60 |
| Summary of Results | 62 |
| Limitation and proposed Solutions for Future Research | 67 |
| Recommendation Derived from Study | 74 |
| Conclusion | 74 |
| REFERENCES | 75 |
| APPENDIX A: Demographic Questionnaire | 91 |
| APPENDIX B: Relationship and Sexual History Questionnaire | 92 |
| APPENDIX C: Attitude Towards Condom Scale | 96 |
| APPENDIX D: Informed Consent Form | 98 |
| APPENDIX E: Sign Up Forms | 101 |

LIST OF TABLES

| | |
|------------------------------------------------------------------|----|
| Table 1: <i>Pictures of Brand and Generic condoms in the IAT</i> | 44 |
| Table 2: <i>Sequence of Blocks for the IAT</i> | 46 |
| Table 3: <i>Summary of IAT Scoring Procedure</i> | 49 |
| Table 4: <i>Demographic charecteristics of sample</i> | 50 |

LIST OF FIGURES

| | |
|--------------------------------------------------------------------------------------------------------------------|----|
| Figure 1. Histogram for the IAT Block 4 reaction times for Exclusive Relationship Group | 53 |
| Figure 2. <i>Histogram for the IAT Block 4 Reaction Times for Casual Sexual Group</i> | 53 |
| Figure 3. <i>Histogram for the IAT Block 7 Reaction Times for the Exclusvie Relationship Group</i> | 54 |
| Figure 4. <i>Histogram for the IAT Block 7 ReactionTimes for the Casual Relationship Group</i> | 54 |
| Figure 5. <i>Histogram for the IAT D scores for the Casual Relationship group and Exclusive Relationship Group</i> | 55 |
| Figure 6. <i>Box and whisker plot of the D scores for each study group</i> | 56 |

CHAPTER ONE: INTRODUCTION AND BACKGROUND

The principal endeavour of the current research thesis was to explore the impact of self-image congruency on condom preference in individuals in different sexual contexts. The research was motivated primarily by the HIV/AIDS epidemic in South Africa and by the notion that different consumption situations of products, whether consumed privately or publicly, will invariably induce and influence the choice and consumption of some products over others (Graeff, 1997). The latter notion of product choice, particularly brand choice, is chiefly built on the notion that consumers will often project either an actual or an ideal self-image, and choose particular brands consistent with that image, depending on the potential or particular context in which the product is to be consumed (Aaker, 1997, 1999; Ericksen, 1996; Foxall, 2005). More specifically, the research expands on the notion that many products possess symbolic features and that the consumption of goods depends as much on their social meaning as on their functional utility *per se*.

The particular product under consideration in the current thesis is condoms, and so the topic of focus is attitudes toward condom use in different sexual situations; in particular, I consider here differences in condom choice or condom preference among individuals in different kinds of sexual relationships. Even more specifically, the particular behaviour under investigation in the thesis is the choice of either brand-name condoms or generic condoms, and the variation in that behaviour with relationship status (either an exclusive relationship or casual uncommitted relationship).

The paper focuses on condoms for two primary reasons: firstly, in terms of prophylaxis, condoms are among the most viable forms of contraceptive choice against HIV/AIDS and other sexually transmitted diseases in South Africa (Abdool-Karim, Preston-White, Abdool-Karim et al, 1992; Shisana et al., 2005). Secondly, condoms are conspicuous by their very nature: Their use is largely influenced by the user's perceptions and evaluations of their symbolic criteria (aesthetic and branding), and these can influence the purchase and use of certain condoms over others (Tillotson & Maharaj, 2001). Of specific interest here is the fact that, for the most part, the marketing of condoms relies heavily on images and may congruently relay the symbolic status of the user (Mulwo, Tomaselli, & Dalrymple, 2009) as individuals may choose particular condom brands over others, so as to impress their partners

(Parker, Nkosi, Birdsall, & Hajiyanis, 2004). Condom choices and condom preferences thus provide a fertile sub-field of HIV/AIDS research in that condoms, as products of purchase, may lead to an association between certain condom brand names and an individual's understanding of their self-concept.

Previous studies suggest that consumers tend to purchase products or brands that are perceived to be similar, in one way or another, to their own self-concept (Ericksen, 1996; Graeff, 1996; Mehta, 1999; Sirgy, 1982; Sirgy et al., 1997). This research seems to affirm that during the consumption process, there is an interaction between one's perception of one's self and the type of product one chooses to purchase over others; this process generates a subjective experience referred to as *self-image congruence* (Sirgy et al., 1997). Furthermore, the same body of research suggests that self-image congruence influences a variety of consumer behaviour phenomena (e.g., satisfaction, brand preferences, purchase intentions), and can encourage positive attitudes towards particular brands (Jamal, 2004; Jamal & Goode, 2001). By the same token, if the brand-related information is inconsistent with the consumer's self-concept, it is unlikely to gain his/her attention, acceptance, and retention (Heath & Scott, 1998).

Consumer research literature continues to be replete with examples that confirm that in addition to the effects of self-image congruence, consumers have a preference for different brands depending on the different consumption contexts in which they find themselves enmeshed, or in which they are most likely to find themselves situated (Belk, 1975; Dickson, 1982; Stayman & Deshpande, 1989). More especially, research has suggested that the evaluation of *privately* consumed products is more affected by *actual* congruence (i.e., the congruence between brand image and how consumers actually see themselves), whereas the evaluations of *publicly* consumed products are more affected by *ideal* congruence (i.e., the congruence between brand image and how consumers would ideally like to see and project themselves; Dolich, 1969; Ross, 1971). Otherwise stated, when a brand is publicly consumed, consumers appear to be interested in impressing others by their act of consumption of a particular product (Fennis & Pruyn, 2006). There is thus a consistent conceptual framework, emerging primarily from the field of behavioral economics, that both personality factors (intrinsic) and contextual factors (extrinsic) play a fundamental role in the purchase and choice of particular goods over others. As will be shown later, this theme is particularly germane to the endeavours of the current research project.

Specific Aims

One specific aim of this study was to address the dearth of *experimental* studies of attitudes toward condom use and condom choice in South Africa. Such a study may be a useful adjunct to the extant literature (which consists mainly of survey and focus-group studies) that questions why, despite increased distribution and availability and aggressive social marketing of condoms, the HIV infection rate in this country continues to climb (UNAIDS, 2006). The particular experimental tools utilised in the study were the Implicit Associations Test (IAT) and self-report questionnaires; these were designed to explore the relationship between implicit and explicit attitudes to condom choice. Within this paradigm, the research sought to investigate potential moderators that relate to the social marketing of condoms. In particular, the research sought to examine how self-identity and partner perceptions affect the choice of condom, in the domain of both casual and exclusive sexual relationships. Of the limited number of IAT studies that have focused on condom use (e.g., Czopp, Lynam, Monteith & Zimmerman, 2004; Marsh, Johnson & Scott Sheldon, 2001), none have purposefully researched attitudes towards the choice of one brand of condom over another, and none have been conducted in the unique sociocultural context of South Africa.

Literature Review

In this section, I will seek to establish a foundational level upon which further analysis will be built. Firstly, before the academic foundations of behavioural economics are discussed, it is worthwhile to outline the meanings of the terms “brand” and “branding” as used in that field. But first, as noted by Baker (2000), when referring to brands and branding, it is imperative that the term “products” also be clarified. According to Baker, one can consider a “product” as anything that can satisfy the economic, psychological, and functional needs of the potential consumer. Baker further states that the extent to which a product meets the abovementioned needs ultimately determines its “value”. Due to the highly competitive nature and marketing of products, branding thus becomes a tool in which many companies highlight the value of their products in any economy trading in highly saturated markets (Hamel & Prahalad, 1994).

More particularly, brands or brandings as defined by Kotler (1994) are the “name, term, sign, symbol or design or the combination of these intended to identify the goods or services of one seller or group of sellers and to differentiate them from those of their competitors” (p. 444).

Kotler, Armstrong, Saunders, and Wong (1996) affirm that the relationship between the products and the consumer is instrumental to the branding process, and that brands are created to be positioned in the social environment in which they are to be consumed. The same authors note that a brand reflects a company's intangible guarantee that the product will meet the consumer's expectations.

In summary, researchers in behavioural economics agree that brands carry certain meanings; these meanings have been created over a period of time, and they evoke reactions that reside in the minds of consumers. The meanings carried by brands can be both operative and accessible, to both the individuals who purchase particular products and to the people with whom they interact (Aaker, 1997).

The subsequent sections of this review will expound on economic and psychological theories most germane to the current research endeavours. These theories are housed in three particular fields of research, namely behavioural economics, decision-making, and social cognition.

Recent empirical findings in consumer behaviour analysis (e.g., Batra & Homer, 2004; Foxall, 2005) have demonstrated the variegated nature of consumer's behaviour as far as their attitudes towards consumer products and consumer choices are concerned. At the core of consumer behaviour research are three fields that are of fundamental and particular relevance to the current thesis: *behavioural economics*, which is the study of consumer's brand choice and product choice (Katona, 1980); *decision-making*, which is the study of mental processes that influence the selection of, for instance, one product over another (Simon, 1955); and *social cognition*, which is the study of the way in which perceptions, beliefs, and cognitions influence, for instance, acuity and choice of products (Macrae & Bodenhausen, 2000).

Behavioural Economics

As described by Loewenstein and Camerer (2002) and Hosseini (2003), behavioural economics is not a unified field *per se*, but is rather a discipline that combines psychological, economic, and decision sciences to study consumer behaviour. The overall and general aim of behavioural economics, defined in that way, is to achieve a realistic picture of the economic process, as well as the key attributes or human paradigms, that influence consumer choice. From a historical perspective, behavioural economics as a discipline largely emerges

from the work of George Katona (1980), who actually coined the term. Katona incorporated behavioural economics into the social psychology domain and defined behavioural economics as involving “the motives, attitudes and expectations that influence decisions in economic matters” (Katona, 1980, p. 3).

One of the major specific aims of behavioural economics involves explaining current product choice, and making predictions of future product choice, based on the analyses of previous consumer decisions and product choices (Katona, 1980; Simon, 1955). Characteristic to the study of behavioural economics is the conviction that there exists a relationship between the rationality of the consumer (what the consumer knows and what the consumer wants), as well as an understanding of the risks and benefits involved in the choice, use, and purchase of any consumer product (Kahnemann & Tversky, 1979).

The contribution of a number of theorists has been integral to the advancement of behavioural economics as a discipline. For instance, both *prospect theory* (Kahnemann & Tversky, 1979) and the *rational expectations hypothesis* (Muth, 1961) affirm that consumers choose the best action to follow based on stable preference functions that are mediated by particular constraints facing them, such as the expense of the purchase of goods. *Bounded rationality theory* (Simon, 1979) extends these thoughts by acknowledging that although rationality is a key component of consumer behaviour, perfect, rational decision-making with regard to product choice is not always easily feasible.

Current theoretical discourses in the field of behavioural economics include *intertemporal choice* (Loewenstein & Prelec, 1992) and the *discounted utility theory* (Petry, 2001).

Intertemporal choice is a theory that looks into how the consumer’s current decisions affect what options become available to him/her in the future. An example often cited in the literature is one of saving: An individual, by not consuming any goods at the present moment, is using a decision-making strategy that allows him/her to lay a platform for having greater levels of consumption power in the future (Selart, Karlsson, & Garling, 1997).

Discounted utility theory is a model of decision-making that has been used to describe actual behaviour. This type of model affirms that many consumers of particular types prefer current rewards to delayed rewards. An example of the application of the theory is in the domain of gambling. In a laboratory experiment, pathological gamblers were more prone to accept

immediate monetary reward rather than delaying their reward for a later stage (Petry, 2001). Similar results have been reported for chronic smokers (Bickel, Amy, Odum, & Madden, 1999) and alcohol users (Bjork, Hommer, Grant, & Danube, 2004).

Personality and consumer behaviour

The internal self

The principle of self-concept has been investigated in the context of consumer behaviour. As mentioned above, consumer behavioural research highlights that consumers show no difficulty in assigning personality qualities to brand objects (Aaker, 1997; Fournier, 1998). Consumer behavioural research therefore implies that a transference of brand personality influences consumers' choice of one particular product over another. Further, theories in this field postulate that consumers rely on products to "announce" their identities through brand symbols (Aaker, 1997). Empirical studies confirm that brand products play a symbolic role as they become tangible markers of consumers acting to communicate salient factors about themselves (Fournier, 1998). Empirical studies where product symbolism and product choice have been confirmed to extend to internal personality attributes include one's choice of beverage (Levy, 1986), specific foods (Levy, 1981), motorcycles (Mitchell & Dacin, 1996), and automobiles (Jacobson & Kossoff, 1963).

The concept of product symbolism is a key component of the studies mentioned above. This concept asserts that products are assumed to have an image, and that this image is determined not only by the physical characteristics of the product object, but also by a host of other factors such as packaging, advertisement, and pricing (Sirgy, 1982). Brand products are thus said to acquire their innate personality qualities, and consequently develop autonomy of their own, often reflecting qualities that consumers personally value as representing themselves. Innate attributes that have been associated with brand products include individual accomplishment, individual integrity, uniqueness, independence, vitality, and self-efficiency (Schultz, Kleine, & Kernan, 1989).

These image stereotypes are also formed by other associations, such as the stereotypes of the generalised or typical user of these products (Grubb & Grathwohl, 1967; Levy, 1959). From a self-esteem perspective, it is argued that a consumer will be motivated to purchase a positively valued product to maintain a positive self-image (positive self-congruity). Likewise, the consumer will be motivated to avoid purchasing a negatively valued product to

avoid self-abasement (negative self-congruity; Sirgy, 1982). An example to illustrate these concepts of positive and negative self-congruency is in the domain of automobiles. To maintain positive self-congruency, a consumer who views himself as from an upper-class society would want to conform to the norms and standards of that segment of society and would thus tend to purchase a high-end, expensive automobile that enhances that self-image. The kind of self-abasement this same consumer would wish to avoid would be to purchase an automobile that has a working-class image. The consumer may evaluate himself negatively for having purchased that car because the self-image outcome of the purchase deviates from his self-image expectancy (Wright, Claiborne, & Sirgy, 1992).

Related to the above, Munson and Spivey (1981) proposed that products can be used in various forms. They proposed two possible “product expressive” self-constructs: (1) one’s self-perception, given a product preference: this is defined as how one perceives oneself given a preference for a specific product, and (2) others’ perception of self, given a product preference: this is defined as how a person believes other people view him/her given a preference for a specific product.

The external self

As previously mentioned, impression formation (Fennis, Pruyn & Maasland, 2005; Srull & Wyer, 1989) is particularly vital in the understanding and conception of the extended (external) self as it applies to consumer behaviour. Consumer behaviour literature affirms that the perceptions held in consumers’ minds about particular brands are essential insofar as brands act to contribute to self-expression. Impression formation fosters the understanding that brand personality traits may carry over and affect perceptions of the personality of the brand owner (Belk, 1988; Fournier, 1998).

To summarise:

There has long been an implicit concept that consumers can be defined in terms of either the products they acquire or use, or in terms of the meanings products have for them (Tucker, 1967, p. 139).

Situational context and consumer behaviour

Environmental cues as an influence for purchase

As previously emphasised, behavioural economics does not operate simply on the individual's capacity (e.g., expected utility theory, subjective expected utility theory); rather, it also takes environmental cues into account when considering reasons for the individual's choice to use or purchase one product over another. Consumer behaviour theorists have shown empirically that situational influences contribute to purchase decisions and to the choice of particular products over others (Fennis & Pruys, 2006; Kuenstel & Musters, 2007; Quester & Smart, 1998). For instance, one study showed that consumption situation influenced consumer decision-making in the purchase of red wine. A number of red wines, varying primarily in their cost, were selected as stimuli for the study. Participants were provided with three consumption scenarios and asked which of the wines they would purchase for each. The first scenario was the purchase of a bottle of wine to drink at home during the week, by oneself or with one's family over dinner; the second scenario was the purchase of a bottle of wine to take to a dinner party, with five or six other close friends, at a friend's house on a Saturday night; the third scenario was the purchase of a bottle of wine as a gift for the 50th birthday of an employer or highly respected friend. The authors found that different consumption situations influenced brand purchase. Specifically, the second and third scenarios, where impression management may be high, were found to be the main predictors of the purchase of more expensive red wine brands (Quester & Smart, 1998).

The literature on consumer behaviour argues that brand choice and the contextual situations in which consumers find themselves are congruent and consistent with one another (Aaker & Sengupta, 2000). Stated differently, the key association evoked by the brand label matches the association evoked by its context (Foxall, 2005). For instance, in a study at the workplace, MBA graduates who lacked certain indicators of business success (e.g., high grades, several job offers) were shown to be more likely to compensate for these shortcomings by strongly associating themselves with the aesthetics that accompany the business environment. They thus wore expensive suits and watches that evoked perceptions of success that accompany this environment (Wicklund & Gollwitzer, 1982).

Conversely, labels are less prone to be utilised or purchased for impression formation when there is a mismatch in association between the brand label and its contextual consumption (Fennis & Pruyn, 2006). For example, the transfer of the symbolic meaning of fashion products such as Versace- or Polo-label clothing may more likely be utilised for self-expressive purposes at a public environment such as at an entertainment and social gathering

event than, for example, at a game reserve (Fennis & Pruyn, 2006); the argument here is that the game reserve context does not effectively facilitate fashion-product brand symbolism publicity.

More specifically, and relevant to the current research, Batra and Homer (2004) in their study on the situational impact of brand image beliefs found that the beliefs individuals hold about a brand and its image (e.g., that fun and sophistication are associated with the brand) have a greater impact on brand preferences, purchase, and consumption in situations where social and impression management needs are higher (i.e., when products are purchased for self-expressive and symbolic purposes). In their research, the authors hypothesized, on the basis of previous literature (e.g., Bearden & Etzel, 1982), that a brand's image attributes are more important in situations where the product is consumed publicly. To test this hypothesis, they first had participants rate their brand image beliefs along a 7-point scale on how *sensible*, *fun* and *classy/sophisticated* they perceived certain brands: *Frito Lay Ruffles Potato Chips*, *Snackwell's Low Fat Cookies*, *Pepperidge Farm Cookies*, and *Breyers Ice Cream* (all famous food-item products in the United States market). When participants were then asked to "assume you are considering buying some food items for a party that you will host" (p. 232), the authors found that brands that were rated higher on fun (*Ruffles Potato Chips*) and sophistication (*Pepperidge Farm Cookies*) were most likely to be purchased.

Graeff (1997), seeking to investigate the influence of situational context on ideal self-image presentation, conducted a similar study. Participants were first asked to rate their relative preference and attitudes towards *Budweiser* and *Heineken* beer. Specifically, they indicated their perceived image of both beers on 10 dimensions, using the bipolar scale labels *rugged-delicate*; *excitable-calm*; *masculine-feminine*; *youthful-mature*; *formal-informal*; *economical-extravagant*; *unsuccessful-successful*; *modern-old fashioned*; *tense-relaxed*; *urban-rural*. Participants also indicated their actual and ideal self-images on the same set of dimensions. They were then asked to imagine themselves being in a particular situation (either with a new boss or out with friends) where they would have to decide to purchase one of the two beers. The first consumption situation was presented as follows:

Imagine that you have recently graduated and that you have been employed by a local company. One day after work, your new boss invites you to a local restaurant to meet with some of the senior level executives who also work at your company. You decide to

go because you think this would be a good chance to meet the senior executives in your company and it would also be a good chance for you to impress them enough that they might consider you for future promotions. Your boss and the other senior executives all drive BMWs, enjoy tennis and listening to classical music. Imagine that while at the restaurant (in the presence of these senior level executives) you decide to order a beer (p. 61).

Participants in the 'friend' consumption situation were presented with the following scenario:

Imagine that you are taking a late afternoon class. One day after class two of your friends invite you to a local bar (located adjacent to campus) to meet with some of their friends. You decide to go because you think this would be a good chance to meet other students. You would also like to make a good impression on them so that they might include you in their activities. Your two friends (and their friends you will be meeting at the bar) all drive pick-up trucks, enjoy hunting and listening to country music. Imagine that while at the bar (in the presence of these new friends) you decide to order a beer (p. 61).

As expected, the data showed that participants' choice of beer was significantly different across the two situations. The majority of participants in the 'boss situation' chose the Heineken beer, whereas the majority of participants in the 'friend situation' chose the Budweiser beer. The author hypothesised that this situationally-based preference was a function of the congruence between the brand's image (as rated by the participants) and the ideal self-image participants would want to project in the given situation. Hence, participants in a consumption context that is highly prone to impression management (the 'boss situation') chose Heineken, as they perceived this beer to have brand image attributes more congruent with the ideal self-image they would want to express in that situation.

A related group of studies affirmed that in situations where social and impression management needs are higher, the purchase and consumption of brand products is motivated by a need for public self-presentation, impression formation, and the enhancement of one's self-definition (Aaker, 1999; Batra & Homer, 2004; Belk, 1988; McCracken, 1986). In summary, because brand image beliefs usually pertain to socially visible aspects of a brand (e.g., how classy or sophisticated the brand is widely perceived to be), the impact of these beliefs ought to be greater in situations where social desirability needs are stronger (i.e.,

where impression management needs are higher; Fishbein & Ajzen, 1975; Snyder & DeBono, 1985).

A critical insight emerging from the above analysis is the spontaneous relay of information embedded in brand personality traits and its transference onto consumer personality traits. The possession, purchase, and use of particular brands thus acts to classify, for the individual consumer, who he/she is and what he/she is all about (Holt, 1995).

The prime issue emerging from the theory reviewed above is that the optimal approach to study condom choice is a personality-by-situation approach. In other words, researchers interested in understanding why individuals might choose to use one type of condom over another should best study this choice as a unique activity of the interaction between the self (with all of its associated properties) and different condoms (each with all of their associated properties). It is most opportune to study attitudes towards condoms and condom choice within the sexual context in which condom use occurs. This sexual context, and sexual activity, requires the participation of at least two individuals; thus the motivational factors and decision-making processes involved in this human interaction are important to study.

In summary, because an individual's understanding and regard of him/herself affects behaviour and experience at a particular moment in time, it is imperative that personality factors (intrinsic) as well as the situational variables (extrinsic) present in the sexual context be incorporated into the study of condom-use and condom-choice behaviour. The present research undertook to investigate decision-making around condom choice in two different sexual contexts (exclusive relationship or casual sexual relationship); such investigation is of great social and public health importance as condoms continue to be among the most viable and visible forms of contraceptive choice against the fight of HIV/AIDS and other sexually transmitted diseases in South Africa (Abdool-Karim, Preston White, & Abdool-Karim, 1992).

Decision Making

Decision-making theory affirms that consumers usually make decisions with regard to purchase in a rational manner, but acknowledges that this may not always be easily feasible (Simon, 1979). Nonetheless, decision-making theory regards human beings as systems that interpret information, and who calculate and choose a course of action that is primarily based

on a subjective cost-benefit analysis. As noted by Loewenstein (2001), subjective cost-benefit analysis involves the evaluation of the consequences of gain or benefit (as well as loss) that accompany the purchase of particular products over others. Decision-making theory therefore affirms that a number of factors influence decision-making strategies; amongst these are cognitive processes that are involved in the interpretation of specific situations in which the product will be consumed (situational influences), emotions and attitudes, memories of earlier consumer decisions, and the consequences of such decisions (Simon, 1955, 1978).

Moreover, decision-making theories assert that individuals select actions based on an assessment of self-interest. This assessment involves a knowledge-based approach that evaluates suitable brand choice (Loewenstein, 2001). More specifically, Aaker (1997) argues that brand personality dimensions affect consumer choice behaviour, so that decision-making is often influenced by “self-extension” principles. That is to say, individuals make the logical decision to purchase a product that realistically affirms who they are (i.e., products act an extension of the actual or ideal self).

The predominant models utilised in the study of decision-making are the *expected utility theory* (von Neumann & Morgenstern, 1944) and the *subjective expected utility theory* (Savage, 1954). These expectancy-value theories assume that people generally behave in ways that will maximize utility (value) and that people will prefer behaviours that are related to the highest expected utility. Under this perspective, people logically, consistently, and subjectively weigh the pros and cons of their behavioural choice of purchase and the outcomes of their behaviours and eventually choose a behaviour that will provide them the most benefit.

Social Cognition

Social cognition is a sub-field of social psychology that investigates the psychological mechanisms that mediate an individual’s response to his or her social environment (Macrae & Bodenhausen, 2000). Social cognition inquiry examines the nature of mental representations, and is characterised by information-processing dynamics that people utilise to make sense of their social world. Simply stated, social cognition researchers study different aspects of individuals’ mental processing (rationality) that may be influenced by different social interactions, real or imagined, which may subsequently influence social behaviour (Kunda, 1999). At the core of social cognition models (and consistent with

behavioural economics and decision-making models) is the assumption that people are rational creatures who think before they act.

A number of social cognition models have been proposed (e.g., theories of reasoned action (Ajzen & Fishbein, 1977); theories of planned behaviour (Ajzen, 1991); and the protection and motivation theory (Rogers, 1975)). An example of social cognition theory that is relevant to the current research (but not at the core of it) is the AIDS Risk Reduction Model (ARRM; Catania, Kegeles, & Coates 1990). This model was constructed specifically to help explain, predict, and control AIDS risk behaviours.

ARRM specifically posits that people typically go through the following three stages in order to reduce or change sexual activities that are risky for spreading HIV infection. Firstly, people identify and label certain behaviours as 'risky'. Such a label will depend on: (a) knowledge of how HIV is transmitted – a necessary but inadequate condition to identify high-risk sexual activities; (b) perceived personal susceptibility to AIDS; and (c) the influence of social norms in relation to sexual risk. Secondly, people commit to low-risk activities. At this point, the individual has labelled unprotected sex as risky. Yet, the likelihood that the individual will commit to low-risk sexual activities (e.g., condom use) will still depend on, for instance, the subjective estimation of costs and benefits of continuing the past behaviour versus changing the past behaviour. If, for example, people engage in unprotected sex and estimate that condom use could result in arguments that strain their relationship, they may hesitate to change risky behaviour and self-efficacy beliefs. Individuals ought to feel capable of engaging in activities that will prevent them from HIV. For example, they must feel comfortable with buying condoms, using them, and negotiating their use with partners. Thirdly, people can modify risky behaviour. At this point, the individual has committed to changing risky sex-related practices. The likelihood that such commitment will lead to actual behaviour change will depend on (a) the individual's proficiency in negotiating condom use with his/her partner, and (b) the individual's access to social support (e.g., ease of finding condoms, having information about condoms, AIDS, STDs, and so forth).

Many contemporary proponents of social cognition inquiry (e.g., Bargh, Chen, & Burrows, 1996; Quinn, Macrae, & Bodenhausen, 2003) assert that the chief feature that binds social cognition theory is the understanding that social behaviour requires an appreciation of the social situations in which individuals find themselves enmeshed. Particularly relevant to the

endeavours of the current study, social cognition inquiry investigates topics such as self-concept, self-knowledge, the socially embedded interactions in which individuals find themselves, and how these factors directly or indirectly influence decision-making in product choice (Batra & Homer, 2004; Foxall, 2005; Johnson-Laird, 1983; Macrae & Bodenhausen, 2000).

Social cognition and the self

Because the underlying principle of “self-concept” is integral to the endeavours of the current research, it is worth closely defining, and expanding on the meaning of, that term. Self-concept can be defined as “the totality of the individual’s thoughts and feelings having reference to himself as an object” (Hawkins, Best, & Coney, 1998, p. 430). According to Grubb and Grathwohl (1967), self-concept is formed in the interactive process between an individual and others where one strives for self-expression in social intercourse.

In an earlier work that is particularly relevant to the current research topic, Rogers (1956) postulated that consumer behaviour was regulated by the perceived similarities (or dissimilarities) between environmental conditions and self-image. Accordingly, and as a result of this interaction between self-concept and one’s environment, consumers often associate symbolic meanings of brand images and self-concept or self-image (Levy, 1959). Social cognition theory therefore affirms that consumers do not consume brands only for their material or functional benefits, but also consume the symbolic meaning of those brands (these symbolic meanings emerge from the images that the brand portrays, in advertising, for instance; Elliot, 1997; Levy, 1959; McCracken, 1986). Thus, brand consumption allows consumers to express “the self” by choosing brands whose images are perceived to be similar to their own self-image or self-concept (Aaker, 1999; Kassarian, 1971; Sirgy, 1982).

A critical and indispensable emphasis in the self-concept literature is the domain of the self and impression management. *Impression management theory* postulates that interpersonal behaviour is often dictated by the impressions that people form of themselves and of others. At the centre of impression management is the role mediated by one’s self concept on self-esteem (Johnson-Laird, 1983). Overall, self-esteem is defined as a self-presentation paradigm; more distinctly, it is the positivity of an individual’s evaluation of the self (Baumeister, 1982). Self-esteem is estimated as an underlying social behaviour and an important explanatory variable in human interactions and consumer choice (Tesser, 2000).

Empirical research conducted by social cognition theorists on the analysis of the self and impression management (e.g., Macrae & Bodenhausen, 2000; Fennis & Pruyn, 2006) has confirmed a relationship between the consumer's mental representation of his/her personality attributes and social roles, based on the social situation in which he/she is. By implication, people purchase products that most depict their personality traits, and these products indicate their social roles.

HIV/AIDS and Other Sexually Transmitted Diseases

Over the past decade, HIV/AIDS has had an adverse effect on many societies, with most survey studies finding that the disease can no longer be referred to as an epidemic, but a pandemic in which there is no cure in sight for the many affected individuals (Foss, Louir, Walts, & Watts, 2004; Varga, 1997). In South Africa, estimates of the percentage of the population infected by HIV/AIDS vary from a low of 19.5% to a high of 25.8%, with those between the ages of 15 and 24 years most infected by the disease (Shisana et al., 2005). Moreover, the rates of sexually transmitted diseases (STDs) such as gonorrhoea, chlamydia, herpes, and syphilis, continue to increase in South Africa (Johnson, Coetzee, & Dorrington, 2005). In the midst of the HIV pandemic and these increasing STD problems, it is vital that an understanding of youth sexual culture and the context of sexual activity be developed and researched.

Furthermore, STDs, and HIV in particular, represent significant health issues for university students. Depending on the sample, location and year, studies have shown that between 6% and 43% of the university student population will contract at least one STD (Civic, 2000; Scandell, Klinkenberg, Hawkes, & Spriggs, 2003). Authors have suggested that university students may be at a higher level of risk for contracting a STD as compared to the general population (Katz, Fromme, & D'Amico, 2000; Leigh, 1999). With regard to South African university students, the most recent survey conducted by the Human Sciences Research Council, shows promising findings. In a study that involved more than 23 000 students and staff members in 21 institutions of higher education, it was found that the national HIV prevalence rate amongst students is 3.4%. In comparison, the study found that the prevalence of HIV in the general population aged 15-49 years is 16.9% (HSRC, 2008).

Aside from abstinence, the only way at present to avoid an STD and ensure sexual health is to use condoms successfully and consistently, for vaginal, anal, and oral sex (Shisana et al.,

2005). So important is the study of condom use in the fight against HIV/AIDS that President Museveni of Uganda stated that “a thin piece of rubber stands between us and the future of our continent!” (Museveni, 1997, p. 40). Today, more than a decade after President Museveni made the statement, many hopes for Africans are still vested in this thin piece of rubber. Therefore, conducting research in the domain of attitudes towards condoms and conducting an empirical research study focusing on individual attitudes towards condoms and their choice of condoms is a contribution towards preventing the rapid spread of HIV/AIDS that continues to affect communities in and around sub-Saharan Africa.

Recently, considerable and intensive efforts have been made to promote the availability of condoms in South Africa as part of attempts to stem the spread of the HIV virus. As a consequence of these efforts, behavioural surveys and focus-group studies have described increases in condom use among 18-24-year-olds (Foss et al., 2004; Varga, 1997). Secondary benefits of this condom marketing have included increased prevention of other types of sexually transmitted infections (STIs) as well as the decrease of unwanted pregnancies (Shisana et al., 2005).

Surveys and focus-group studies of high-risk populations have, however, also illustrated that there are a number of obstacles to condom use and the subsequent effective prevention of HIV transmissions and other STIs. Such obstacles include consistently and widely held myths about condoms (e.g., that they emasculate the male user; CADRE, 2004). Most importantly for this study, a noted obstacle to condom use appears to be people’s attitudes towards condoms (Foss et al., 2004; Varga, 1997).

Some survey studies in this field (e.g., Foss et al., 2004; Shisana et al., 2005) have focused on attitudes, such as culturally constructed norms of masculinity, that may be obstacles to the use of condoms. These studies have, however, placed limited emphasis on the individual psychology of people who use (or don’t use) condoms. Specifically, large-scale survey studies have focused on demographic epidemiological data (e.g., regarding poverty, lack of education, and socioeconomic status) and associations between those factors, risk of contracting HIV/AIDS, and group attitudes that may be obstacles to condom use. Another obstacle to the use of condoms especially in the South African context is the role of concurrent relationships.

Sexual networking and HIV/AIDS in South Africa

Recent studies suggest that the East African and South African epidemics are largely driven by high levels of multiple and concurrent sexual partnerships coupled by a lack of male circumcision and inconsistent condom usage (Epstein, 2007; Halperin & Epstein, 2007; Soul City, 2007). Having multiple and concurrent sexual partnership means an individual engages in sex with overlapping sexual partners over a period of time. This is in contrast to sequential or serial monogamy where an individual is involved in one sexual relationship with one partner without an overlap in time with subsequent partners (Epstein, 2007). The nature of sexual networking resulting from multiple and concurrent partnerships provides an overview through which HIV could be easily transmitted with a community.

A study conducted by the Soul City Institute (2007) in South Africa established that approximately 45% of males and 28% of females aged 15-19, and approximately 36% of males and 21% of females aged 20-24, reported concurrent sexual partnerships. In another study conducted by the Centre for AIDS Development and Research (CADRE), it was established that the high prevalence of multiple partnerships among 20- to 30-year olds in South Africa was mainly driven by a complex web of socio-economic and cultural factors, together with psychological realities such as self esteem. The study found that people framed their understanding of love and sex differently:

The concepts of sex and love are often separated, as sex *with* love for the main partner and sex *without* love for the other partner. [This] results in recategorisation of the concept of faithfulness, whereby being 'faithful' shifts in the meaning from de facto fidelity to a concept where keeping infidelity secret is a sufficient criterion for considering oneself to be faithful (Parker et al., 2007, p. 8).

There continues to be a vigorous drive, led by health campaigns such as Soul City's 'One Love' and the 'Scrutinize' campaign led by the John Hopkins Health Education in South Africa (JHHESA) group, to encourage partner reduction and consistent condom use both with one's 'main' partner and 'other' partner to reduce the spread of HIV/AIDS.

As noted above, most studies of condom use (and certainly all of the South African studies) are of the survey and focus group type. Few, if any, experimental designs have been applied to study attitudes toward condom choice and condom use. Additionally, in the South African

context, and in terms of addressing prophylactic aspects of condoms, no studies have focused on social psychological constructs such as self-concept, and on how these constructs and related attitudes pertain to condom choice.

Moreover, most extant studies have not expanded on the social nexus in which individuals find themselves; they only concentrate on the individual who purchases the condom and not on the social and cognitive environment in which he/she may find him/herself enmeshed when involved in a sexual relationship. Although one does not doubt that the use of condoms primarily functions as a preventative barrier against the spread of sexually transmitted diseases, it is still imperative to note that condom use and condom choice are embedded in social contexts that involve the interaction between (at least) two individuals.

Condom choice in focus-group literature

One previous study that does highlight the importance of condom choice is the study by Mulwo et al. (2009), who sought to investigate students' perceptions of different condom brand choices and their symbolism in terms of social status. In their study, one of the participants in their focus group comments on luxury condom brands as being associated with being "professional" and symbolising status. When talking about condom choice, one of the participants (P1) states:

It is about status; if you use that government condom to a lady who is like eeh, who is too much gorgeous, beautiful and who eeh has nice clothes, who is glamorous and you come with eeh government condoms, she will be like- This guy what that government condom? It smells, it's got a bad smelling, Jeez...In your mind something tells you that no, no, no, I cannot have sex with that girl with eeh, government condom. I have to buy a condom somewhere [or] get some of my friends to give some Lovers Plus yeah. Not the regular ones because she will think I am cheap, or I am poor or something; she has to see that I have certain status myself, I'm using eeh, good condoms, professional ones (p. 317).

The perceived symbolic status of various condom brands, together with the common view of free condoms as unsafe, seems to greatly influence the student's preference for luxury condom brands.

Another of the participants in this study (P2) reported that women preferred to have *skhunu* (a slang word for unprotected sex) rather than use public sector condoms:

Most of these chicks doesn't [sic] like these condoms, they are saying that – You won't have it with me with the Choice, (government condom) no you must go and buy some condoms. You are like wow, I doesn't [sic] have them so what must I do? And they say [to myself] aii; you must maybe end up having *skhunu* here, like stick in flesh to flesh (p. 317).

From the above (P1) we note that the consumptions and choice of condoms is intricately influenced by self-image congruency. Intrinsic personality factors seem to determine the choice of one condom brand over another. The choice and use of luxury condoms appears to carry with it a symbolic meaning for the consumer (and his/her partner). Through the choice and use of luxury condom brands, the consumer appears to project either an actual or ideal self-image to their partner.

Relationship Status (RS)

In this study, the term RS will be used to refer to the type of sexual relationship in which an individual is engaged at a particular time. RS thus refers to three discrete states: an exclusive relationship, a casual relationship (or casual relationships), or no relationship.

Exclusive relationships are defined as long-term, monogamous, committed, and socially sanctified relations between two individuals (Peplau, Rubin, & Hill, 1977). In exclusive relationships, people have both psychological and emotional investments in their partner and in the relationship. People in these relationships tend to expect heightened love, intimacy, and trust from their exclusive partner (Markey & Markey, 2007).

Casual sexual relationships, on the other hand, are defined as sexual activity between individuals who are not involved in long-term relations with each other; in other words, it is sexual activity that occurs between strangers or casual acquaintances on "one and only one occasion" (Simpson & Gangestad, 1991, p. 883). This sexual activity might occur between individuals who meet "that same day or evening" (p. 883), or between uncommitted partners (Chara & Kuennen, 1994; Westera & Bennett, 1994). People involved in casual relationships typically do not expect their partners to satisfy their emotional and psychological needs

(Markey & Markey, 2007). Such sexual behaviour is also referred to in the literature as 'chance sexual encounters' (e.g., Fisher & Byrne, 1978) or 'one-night stands' (e.g., Carroll, Volk, & Hyde, 1985; Netting, 1992; Snyder, Simpson, & Gangestad, 1986). The working definition adopted for this research is one proposed by Chara and Kuennen (1994) who combined several of the important elements mentioned above and stated that 'casual sex' might be defined as sexual intercourse between uncommitted partners.

It has been argued that the different meanings people ascribe to their sexual relationships also affects decisions regarding sexual practices, as well as issues of contraception and protection from STDs and especially condom use. Simoni, Walters, and Nero (2000) argued for a contextualistic behavioural perspective when investigating sexual relationships.

Contextualistic behaviourism (Rosnow & Georgoudi, 1986) postulates that any behaviour, whether it be sexual risk-taking, intercourse with or without a condom, or intercourse between one's "main" partner and "other" sexual partners, is meaningless unless it is studied in its context. For instance, in exclusive relationships, condom use may imply mistrust, suspicion, infidelity, emotional and physical distance, or even denial of potential motherhood. In these relationships, then, the satisfaction of emotional and physical needs may be more important than protection from disease.

Application of Reviewed Literature to the Study of Condom Choice

A consistent theme running through the fields of behavioural economics, decision-making, and social cognition, and one that is generally accepted in psychology, is that human activity is best explained through a combination of intrapersonal and interpersonal factors. As noted above, behaviour surrounding condom choice is no exception. Therefore the current study investigates both the intrapersonal (i.e., personal variables) and interpersonal variables (behavioural economics, social cognition, relationship status, and the underlying contextual dynamics (exclusive vs. casual relations)) that influence condom brand choice in sexual relationships. As noted in the literature reviewed above, there are data to support a 'person-by-situation' approach to condom use and condom choice. Thus, the overall aims of the current thesis were to introduce a situational approach to the study of condom choice as a economic behavioural phenomenon influenced by self-concept dynamics present in human sexual relationships.

From the literature reviewed, the assertion that the impact of brand personality is stronger when the situational context is consistent with the association that the brand evokes is particularly integral to and important for the study. Keeping in line with the above consideration of brand image and contextual variables, one hypothesis is that when in a casual sexual relationship context, one's social and impression needs will be higher than when in an exclusive relationship. As a result of the highly superficial nature of casual sexual relationships and the apparent need to put on a good 'front' towards the partner (Merten, 1996), people in these relationships will be more likely to have the need to present a positive self-image and to choose to associate more with luxury brand-name condoms in the sexual situations in which they may find themselves. This thought is forwarded particularly in considering that in these short-term relationships, the individual does not know the partner well (and vice-versa), and so will aim to highlight and communicate a positive image of who he/she is in order to impress that partner. On the other hand, in an exclusive relationship, where impression management needs may not be as high and partners are well known to one another, there will be less need to present a positive self-image. Accordingly, in this latter relational context, one might hypothesize that there will be a weaker association with luxury brand-name condoms as a symbol of the self.

Different measures have been suggested to measure the strength of association between one's understanding of their self-identity or self-concept and the type of brand products to which they tend to relate. Generally, these views of the self (self-identity or self-concept) are difficult to measure on an explicit level (e.g., by means of questionnaires) because they may be hidden or unacknowledged by the individual doing the reporting. One might make the assumption, then, that these attributes of the self are *implicit* and are not easily expressed directly. What, then, is the best measure of strong and weak association between people's self-concept and the kind of condom they choose to use?

Implicit and Explicit Attitudes

Arguably one of the most important contributions in social cognitive research within the last decade has been the development of implicit measures of self-identity and self-concept (Fazio & Olson, 2003; Greenwald et al., 1998; Nosek & Banaji, 2001). These implicit measures are based on reaction times in response to computer-based tasks, and are particularly intended to assess relatively automatic mental associations that may be difficult to gauge with explicit self-reports.

Importantly, this research developed from the assumption that individuals display distinct implicit and explicit attitudes that require different measurement strategies. It introduced the view that people process social information not only in explicit (i.e., aware, controlled, or reflective) modes, but also in implicit (i.e., unaware automatic or intuitive) modes. More specifically, research using these implicit measures pursued implications of Greenwald and Banaji's (1995) notion that implicit attitudes are "introspectively unidentified (or inaccurately identified) attributes of the self" (p. 10).

From the above insights, the distinction between explicit and implicit operations of the self is especially noteworthy if it turns out that the individual functions differently in these two modes. The dimensions that exist in implicit and explicit operations have been utilized to measure attitudes toward, for instance, self-concept (Greenwald & Farnham, 2000; Greenwald, Banaji, Rudman, Farnham, Nosek, Mellot, 2002), gender stereotypes (Greenwald, Rudman, & McGhee 2001), sexual orientation (Gabriel, Jellison, & McConnell, 2004), and stigmatized behaviours such as smoking (Swanson, Rudman, & Greenwald, 2001). Illustrative of typical findings in these studies are those of Dasgupta, McGee, Greenwald, and Banaji (2000), who showed that, implicitly, White Americans show a stronger preference for White people than for Black people, even when they explicitly claim no prejudice against Black people. In other words, explicitly-held attitudes may differ quite markedly from implicitly-held attitudes; therefore, in order to uncover all attributes of the self, one has to measure both explicit and implicit attitudes.

The Implicit Associations Test

The most popular computer-based measure of implicit attitudes is the Implicit Associations Test (IAT; Greenwald, McGee, & Swartz, 1998). The IAT allows researchers to investigate many implicit cognitive/psychological processes, including attitude formation, advertising response, and the development of links between brands and the consumer's self-concept (Brunel, Greenwald, & Tietjie, 2004). More specifically, the IAT is designed to assess the strength of automatic associations between various concepts presented to individuals. The primary aim of the test is to make explicit those aspects of, for instance, self-identity and stereotyping that individuals may be reluctant to admit or that they cannot identify accurately. The IAT has been employed to measure a number of social psychological phenomena such as race and gender stereotypes, and has been used in marketing studies to examine consumer

attitudes (Brunel et al., 2004; Greenwald & Farnham, 2000; Greenwald, Nosek, & Banaji, 2003).

Greenwald et al. (1998, p. 1468) describe the typical IAT procedure in this way:

In the IAT, a subject responds to a series of items that are to be classified onto four categories – typically, two representing a concept discrimination such as *flowers* versus *insects* and two representing an attribute discrimination such as *pleasant* versus *unpleasant* valence. Subjects are asked to respond as rapidly with a right-hand key press to items representing one concept and one attribute (e.g., *insects* and *unpleasant*), and with a left-hand key press to items from the remaining two categories (e.g., *flowers* and *unpleasant*). Subjects then perform a second task in which the key assignments for one of the valence is switched (such that *flowers* and *unpleasant* share a response, likewise *insects* and *unpleasant*). The IAT produces measures derived from latencies of responses to these two tasks. These measures are interpreted in terms of association strengths by assuming that the subjects respond more rapidly when the concept and attribute mapped onto the same response are strongly associated (e.g., *flowers* and *pleasant*) than when they are weakly associated (e.g., *insects* and *unpleasant*).

Applications of the IAT in consumer behaviour research

As stated above, within consumer behaviour research, there are many domains in which the disassociation between explicit and implicit attitudes may manifest. For instance, Maison, Greenwald, and Bruin (2001) explored the attitudes of various individuals towards high- and low-calorie food products. They hypothesised that young female consumers would hold ambivalent attitudes, equally perceiving high-calorie products as good in taste, but bad for their health; they would also perceive low-calorie products as bad in taste but good for health. Conventional explicit measures suggested that young women preferred high-calorie products on a number of dimensions (e.g., taste). Conversely, implicit measures revealed that young women held attitudes that were more positive towards low calorie products.

In a study particularly relevant to the current research concerns, Brunel et al. (2004) sought to understand consumer attitudes in a case where consumers were unable or unwilling to identify the source of their decisions to purchase certain brands (e.g., Apple Macintosh) over others (e.g., Microsoft Windows). As expected, data showed a convergence of implicit and

explicit attitudes towards different brands: That is, IAT measures of brand attitude and brand relationship were strongly correlated with explicit measures of brand attitude, ownership, and usage. More importantly, however, this study showed the IAT's utility in "measuring consumer-brand relationships (i.e., the degree to which a brand is a part of a consumer's self-concept)" (p. 393). Specifically, IAT data uncovered the fact that Macintosh users appeared to have a stronger relationship (or "self-connection") to their brand than did Windows users, perhaps because of the stronger sense of community and loyalty within the Macintosh user-world. The authors conclude that their IAT results "confirm that brands 'serve as powerful repositories of meaning purposively and differently employed in the substantiation, creation, and (re)production of concepts of self in the marketing age' (Fournier, 1998, p. 365)" (p. 397).

IAT research into condom use/choice

Even more germane to the purposes of the current research, Czopp et al. (2004) conducted a study using the IAT to measure risky sexual behaviour amongst students. Participants were presented with audio descriptions of realistic 'high-cue' and 'low-cue' sexual scenarios. In the former scenario, the description involved spending some time with a co-worker at a bar, then accompanying that co-worker back to his/her apartment, becoming more intimate, and eventually having sex. In the latter scenario, the description involved enjoying a meal and a movie with a steady girlfriend/boyfriend, then going back to that person's apartment, becoming more intimate, and eventually having sex.

After listening to each of the scenarios, participants completed measures of implicit and explicit attitudes towards condoms, and also completed questionnaires regarding condom usage. The researchers measured, on a scale of 1 (*very unlikely*) to 4 (*very likely*), the likelihood that participants would have used a condom in the previously presented scenario. The researchers also measured, on a scale from 0 (*definitely would not*) to 100 (*definitely would*), the likelihood that the participants would actually have had sex in the previously presented scenario.

After providing these responses, the participants completed a standard-format IAT that, as usual, consisted of several blocks of trials. Block 1 required the participants to categorize, by using either the *Z* or the *M* key on the computer keyboard, 28 adjectives from the Greenwald et al. (1998) list (e.g., *lucky*, *miracle*, *poison*, *grief*) as either "pleasant" or "unpleasant."

Block 2 required participants to categorize, using the same keys as before, 26 words (13 related to condoms, e.g., *latex*, *Trojan*; 13 related to trees, e.g., *pine*, *maple*) as either in a “condom” or a “tree” category. Blocks 3 and 4 were identical; they required participants to use one response key (e.g., *Z*) to categorize both pleasant words and condoms on one side of the screen (e.g., the left side), and to use the other response key to categorize unpleasant words and trees on the other side of the screen. Block 5 required the participants to repeat the task assigned to them in Block 2, except this time the keys assigned to condoms and trees were reversed (e.g., condoms were now categorized on the right, using the *M* key, and trees were now categorized on the left, using the *Z* key). Blocks 6 and 7 were identical; they required participants to use one response key (e.g., *Z*) to categorize pleasant words and trees on one side of the screen (e.g., left), and to use the other response key to categorize unpleasant words and condoms on the other side of the screen. Blocks 5 and 7, which were designated as the ‘critical blocks’ during which participants’ responses and reaction times were measured and used as IAT outcome variables, consisted of 40 trials each (other blocks consisted of 20 trials each). Within each block, the order of stimuli presentation was randomly determined, but an equal number of exemplars from each category were presented.

After the IAT, participants completed a questionnaire asking about their explicit attitudes toward condom use. Questions included whether they had difficulty in talking about condoms, whether they believed that condoms ruin sex, and how frequently they used condoms.

The most important findings of the Czopp et al. (2004) study, at least with regard to the current research, were that, in the high-cue (casual sex) scenario, participants’ *explicit* attitudes were highly correlated with their reported likelihood of using a condom in that situation. The authors interpreted this finding as indicating that, in a situation where there is the presence of environmental cues signalling an increased risk of HIV infection, there is a switch from automatic processing (driven by implicit attitudes) to controlled processing (driven by explicit attitudes). In contrast, in the low-cue (sex within a romantic relationship) scenario, participants’ *implicit* attitudes were highly correlated with their reported likelihood of using a condom in that situation. The interpretation here was that, in a situation where there is an absence of environmental cues signalling an increased risk of HIV infection, automatic processing, as a default mode, persists, and behaviour is driven by implicit attitudes. These findings replicated those of another condom-use IAT study (Marsh et al.,

2001). In sum, these two independent studies confirm that different sexual scenarios prompt different attitudes towards condom use.

The findings of these two studies have clear implications for the spread of HIV/AIDS and other STDs. In particular, these studies seem to indicate that, if people are aware of the risks associated with casual sex, and at the same time have explicitly positive attitudes toward the benefits of condoms in minimizing those risks, then they would be more likely to use condoms in high-risk sexual situations. At the same time, however, the data from these studies imply that, in perceived low-risk sexual situations, condoms will only be used if the individual's implicit attitudes toward condoms are positive.

Neither of the two condom use IAT studies mentioned above has been replicated using South African populations. Sociocultural variables present in the South African context (e.g., ideas that condoms emasculate the male user (Boer & Mashamba, 2007; Hallman, 2005); that condom use is associated with infidelity; that condoms, particularly government-issued brands, are weaker and actually help spread HIV/AIDS (Cherian, 2004; Varga, 1997)) make local replication of these studies particularly important. This importance is magnified because such studies might help answer the question of why, despite the increased availability of condoms in South Africa, the HIV infection rate has not declined in any appreciable way (Shisana et al., 2005; UNAIDS, 2006).

Summary

As stated earlier, the principle conceptual framework that has guided this research is derived from behavioural economics. The chief points from the literature are that the purchase and use of goods is mediated by a number of factors. Most germane to my research, and a conceptual theme that runs throughout the covered literature, is that when studying consumer choice, especially the purchase and use of particular goods over others, two frameworks are key: Consumer choice is mediated both by personality factors (intrinsic) as well as contextual factors (extrinsic) influences.

Additionally, IAT studies on consumer behaviour and consumer preference (e.g., Brunel et al., 2004; Friese, Wanke, & Plessner, 2006) suggest that consumer-brand relationships are important in constructions of self-identity; thus, another question of interest in the South African context, where government-issued condoms are often derided, is whether implicit

and explicit attitudes toward condom use are affected by the type of condom (generic, ordinary brand, luxury brand) that is available for use, and whether individuals would choose to use different kinds of condoms in different sexual scenarios (e.g., casual encounters versus exclusive relationships) in order to project different images of the self.

My specific hypotheses were that, in a sample of individuals at high risk (age-wise) for contracting HIV:

1. participants in casual-sex relationships would show a stronger preference for brand-name condoms over generic condoms because they would be more concerned with projecting a positive self-concept to their partner;
2. participants in exclusive relationships would show less preference for brand-name condoms over generic condoms because they would be less concerned with projecting a positive self-concept to their partner; and
3. regardless of sexual context (i.e., casual sex relationships versus exclusive relationships), there would be a positive correlation between implicit and explicit attitudes towards condom choice.

CHAPTER TWO: DESIGN AND METHODS

Research Design and Setting

Data collection for this quasi-experimental study took place at two locations: (1) a psychology research laboratory at the University of Cape Town, and (2) a UCT undergraduate student residence lodgings. Participants recruited from both sites were assigned to either an Exclusive Relationship or Casual Sexual Relationship group, depending on their relationship status, as self-reported in the study recruitment form (see Appendix E). Group status was the only factor of initial interest; I did not expect there to be between-site differences on the dependent measures, given that participants at both sites were drawn from the same general population (UCT undergraduate students).

Participants

Seventy-eight individuals (39 females and 39 males, equally distributed in the Exclusive Relationship and Casual Sexual Relationship groups) between the ages of 18 and 25 years ($M = 22.03$, $SD = 4.86$) participated. They were all undergraduate students, and were recruited either through the UCT Department of Psychology's Student Research Participation Programme (SRPP) or from one of UCT's student housing residences. Students recruited through the SRPP programme received course credit in exchange for their participation. Students recruited from the residence received R30 compensation for their participation.

The recruitment and selection procedures ensured that all participants were self-reported to be sexually experienced, to have engaged in sexual intercourse at least once, and to have used a condom during intercourse. To ensure participants were assigned to the correct study group, all had to indicate their relationship status on the recruitment sign-up sheets. (Please see Appendix E for recruitment sheets used in the study). When recruited individuals arrived at the study venue, I asked them to confirm their previously-reported relationship status, thus double-checking that group assignment was correct.

To ensure that equal numbers of participants (and equal numbers of males and females) were recruited into each study group, I kept a running tally of the number of participants in each group. Whenever more participants were required for a particular group, I would increase advertising for participants who met the particular criteria for that group.

One hundred and eight participants were recruited into the study; the final sample comprised only 78, however. Potential participants were excluded from participating in the study on the basis that (a) they had never had sexual intercourse before, or that (b) they had never used a condom before.

Exclusion and inclusion criteria

Participants were included or excluded in the study based on the working definition of exclusive relationship and casual sexual relationship status set out for the study. Our definition of an exclusive relationship followed this question: *Are you/have you been in a monogamous relationship, with one partner for over a period of twelve months?* Casual sexual relationships, on the other hand, were defined as *sexual activity with another person outside the realm of a monogamous relationship*. Furthermore, individuals were excluded from participation if they were not fluent in English, had not experienced sexual intercourse, or had never used a condom. Those in the Exclusive Relationship group had to have been in a monogamous relationship lasting 12 months or more. Additionally, all participants had to be between the ages of 18 and 25 years because the study was particularly targeted at that demographic group: Those within this age range represent a prime demographic group that is at highest risk for HIV infection and other STDs (Shisana et al., 2005).

Materials

Questionnaires

A *Demographic Questionnaire* (see Appendix A) sought to obtain information about the participants' race, age, home language, and their caregiver's level of monthly income. The *Relationship and Sexual History Questionnaire* (see Appendix B) sought to obtain information about the participants' sexual history. The latter questionnaire also sought to gauge attitudes towards brand and generic condoms. Both of these questionnaires were created specifically for the purposes of this study.

Validity and psychometric issues related to the IAT

At this juncture, it is worth exploring the properties of the IAT. A number of validity and reliability concerns have been raised with regard to the IAT. In essence, the major internal validity concern with regard to the IAT is whether the IAT effects (*D* scores) that are derived from the task are in fact simply a result of other confounding variables contrary to the aims of

the study (Goven & William, 2004). The subsequent section will briefly review and address the two central concerns raised in the literature concerning the internal validity of the IAT: (a) the order of the combined tasks used in the IAT, and (b) the familiarity of stimuli used in IAT tasks (Nosek, Greenwald & Banaji, 2007). Additionally, some authors (e.g., Arkes & Tetlock, 2004; Olson & Fazio, 2004) have raised questions regarding the construct validity of the IAT. The main question here is whether the test adequately defines and measures what it proposes to investigate (Karpinski, 2002). More specifically with regard to construct validity, the main concern is whether the IAT accurately measures variations in association strength that it proposes to test, e.g., the target concepts (e.g., *men-women*) and their attributes (e.g., *good-bad*) and whether these correlate with explicit attitudes (Nosek, Greenwald, & Banaji, 2007).

With regard to the internal validity of the IAT, as mentioned above a number of concerns have been raised and addressed in the IAT literature. The depth and scope of these debates is beyond the purview of the current thesis, yet it is safe to say a number of concerns have been successfully addressed since the introduction of the measure (please see Nosek et al., 2007). The concerns that have been raised include: the validity of results of individuals who have previously undertaken the IAT (Greenwald, et al., 2003); intertrial interval duration of the IAT (Greenwald et al, 1998); the handedness of participants, and how these factors affect the IAT effect scores (Greenwald & Nosek, 2003). It is, however, important to address two of the main internal validity concerns raised in the literature: (a) familiarity of stimuli used in the IAT, and (b) the order of combined tasks use in the IAT and how both these factors could affect the IAT effect score (*D*).

The first challenge to the IAT has always been the issue of familiarity (Dasgupta, Greenwald, & Banaji, 2003). The issue of familiarity was first noted with regard to the race IATs. Most participants (mainly white) were repeatedly made aware that they were responding noticeably faster and making fewer errors when they had to pair “White” with pleasant stimuli and “Blacks” with unpleasant stimuli in the race IAT. The main question that arose with regard to the IAT was, “Can the automatic bias captured by the IAT be explained by the subjective lack of familiarity with one group (Black) compared to other (White) or by the objective frequency of occurrence of the category Black versus the category White in American culture”? (Dasgupta et al., 2003, p 240). Arguments were raised against the device, stating, for instance, that the race IAT always represented racial groups with stereotypical Black (e.g.,

Latoya and *Tyrone*) and White (e.g., *Wendy* and *Brandon*) first names. It was argued that they are fewer “*Latoya*” and “*Tyrone*” names in the American populations than they are “*Wendy*” and “*Brandon*” names, and that thus the difference in the objective frequency with which these names occur in the American population was likely to elicit differential feelings of familiarity in perceivers. In other words, because of their low frequency, racially identifiable Black names were likely to be less familiar to perceivers than racially identifiable White names (Dasgupta et al., 2003). It was argued that greater familiarity with regard to names may lead to more liking of one group than another (Zajonc, 1968). Thus, White names may accrue more positivity than Black names, making it easier for people to associate White with good and Black with Bad in the IAT measure.

In their study, Dasgupta and colleagues (2003) devised a new measure in which they replaced first names in the IAT with pictures of unfamiliar Black and White individuals. The results of their study showed that people still showed a preference for White Americans relative to African Americans. Ottaway, Hayden, and Oakes (2001) also found that even when Hispanic, Black, and White names were equated in terms of objective frequency and subjective familiarity, people still unconsciously favoured White American over Blacks and Hispanic Americans. The authors concluded that familiarity was not a substantial source of artefact as long as stimuli used in the IAT to represent a category were not altogether unfamiliar to participants. In another study that sought to demonstrate that IAT effects were not simply due to familiarity, Phelps et al. (2000) illustrated that there was differential brain activation of the amygdala in response to the race IAT, and that individuals responding to these IATs still showed a preference for White versus Black faces on the IAT. Based on these results, one may safely conclude that IAT is not so much a measure of familiarity as a measure of implicit cognition (Dasgupta et al., 2003).

A second concern that has been noted regarding internal validity of the IAT is the issue of the pairing order used in the task. It has been argued that that the IAT effect is usually biased towards indicating greater strength of associative pairing in the first of the IAT’s two combined tasks (Greenwald et al., 1998). For example, in an age IAT, participants who first sort *Old* with *Bad* and *Young* with *Good* and then sort the reverse configuration, show a stronger indication of implicit preference for *Young* over *Old* than participants who first sorted *Old* with *Good* and *Young* with *Bad* (Greenwald & Nosek, 2001).

For clarity, is it worth reviewing the standard format of the IAT before arriving at the findings regarding, and solutions to, the issue of internal validity with regard to the order and presentation of the pairing effects. The standard IAT format involves five blocks (this has since been modified to seven blocks) of sorting trials. Following the above example, the first block would typically contain 20 trials of sorting *Old* and *Young* people into their respective categories. The next block would involve 20 trials of sorting *Good* and *Bad* terms into their respective categories. The third block contains 20 trials of sorting *Young + Good* terms on one key and *Old + Bad* on another key, a pause, and then another 40 trials of the same sorting condition. In the fourth block, respondents again sort *Old* and *Young* for 20 trials, but this time in the opposite keys from the third block. The fifth block contains 20 trials of sorting *Young + Bad* on one key, and *Old + Good* on another key, a pause, and 40 more trials of the same sorting condition. The third and fifth blocks are counterbalanced between subjects (giving rise to the task pairing effect).

Nosek, Greenwald, and Banaji (2005) argued that, if the pairing order effects are due to the interference caused by learning an initial response set, and then needing to replace this with a new response, that extra practice with the new response set should reduce the influence of pairing effects. They conducted a study that involved five different IATs (*Young-Old*, *Asian-White*, *Gender-Science*, *Black-White*, *Dark Skin-Light Skin*), with over 4000 participants. They found that increasing the number of practise trials on Block four to 40 trials significantly contributed to a reliable IAT effect score. They therefore argued that the elimination of order effects would be seen if the magnitude of the order effect was equal to zero. The authors found that increasing the number of practice trials had a strong influence in reducing the order effect from an average of 0.15 with 20 practice trials to an average of 0.03 with 40 practice trials. In summary, Nosek and colleagues showed, quite clearly, that one of the greatest challenges to the internal validity of the IAT (pairing order effects) could be solved by adding practice trials to the reversed single discrimination practice block.

The next section will briefly review one of a number of studies that report on evidence for the construct validity of the IAT. Many studies have demonstrated and reported on the construct validity of the IAT (see, e.g., Banse, Seise, & Zerbes, 2001; Cunningham, Nezlek, & Banaji, 2004; Cunningham, Preacher, & Banaji, 2001). The particular study reviewed here (Nosek & Smyth, 2007) provides evidence for the convergent and discriminant validity of the IAT, a major issue raised in the literature.

With regard to the convergent and discriminant validity of the IAT, a multitrait-multimodal (MTMM) investigation of the IAT was derived and correlated to self-report measures across seven attitude domains (*Flower-Insect; Gay-Straight; Creation-Evolution; Democrat-Republican; Humanities-Science; Thin-Fat; White-Black*). The MTMM is a matrix developed by Campbell and Fiske (1959) that evaluates convergent and discriminant validity. The MTMM matrix, according to its developers, requires the measurement of two or more ostensibly distinct constructs by two or more measurement methods. Convergent validity is demonstrated when indicators of a given trait (in the case of IAT studies, an attribute) correlate highly across measurement methods. Discriminant validity is obtained when correlations between ostensibly different traits are low (Campbell & Fiske, 1959). In their study, which included 287 participants, Nosek and Smyth (2007) asked participants to complete at least four pairs of IATs mentioned above. Participants first had to complete a Flowers-Insect IAT with the order of blocks conforming to standard guidelines developed by Greenwald et al. (2003).

For the remaining IATs, response blocks for all tasks were randomized and single-discrimination practice blocks were eliminated from the study. For example, after the Flower-Insect IAT, a participant would receive the race attitude compatible trial (i.e., compatible with the dominant prejudice) in which Black faces and bad words are to be categorised with one response key and White faces and good words are categorised with another key. Participants would not have an opportunity to practice the simple, single categorisation of Black faces from White faces. When this was complete, participants received the incompatible block of Gay – Straight IAT (*gay + good* done on one key, and *straight + bad* done on another key). The participants then received the *Democrat + bad / Republican + good* block, then the incompatible block of race attitudes. The authors argued that this atypical approach provides a test of identifying attitude factors because the component performance tasks are intermixed with performance tasks for the other attitude domains. In this way, one can allow substantial opportunity for method variance factors to influence IAT performance and thus challenge the hypothesis that attitude factors can be identified despite intermixed performance blocks.

Nosek and Smyth also had participants report on their attitudes towards each of the target objects pairs using two 9-point semantic differentials. Anchors for these differentials varied

across data collection. The anchors included the following four pairs: *cold-warm*, *unpleasant-pleasant*, *bad-good*, and *favourable-unfavourable* (most IAT studies make use of these anchors when measuring explicit self-reports). Positive values indicated greater liking for the object that were being measured. Scores ranged from on average from -8 to +8. One could thus deduce attitudes from these scales. For example, a participant who rated gay people as a 5 on the bad-good scale and straight people as a 7 would have a difference score of 2, indicating relative preference for straight people.

Using this design, Nosek and Smyth found strong evidence for both convergent and discriminant validity of the IAT. That is to say, the IAT attitude measures were related to their corresponding self-report measures, and were not related to self-report measures of other traits. The authors also used structural equation modelling within their MTMM investigation to show that the best fitting models represented the IAT and self-reports as related but distinct constructs rather than as single attitude constructs, even after the authors allowed for common method variance in both measures. Similar findings have been reported for self-esteem (Greenwald & Farnham, 2000) and for racial attitudes (Cunningham et al., 2001).

Overall, although there is some minor and continuing debate over the validity and reliability of the IAT as a measuring device, the consensus is that the test is a relatively reliable and dependable tool that can distinguish explicit self-report from “hidden biases” (Brunel et al., 2004; Dasgupta et al., 2003). The task continues to receive widespread support in a diverse array of disciplines including social and cognitive psychology (Fazio & Olson, 2003), clinical psychology (Teachmann, Gregg, & Woody, 2001), market research (Maison et al., 2004), and neuroscience (Richeson et al., 2003), to name but a few.

Implicit Association Test (IAT)

The IAT used in this study was programmed using E-Prime version 1.0 (Psychology Software Tools, 2002, Pittsburgh, Pennsylvania). The IAT consisted of seven blocks of trials. The first set of IAT stimuli consisted of five words used to capture the self pronouns (*I, me, my, mine, self*) and five other words used to capture impersonal pronouns (*they, them, their, theirs, others*). The concept nouns were selected from the list provided by Greenwald et al. (2002). The second set of IAT stimuli consisted of condom pictures taken from the internet

(see Table 1); these were specifically designed to include pictures of condom brands found in the South African market.

IAT overview. Table 2 is a schematic presentation of the IAT protocol used in this study. The IAT procedures used here were modelled on those of Marsh et al. (2001).











Like most IATs, the protocol in this study was designed to be suitable for use in any population that might feature low literacy rates (e.g., a low-SES population). Furthermore, IAT research has successfully used as few as 20 trials (e.g., Hetts, Sakuma, & Pelham, 1999) and has used pictures as well as words (e.g., Fazio & Dutton, 1997; Ginner-Sorolla, Garcia, & Bargh, 1999). Thus, in the current study, I used stimuli that were simplified and easy-to-perceive condom pictures, and word instructions that emphasized speed. Throughout the study, the E-prime applet presented the stimuli and stored the latencies before sending the data back to the Web server after completion.

On each IAT trial, a stimulus item (a word or a picture) was presented in the centre of the computer monitor. At the top left and top right of the screen were labels designed to remind participants of the choice of categories into which the stimulus item was to be sorted. Participants responded to this categorization task by pressing, on the computer keyboard, either the *z* key (to indicate that the stimulus item was to be placed into the category represented by the top left label) or the *m* key (to indicate that the stimulus item was to be placed into the category represented by the top right label). They were instructed to respond as quickly and as accurately as possible. For blocks 1, 2, and 5, the program randomly selected items from the stimulus lists. For blocks 3, 4, 6, and 7, the program randomly selected items under the constraint that the sequence of trials alternated between the presentation of a (brand/generic condom) picture and the presentation of a (self/other) word.

If the participant responded correctly (i.e., made the correct categorization), the program proceeded to the next trial, after an inter-trial interval of 150 milliseconds. If the participant made an error, a red sign saying "ERROR" appeared below the stimulus and remained there until the participant responded correctly. Participants were instructed to correct their errors as quickly as possible. The next trial did not proceed until the participant responded correctly. The interval after a correct response was set at 400 milliseconds.

Table 1.

Pictures of Brand and Generic Condoms Used Within the Current IAT

| BRAND CONDOMS | GENERIC CONDOMS |
|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |

Note. All condom images were taken from the Internet.

As shown in Table 2, in Block 1 participants categorised the presented stimuli concept as either “self” or “other”, using the *s* and *m* keys. In Block 2, participants used the same keys to categorize images of condoms as either “brand” or “generic” using the same keys as above.

In Block 3, a set of practise trials, these two tasks were combined in two test blocks of 20 trials each; here, the association between brand-name condoms and personal nouns, on the one hand, and generic condoms and impersonal nouns, on the other, was measured. Block 4 was the second block of combined categorization task. Unlike Block 3, this was not a practise block; the data from this block were used as outcome measures.

In Block 5, participants received a second practice block of 20 trials in which the keys by which the categorization of “self” and “other” pronouns was reversed. In Block 6, a practise block, participants then performed a new combined categorization task in which the categorization of “self” or “other” was done with the *z* key, and the categorization of “other” or “brand” was done with the *m* key. Block 7 was the second block of the reversed combined categorization task. Unlike Block 6, this set of 40 trials was not a practise block; the data from this block were used as outcome measures.

The critical blocks of interest were therefore Blocks 4 and 7 (i.e., those that involve the dual-categorization tasks). The order in which participants perform the combined categorization blocks (i.e., 3–4 and 6–7) was counterbalanced across participants. The IAT task took roughly 8 minutes to complete.

Table 2.
Sequence of Blocks for the IAT used in the Current Study

| Block number | Block description | Type of block | 'z' key category | 'm' key category | Number of trials |
|--------------|----------------------------------------|--------------------|------------------|------------------|------------------|
| 1 | Single categorization of target word | Practice | Self | Other | 18 |
| 2 | Single categorisation of condom choice | Practice | Brand | Generic | 20 |
| 3 | Combined categorisation (practice) | Practice | Self or Brand | Other or Generic | 20 |
| 4 | Combined categorisation(test) | Test | Self or Brand | Other or Generic | 40 |
| 5 | Single categorisation of target word | Practice, reversed | Other | Self | 40 |
| 6 | Combined categorisation | Practice, reversed | Other or Brand | Self or Generic | 20 |
| 7 | Combined categorisation | Test, reversed | Other or Brand | Self or Generic | 40 |

Note. A trial is defined as the time from the onset of a single stimulus to the correct categorization of that stimulus. Trials on which an error was made required the participant to correct the error before proceeding. Blocks B3, B4, B6, and B7 alternate trials, presenting a self or other concept with trials presenting a brand or generic condom. The sorting rules in blocks B1, B3, B4 were counterbalanced with B5, B6, and B7 between subjects.

Procedure

All participants were tested independently in a research laboratory in the Department of Psychology at UCT or in a quiet room at the student residence. This room, which was the residence's study room, was especially reserved for the research study so as to ensure no interruptions. The room, like the psychology research laboratory, was equipped with desks, computers, and chairs. Upon arriving at the study location, the participant was seated at a desk equipped with a computer. Four computers were utilised for the study.

To confirm information gathered via the recruiting sign-up sheet, the researcher asked the participant about his/her relationship status before allocating him/her to a computer (and therefore to a study group). Once seated, the participant was presented with an informed consent document (see Appendix F). After reading and signing the consent form, the participant was administered the Demographic Questionnaire. Once this questionnaire was completed, the participant then proceeded to complete the IAT. Following this, the participant completed the Relationship and Sexual History Questionnaire. If the first two questions on the latter questionnaire indicated eligibility to proceed with the rest of the study protocol, the participant then completed the rest of the questions on that questionnaire, as well as the set of questions about explicit attitudes toward condom use. At the completion of these procedures, the participant was provided with a total debriefing and was dismissed.

Statistical Analysis

For the IAT, I used the scoring algorithm recommended by Greenwald and colleagues (2003) to derive the IAT effect (see Table 3). This scoring algorithm involves computing the difference score between mean response times per trial on Blocks 4 and 7, and dividing that difference score by the pooled standard deviation of response times. The resulting IAT effect, D , is similar to an effect-size measure. As noted by Greenwald et al. (2003), the division of a difference between means by a standard deviation is quite similar to procedure used to derive the well-known effect-size measure d (Cohen, 1977). The scoring algorithm also requires one to eliminate (a) assessments on which a participant had response times of less than 300 ms on more than 10% of the trials (there were no such assessments in this study), (b) all response times $> 10,000$ ms (there were none in this study), and (c) assessments with too many response errors (consistently

over 10 errors per Block of 20 trials and consistently over 20 errors per Block of 40 trials) (there were two such assessments in this study). Following the scoring algorithm guidelines recommended by Greenwald and colleagues, the reaction times on incorrect responses were replaced by the block mean (correct responses) + 600 ms.

All statistical analyses were completed using STATA version 10 (StataCorp, LP, 2007, College Station, Texas). The level for statistical significance was set at $\alpha = 0.05$. The study's design allowed for both within- and between-groups analyses. Details about specific analyses are provided before presentation of their results. Unless otherwise stated, all of the required assumptions were upheld for each statistical analysis. Broadly speaking, chi-squared analyses were used to describe between-group differences in explicit attitudes towards condom choice. Similarly, findings of incidental interest with regard to between-group differences were derived primarily using chi-square tests of independence. *T*-test analyses were conducted to describe between-group differences in implicit attitudes towards condom choice.

More specifically, with regard to testing Hypotheses 1 and 2, because there were two groups in the study, a chi-square test of independence was performed to examine the relations between the use of generic condoms and group membership. Similarly, a chi-square test of independence was performed to examine the association between the use of brand-name condoms and group membership. I tested implicit attitudes towards condom choice using the scoring algorithm recommended by Greenwald and colleagues to derive the IAT effect (Greenwald et al., 2003). Using the *D* score as an outcome variable, *T* test analysis was used to detect statistical significance between the groups with regard to implicit attitudes towards condom choice.

To test Hypothesis 3, Spearman's correlation was used to calculate the correlation between implicit and explicit attitudes towards condom choice. All IAT literature calculates correlation ratios in order to test for an association between explicit and implicit attitudes (Greenwald et al., 2003).

Table 3. *Summary of IAT Scoring Procedure Recommended by Greenwald et al (2003)*

-
1. Delete trials greater than 10, 000 milliseconds
 2. Delete subjects for whom more than 10% of trials have latency less than 300 milliseconds
 3. Compute the inclusive standard deviation for all trials in Stages 3 and 6 and likewise for trials in Stages 4 and 7
 4. Compute the mean latency for responses for each of Stages 3, 4, 6, and 7
 5. Compute the two mean differences:
(Mean Stage 6 - Mean Stage 3) and (Mean Stage 7 - Mean Stage 4)
 6. Divide each difference score by the associated inclusive standard deviation
 7. D = the equal-weight average of the two resulting ratios
-

Note. This computation is appropriate for designs in which subjects must correctly classify each item before the next stimulus appears. If the subject can proceed to the next stimulus following an incorrect response, the following steps may be taken between Steps 2 and 3 in the table: (1) compute the mean latency of correct responses for each combined Stage (3, 4, 6, 7); (2) replace each error latency with an error penalty computed as the Stage Mean + 600 msec. Proceed as above on Step 3 using these error penalty latencies. Stage numbers refer to the Blocks depicted in Table 2.

Ethical Considerations

Due to the sensitivity of the research, it was my task to maintain the confidentiality of relationship status of all the participants who took part in the study. To assure participants of this confidentiality, I did not allocate specific computer workstations for the two relational groups (Casual Sexual Relationship; Exclusive Sexual Relationship) in the study. I made sure that when participants arrived at the testing laboratory that they were free to choose to work from any of the different computer workstations available for the study. Furthermore, all data (both computer-generated and paper-and-pencil) were never associated with any identifying information about the participant.

All aspects of the research were approved by the Research Ethics Committee of the Department of Psychology at the University of Cape Town.

CHAPTER THREE: RESULTS

Demographic Characteristics of the Sample

Table 4 presents the demographic characteristics of the sample, broken down by study group. As can be seen, the final sample consisted of 78 participants (39 males and 39 females), ranging in from the age of 18-25 years. The sample was relatively homogenous in terms of the major demographic variables: There were no statistically significant between-group differences with regard to age, $t(76) = -0.0231, p = 0.98$, or with regard to household income level, $\chi^2(5) = 2.89, p = 0.74$.

Table 4
Demographic Characteristics of the Current Sample

| Variable | Sample (<i>n</i> = 78) | Relationship Group | |
|-------------------------------|----------------------------|-------------------------------|--------------------------------|
| | | Exclusive (<i>n</i> = 39) | Casual Sex (<i>n</i> = 39) |
| Age (years) | | | |
| Range | 18-25 | 18-24 | 18-25 |
| Mean (SD) | 22.04 (4.87) | 22.05(5.25) | 22.02 (4.52) |
| Sex (M:F) | 39:39 | 19:20 | 19:20 |
| Household Income Level | | | |
| R0-499 | 9 | 4 | 5 |
| R500-999 | 3 | 1 | 2 |
| R1000-2499 | 10 | 4 | 6 |
| R2500-5499 | 9 | 3 | 6 |
| R5500-9999 | 12 | 7 | 5 |

Testing Hypotheses 1 and 2

These hypotheses may be stated as follows:

1. Implicitly and explicitly, participants in the Casual Sexual Relationships group will, relative to those in the Exclusive Relationship group, show a stronger preference for brand-name condoms over generic condoms because they will be concerned with projecting a positive self-concept to their partner.
2. Implicitly and explicitly, participants in the Exclusive Relationship group will, relative to those in the Casual Sexual Relationships group, show a stronger preference for generic condoms over brand-name condoms because they will have relatively little concern with projecting a positive self-concept to their partner.

Explicit attitudes toward condom choice

A chi-square test of independence was performed to examine the relation between the use of generic condoms and group membership. Data regarding the use of generic condoms were derived from these two questions:

1. *When you have sex, how often do you use generic (free, government-issued) condoms?, and*
2. *In the last three months, how often did you use generic (free, government-issued) condoms*

Appendix B shows the response options for each of these questions.

The relationship between self-reported use of generic condoms and group membership was not statistically significant for data from either of these questions, $\chi^2(5) = 4.43, p = 0.35$, for the first question, and $\chi^2(5) = 4.78, p = 0.50$, for the second question. Otherwise stated, there was no association between relationship status (being in an exclusive relationship versus being in a casual sexual relationship) and the use of generic condoms; participants in neither group showed a particular explicit preference for the use of generic condoms.

Similarly, a chi-square test of independence was performed to examine the association between the use of brand-name condoms and group membership. Data regarding the use of brand-name condoms were derived from these two questions:

1. *When you have sex, how often do you use brand-name condoms (e.g., Durex, Trojan)?, and*
2. *In the last three months, how often did you use brand-name condoms (e.g., Durex, Trojan)?*

Appendix B shows the response options for each of these questions.

The relationship between self-reported use of brand-name condoms and group membership was not statistically significant for data from either of these questions, $\chi^2(5) = 4.39, p = 0.51$ for the first question, and $\chi^2(5) = 4.65, p = 0.52$ for the second question. Otherwise stated, there was no association between relationship status (being in an exclusive relationship versus being in a casual sexual relationship) and the use of brand-name condoms; participants in neither group showed a particular preference for the use of brand-name condoms.

Implicit attitudes toward condom choice

As noted earlier, to measure implicit attitudes towards condom choice I used the scoring algorithm recommended by Greenwald and colleagues to derive the IAT effect (Greenwald et al., 2003). This scoring algorithm involves computing the difference score between mean response times per trial on Tasks 4 and 7, and dividing the difference score by the pooled standard deviation of response times. Because Block 4 paired (*self + brand-name condoms*) and (*other + generic condoms*), and Block 7 paired (*other + brand-name condoms*) and (*self + generic condoms*), the derived D600 score (effect size) is interpreted as follows: a higher D600 score means a stronger association between *self* and *brand-name condoms* relative to *other* and *brand-name condoms*. D600 and D scores will be used interchangeably

Before proceeding with between-groups comparisons using the D600 score as a dependent variable, I checked the assumptions underlying the particular inferential statistical tests (an independent-samples *t*-test) that were to be used. Firstly, in terms of the assumption of normal distribution of data, reaction time data from both the critical blocks (Block 4 and Block 7) were normally distributed for both the Exclusive Relationship Group and the Casual Sexual Relationship Group (see Figures 1-4), as were the D600 scores for both the Exclusive Relationship Group and Casual Sexual Relationship Group combined (see Figure 5). Secondly,

Levene's test was not statistically significant ($p = 0.204$), indicating that the assumption of homogeneity of variance were upheld.

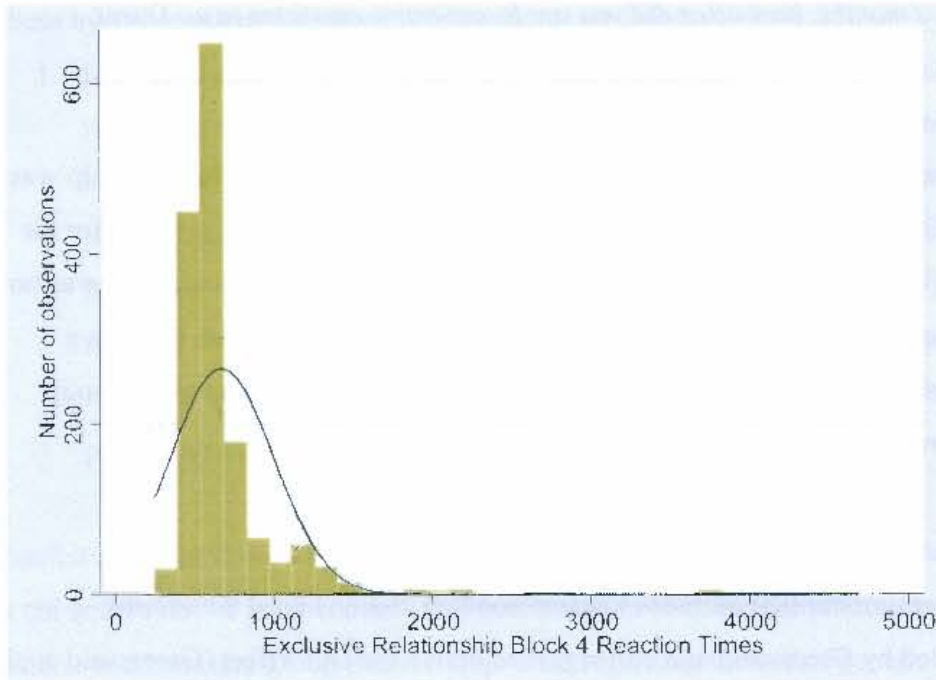


Figure 1. Histogram showing the distribution of the reaction time data of IAT Block 4 (Self + Brand) for participants in the Exclusive Relationship group.

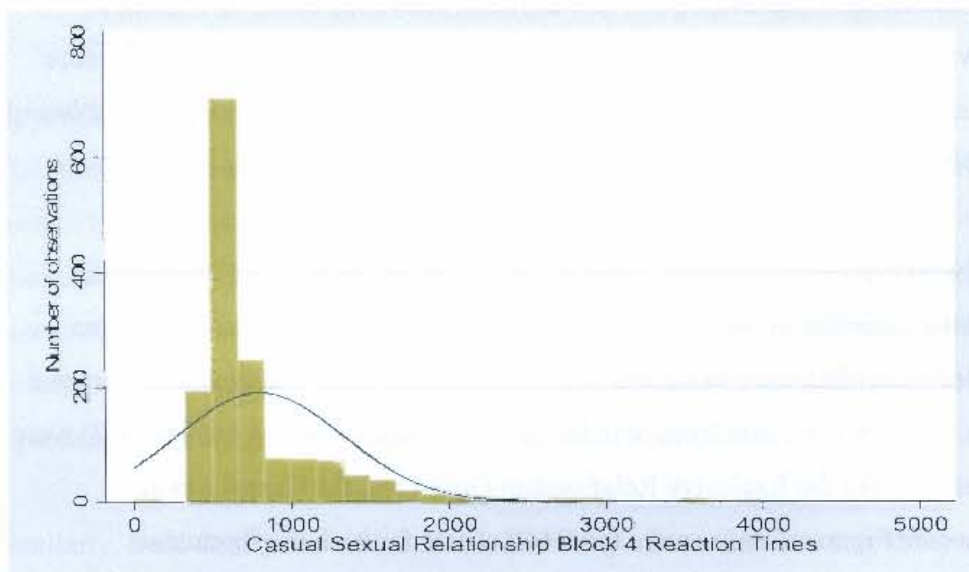


Figure 2. Histogram showing the distribution of the reaction time data of IAT Block 4 (Self + Brand) for participants in Casual Sexual Relationship group.

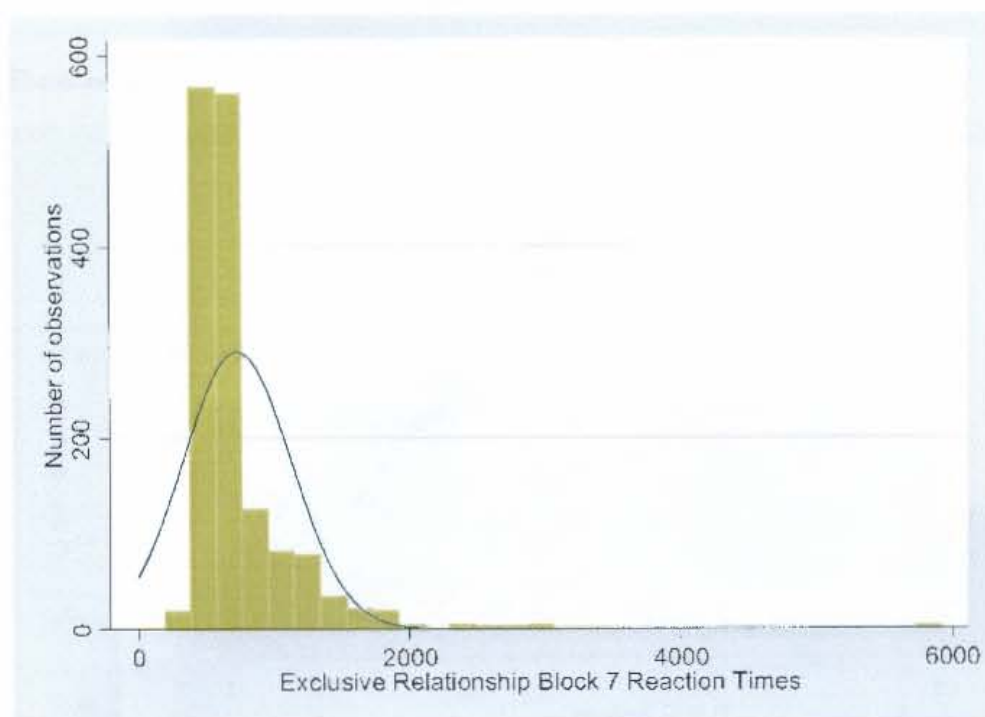


Figure 3. Histogram showing the distribution of the reaction time data of IAT Block 7 (Other + Brand) for participants in the Exclusive Relationship group.

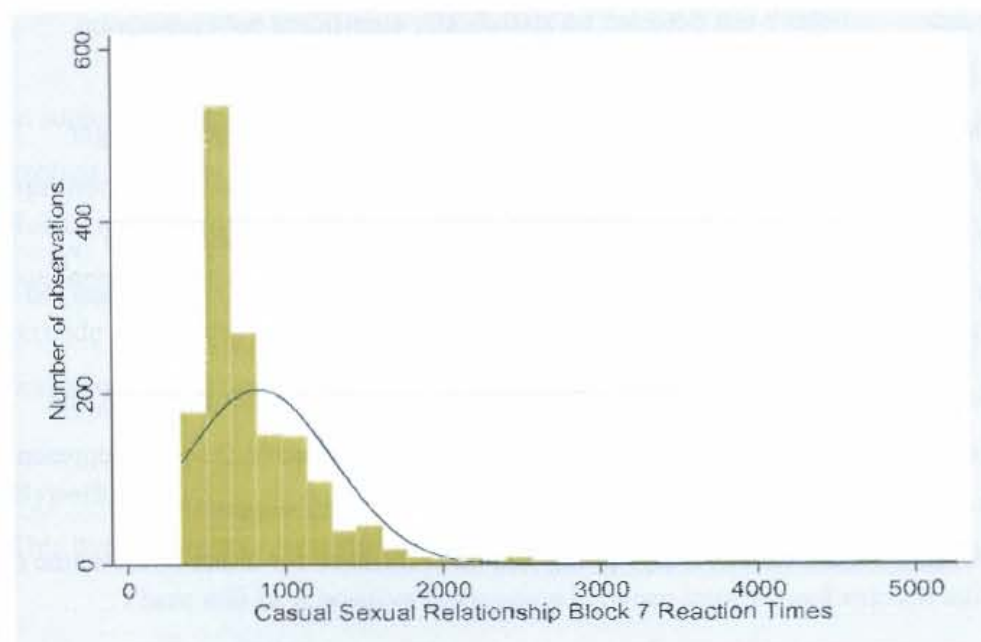


Figure 4. Histogram showing the distribution the reaction time of IAT Block 7 (Other + Brand) for participants in the Casual Sexual Relationship group.

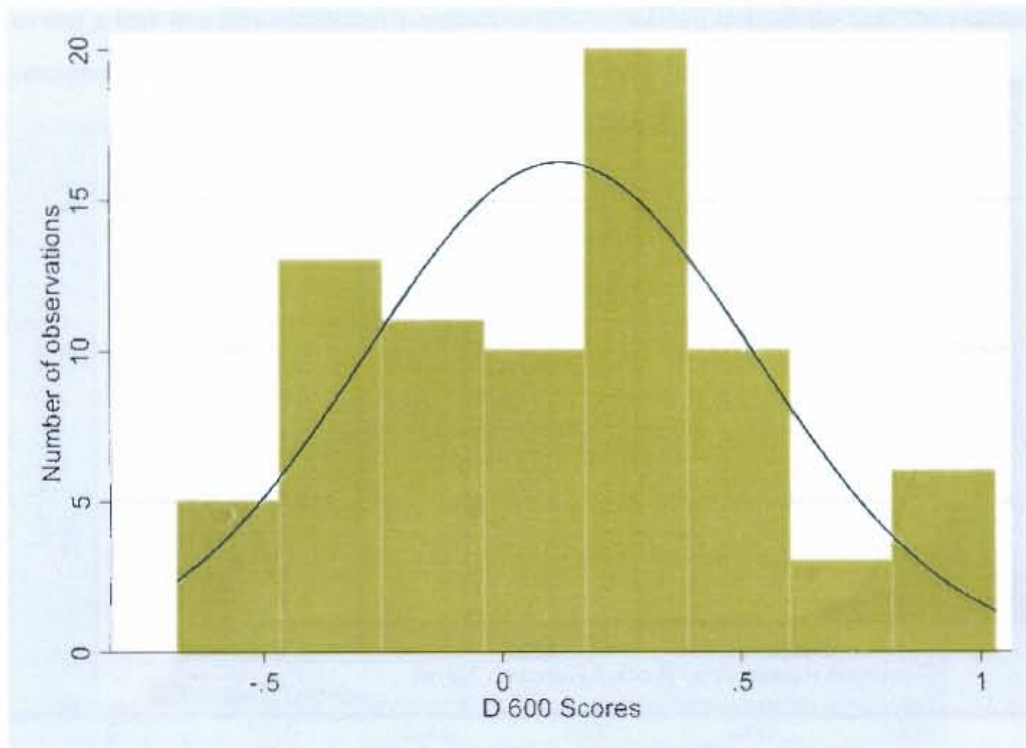


Figure 5. Histogram of D600 scores for the Casual Sexual Relationship group and the Exclusive Relationship groups combined.

A two-tailed independent-samples *t*-test detected no statistically significant between-group differences on the D600 measure, $t(72) = 1.86, p = 0.07$. Hence, the hypothesis was disconfirmed: participants in the Casual Sexual Relationships group did not have a stronger implicit preference for brand-name condoms than did participants in the Exclusive Relationship group. It should be noted, however, that participants in the Exclusive Relationship group revealed a stronger IAT effect for the association with brand name condoms, $d = 0.22$, than did participants in the Casual Sexual Relationships group, $d = 0.04$, where positive *D* scores represent an association between self and brand-name condoms (i.e., the higher the score, the stronger the association between self and brand-name condoms) and negative *D* scores represent an association between self and generic condoms. This latter *D*600 score suggests that participants in the Casual Sexual Relationships group had no preference for either brand-name or generic condoms.¹

¹In IAT protocols, a D600 score of 0 (or close to 0, as in this case) suggests that there is no preference for one category/concept over another (Greenwald et al., 2003).

These between-group differences in D600 scores are presented in Figure 6.

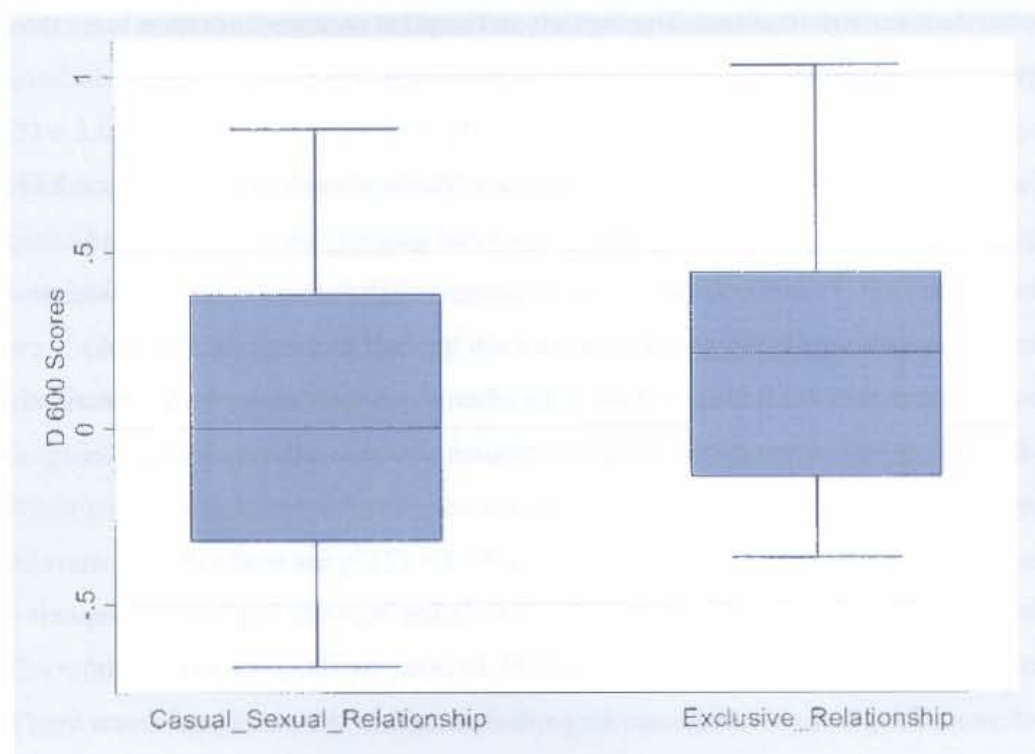


Figure 6. Box-and-whisker plot: D600 scores for each study group.

In summary, Hypotheses 1 and 2 were both disconfirmed with regard to both implicit and explicit measures. The current data provide no evidence that participants in the Casual Sexual Relationships group showed a stronger preference for brand-name condoms over generic condoms relative to participants in the Exclusive Sexual Relationships group, and they similarly provide no evidence that participants in the Exclusive Sexual Relationships group had a greater preference for generic condoms over brand-name condoms.

Hypothesis 3

This hypothesis may be stated as follows:

There will be a positive association between implicit and explicit attitudes towards condom choice.

Here, I was interested in investigating whether participants who explicitly declared a preference for brand-name condoms over generic condoms would also show implicit associations with brand-name rather than generic condoms. The explicit and implicit outcome measures were the same as used previously to test Hypotheses 1 and 2.

To calculate the correlation between implicit and explicit attitudes towards condom choice, I first derived an aggregate score of brand-name condom choice and generic condom choice and correlated this with the IAT *D* scores. Spearman's correlation coefficient was used to calculate the correlation. There was a significant correlation between implicit and explicit attitudes towards brand-name condoms, $r = 0.30$, $p = 0.0082$. In other words, participants who described a preference for brand-name condoms on the explicit measures also showed a preference for brand-name condoms on the IAT.

Interestingly, however, there was significant *negative* correlation between implicit and explicit attitudes towards generic condoms, $r = -0.27$, $p = 0.0079$. In other words, participants who described a preference for generic condoms on the explicit measures showed a preference for brand-name condoms on the IAT.

Analyses and Findings of Incidental Interest: Explicit attitude measures

Reasons for using condoms

Analyses of pooled data (both groups combined) derived from the question *Please rate the reasons why you use condoms*² suggested that concerns about HIV/AIDS were self-reported by participants as being statistically significantly associated with increased condom use, $\chi^2(4) = 10.92$, $p = 0.015$. Interestingly, birth control, partner's preference for condom use, comfort, and the prevention of STDs were not endorsed by participants as being statistically significantly associated with increased condom use (although the latter did approach statistical significance), $\chi^2(5) = 5.04$, $p = 0.41$, $\chi^2(5) = 8.04$, $p = 0.144$, and $\chi^2(5) = 8.26$, $p = 0.11$, $\chi^2(5) = 10.00$, $p = 0.059$, respectively.

²Response options for this question are shown in Appendix B.

Correlates of self-reported frequency of condom use

Neither group membership, nor gender, nor income level was statistically significantly associated with the frequency of condom use during sexual activity as self-reported on the question, *When you have sex, how often do you use condoms?*³ The relevant statistics here are $\chi^2(3) = 3.01, p = 0.372$, $\chi^2(3) = 1.19, p = 0.781$, and $\chi^2(15) = 13.96, p = 0.458$, respectively. Neither gender nor income level was statistically significantly associated with the frequency of generic condom use during sexual activity as self-reported on the question, *When you have sex, how often do you use generic (free, government issued) condoms?*⁴ The relevant statistics here are $\chi^2(25) = 32.37, p = 0.411$, and $\chi^2(20) = 16.58, p = 0.793$, respectively. Similarly, neither gender nor income level was statistically significantly associated with the self-reported frequency of brand-name condom use during sexual activity as self-reported on the question, *When you have sex, how often do you use brand name condoms (e.g., Durex, Trojan)?*⁵ The relevant statistics here are $\chi^2(5) = 4.22, p = 0.53$, and $\chi^2(25) = 35.34, p = 0.88$, respectively.

Correlates of self-reported frequency of sexual activity

There was a significant association between group membership and the frequency of sex per month as self-reported on the question, *Over the past year, how often on average; did you have sex per month?*⁶ The relevant statistic here is $\chi^2(5) = 15.73, p = 0.005$. On average, participants in the Exclusive Sexual Relationships group reported having more sex more frequently than did those in the Casual Sexual Relationships group. Of particular interest here is that 21 participants in the Exclusive Relationship group reported engaging in sexual intercourse more than 10 times per month, whereas only 6 participants in the Casual Sexual Relationships group reported that frequency of sexual intercourse.

There was also a significant association between gender and self-reported frequency of sex per month, $\chi^2(5) = 13.03, p = 0.015$. On average, females reported having more sex than males; 14 females (as opposed to only 9 males) reported engaging in sexual intercourse more than 10 times per month. There were, however, no significant associations between income and self-reported

³Response options for this question are shown in Appendix B.

⁴Response options for this question are shown in Appendix B.

⁵Response options for this question are shown in Appendix B.

⁶Response options for this question are shown in Appendix B.

frequency of sex per month, $\chi^2(25) = 32.37, p = 0.411$. In other words, socioeconomic status appeared to have no important impact on access to and availability of sexual activity, regardless of relationship status.

Analyses and Findings of Incidental Interest: Implicit attitude measures

Using the D score as an outcome variable, a two-tailed t -test did not detect a statistically significant between-group differences in terms of gender, $t(76) = 1.86, p = 0.67$. Of interest here, however, is that male participants revealed a marginally stronger IAT effect for the association with brand-name condoms, $d = 0.20$, than did females, $d = 0.01$.

Again using the D score as an outcome variable, a one-way ANOVA detected a statistically significant between-group difference in terms of income level, $F(5, 72) = 2.46, p = 0.04$. Of interest here is that participants in the highest income bracket showed the greatest association with preference for brand-name condoms, $d = 0.30$.

CHAPTER FOUR: DISCUSSION

South Africa has one of the highest HIV/AIDS prevalence rates in the world. The negative effects of the virus include, obviously, high mortality rates and, not so obviously, economic hardships, increased caregiver burden on grandparents, and so forth (Mangerah, 2008; Shisana et al., 2005; Steinberg et al., 2001). These effects are not exclusive to South Africa; they are also present in the rest of the sub-Saharan Africa, which continues to struggle due to the HIV pandemic (UNAIDS, 2006). Although concerns about curbing the spread of HIV/AIDS were central to the rationale for this study, this research did not focus on HIV/AIDS *per se*; rather, its aims were intricately connected to the broader sociocultural context in which the infection spreads. In particular, then, this research focused on the social marketing of condoms. Broadly stated, the emphasis and purpose of this research was an investigation of implicit and explicit attitudes towards condom choice (brand-name versus generic), and of how the context in which sexual intercourse takes place impacts upon that choice.

This is the first study to examine, using both explicit and implicit measures of attitudes, the associations between sexual relationship status and condom choice. The study's specific hypotheses were drawn from separate theoretical frameworks present in the fields of behavioural economics, decision-making studies, and social cognition. Although these are three distinct fields, theory present within those fields converges to suggest that a 'person-by-situation' approach was highly appropriate to adopt in the present research. The convergent theoretical framework from those three fields suggested this: Sexual intercourse is a context-specific activity (i.e., it provides a particular kind of consumption context), and a number of interpersonal and environmental dynamics are present in sexual relationships. That context, and those dynamics, influence decisions around condom choice.

Hence, the specific hypotheses tested in the current study were drawn from assumptions about what it means to be in the particular consumption contexts (where particular interpersonal/environmental dynamics are at play) established by casual sexual relationships as opposed to exclusive, monogamous, sexual relationships. To recap, casual sexual relationships

were defined as sexual intercourse that occurs outside the realm of a monogamous relationship. These relationships are therefore often superficial in nature, and individuals in these sexual situations are likely to want to project an ideal self-image to their (by definition, short-term) partner. Hence, following suggestions from extant literature in the consumer behaviour research field (Batra & Homer, 2004; Fennis & Pruyn, 2006) that underlie the dynamic notion that different consumption contexts for products (e.g., whether they are consumed privately or publicly) will invariably induce and influence the choice and use of some products over others, I proposed that individuals in casual sexual relationships would be likely to use the assumed personality characteristics and images associated with luxury brand-name condoms to express to their short-term partner an ideal self-image (i.e., an image, not necessarily based in actuality, of who they are and what they represent). In contrast, I proposed that individuals in an exclusive, monogamous, sexual relationship would show a weaker preference for brand-name condoms (in fact, they would prefer generic condoms, as much for practical as for economic reasons): In exclusive relationships, there is less need to impress and project an ideal self-image to the (by definition, long-term) partner because the individual is already known by their partner.

In summary, the specific hypotheses tested in the current study were these: (1) Both implicitly and explicitly, individuals in casual sexual relationships would show a greater preference for brand-name condoms over generic condoms, (2) both implicitly and explicitly, individuals in exclusive, monogamous, sexual relationships would show less preference for brand-name condoms over generic condoms (and might, in fact, show the opposite preference), and (3) regardless of group membership status, implicit and explicit attitudes towards condom choice would be positively correlated.

In subsequent sections I will summarize the results of my findings, discuss ways in which these findings fit with and extend the literature in this field, note the limitations of the research, propose directions for future research, and highlight the contributions this research might make toward providing policy recommendations that could facilitate the continued fight against the spread of HIV/AIDS.

Summary of the Results: The state of the hypotheses

Hypothesis 1

Consumer behaviour research literature suggests that situational variables largely contribute to the purchase, use, and choice of particular products over others. Moreover, the literature suggests that brand choice and the context(s) in which consumers find themselves are congruent and consistent with one another. That is to say, in situations where impression management is high, the prediction would be that there is a strong propensity to purchase and use products for self-expressive purposes (i.e., individuals would rely on the symbolic image beliefs associated with particular products to express ideas about themselves to others). The hypothesis here, then, was that people in casual sexual relationships (a context relatively high in impression management needs) would want to project a positive 'front' or an ideal self to their partners. Participants in the Casual Sexual Relationships group would thus readily use and associate with the image belief of brand-name condoms over generic condoms, as the former more readily symbolize high-status, high-quality, and classy individuals and individual traits (Mulwo et al., 2009).

This hypothesis was disconfirmed. Participants in the Casual Sexual Relationships group showed no association between their ideal projected self-image and brand-name condoms. In fact, these participants showed no preference for either brand-name or generic condoms.

One possible suggestion as to why participants in the Casual Sexual Relationships group did not show any preference for one condom type over another is that this may be a reflection of the reality that casual sexual encounters often occur as spontaneous encounters involving heightened sexual arousal and desire. It is a possibility that when in the 'heat of the moment' judgment and decision-making may be compromised in terms of the specific type of condom to use (or whether to use a condom at all; Ariely & Lowenstein, 2006). Moreover, judgment and decision-making around condom choice (and condom use) in casual sexual relationship situations may be compromised even further by alcohol consumption (Regan & Dreyer, 2009).

Hypothesis 2

The hypothesis here, based largely on the same literature as cited above, was that people in an exclusive, monogamous, sexual relationship (a context relatively low in impression management needs) would not readily project a positive 'front' or an ideal self to their partner: They would already know and be known by that person. Participants in the Exclusive Relationship group would thus show a much weaker preference for brand-name condoms over generic condoms, and in fact might, for economic and practical reasons, prefer the latter over the former.

This hypothesis was also disconfirmed. Participants in the Exclusive Relationship group did not show a weaker preference for brand-name condoms than for generic condoms. In fact, these participants showed a *stronger* association between their ideal projected self-image and brand-name condoms.

Perhaps a consideration to take into account here is that, implicitly, these participants showed a preference for (i.e., had stronger associations with) brand-name condoms rather than generic condoms because they perceived the former to be safer than the latter. Because exclusive, monogamous relationships (at least the way they were defined in this study) are based on emotional attachment, love, and care, it is plausible to suggest that participants in this group showed an association with brand-name condoms as a means to express their desire to protect their partner against STDs and the like in the best possible way.

Hypothesis 3

This hypothesis was only partially confirmed: There was a significant positive correlation between implicit and explicit attitudes towards brand-name condoms but not towards generic condoms. People who expressed a preference for the use of brand-name condoms on the explicit measures also showed an implicit preference for brand-name condoms on the IAT. On the other hand, there was no evidence that participants who expressed a preference for generic condoms on the explicit measures also showed an implicit preference for generic condoms on the IAT.

These data are particularly consistent with the view that implicit and explicit attitudes, rather than reflecting a single underlying construct, may reflect dual attitudes that can be dissociated

from one another (Brauer, Wasel, & Niedenthal, 2000). This view is confirmed by empirical studies that have taken both implicit and explicit measures (see, e.g., Koole, Dijksterhuis, & van Knippenburg, 2001; Perugini, 2005); research has shown, for instance, that IAT scores and self-report measures capture distinct constructs (Greenwald & Farnham, 2000). With regard to the actual correlation between explicit and implicit attitudes, this can sometimes be high and statistically significant (e.g., $r = 0.69$ in a 2002 American presidential election IAT study; Nosek, Banaji, & Greenwald, 2002), whereas at other times it can be lower and not statistically significant (e.g., $r = 0.29$ in a self-esteem IAT study; Walker & Schimmack, 2008).

There are no solid explanations (outside of the fact that different constructs are being measured) within the IAT literature as to why this correlation is high at times and low at others, but nonetheless it is worth making one suggestion about why, in this study, the correlation was higher with regard to brand-name condoms. It could be suggested that people are not ashamed to show their attitudes towards brand-name condoms given that these attitudes are generally positive. On the other hand, explicit attitudes toward generic condoms are generally negative (Mulwo et al. 2009), so people would be unashamed of expressing their views explicitly, even though implicitly they might think differently; hence, a lack of correlation. As noted by Gawronski (2002), another suggestion might be that there may have been method-related factors within the study that could have influenced the magnitude of the correlation between implicit and explicit attitudes. These factors could be rooted in characteristics of either the implicit or explicit measures used in the study. For instance, with regard to the IAT, it has been suggested that randomizing the order of stimuli trials may confound individual differences of what is being assessed. It has also been suggested that the selection of thematic personal and impersonal words (e.g., *I, me, them, they*) may be more likely to have cross-category associations that may undermine a reliable assessment of intended associations, and so may affect what is being targeted (Hoffman, Gawronski, Geschwendner, Le, & Schmidt, 2005).

The Current Research Placed in the Context of Related Work

The current research is an expansion a very small group of research endeavours that have utilized the IAT to address questions about condom use in different kinds of sexual scenarios. In their study on implicit and explicit attitudes towards condoms, Czopp et al. (2004) found that, in

participants primed to consider casual sex scenarios, explicit attitudes were highly determinant of the use of condoms. My findings differed from those: The current data showed that, in participants who actually self-reported being in casual sex relationships, explicit attitudes towards condoms were not predictive of higher levels of condom use. Furthermore, with regard to implicit attitudes and preference for one type of condom over another (brand-name versus generic), participants in the Casual Sexual Relationships group showed no association.

Czopp et al. (2004) also found that, in participants primed to consider a sexual scenario between two committed and monogamous partners, implicit attitudes were highly predictive of the likelihood of using a condom. My findings replicated those: The current data showed that, in participants who actually self-reported being in an exclusive, monogamous relationship, implicit attitudes toward condoms were predictive of higher levels of condom use and of particular condom choice.

In summary, one of the contributions the current study makes to the literature on implicit and explicit attitudes towards condoms is that the study has shown that adding a choice component is a viable endeavour, particularly because choice of a particular type of condom in a particular sexual scenario may be driven by implicit, automatic processes.

Analyses and Findings of Incidental Interest: Explicit attitude measures

Reasons for Using Condoms

When participants were asked to rate the reasons why they use condoms, HIV/AIDS was given as the strongest factor associated with increased condom use. This finding is consistent with other studies showing that HIV/AIDS prevention is the main reason for condom use (Rickert, Joy, Gottlieb, & Bridge, 1989; Slaymaker & Zaba, 2003). In the Cape Area Panel Study (CAPS), a longitudinal study of a representative sample of youth in Cape Town, similar findings around the importance of HIV/AIDS in condom use were noted. Youth were initially recruited into CAPS in 2002 (wave 1); a subset were re-interviewed in 2003/2004 (wave 2), with the complete sample re-interviewed in 2005 (wave 3) and in 2006 (wave 4) (see Lam et al., 2008, for details). The relationship between perceived risk of HIV/AIDS infection and condom use was measured

at each point. At each wave, participants' perceptions of HIV/AIDS infection risk increased substantially and, importantly, this was correlated with a significant increase in reported condom use.

Although birth control and the prevention of STDs were not endorsed by participants in my study as being significantly associated with increased condom use, other studies have shown that STDs and birth control, especially for the population from which the current sample was drawn, are major and significant determinates of condom use (Maharaj & Cleland, 2006; Marseille, Kahn, Bellinghurst, & Saba, 2001). Perhaps one reason for the discrepancy between the results of this study and previous studies on with regard to birth control and STDs is that in this university sample students are not concerned with birth control and STD as they view HIV as more integral to their wellbeing than birth control. Many UCT workshops and presentations on condom use have focused on the importance of HIV prevention, and so maybe birth control and STD become secondary complements to HIV/AIDS.

Correlates of self-reported frequency of condom use

Neither group membership, nor gender, nor income level was statistically significantly associated with the frequency of condom use. These findings are different to most others reported in literature. Previous studies have noted that in exclusive relationships the frequency of condom use tends to decrease as time goes on; in fact, in these relationships condom use often becomes associated with mistrust (Adetunji & Meekers, 2001; Ali, Cleland & Shah, 2004; Van Rossem, Meekers, & Akinjemi, 2001). A possible explanation for the discrepancy between the current data and previously reported data is that in this study's sample the inclusion criterion for the exclusive relationship was a period of 12 months. It is possible that this is too short a period in which to decrease or even abandon the use of condoms. Other studies, particularly those by Ali et al. (2004) and Van Rossem et al. (2001), had samples comprised of married couples.

Previously published studies have also reported that gender plays a significant role in the decision to use or not use condoms. The imbalance in power relations between male and female partners in heterosexual relationships have been reported to influence the ability of young women to either refuse sex or negotiate the use of condoms. This has certainly been the case for

young women in South Africa, where high levels of physical and sexual coercion have been triggered by the attempt to discuss condom use (Wood & Jewkes, 1997). Perhaps one reason for the discrepancy between the results of this study and previous studies with regard to gender is that our sample, being university students, might be more aware of gender and power relations that exist in the broader society and might therefore be more than willing to engage on a discourse with their partners on the importance of and power relations prominent in sexuality.

Finally, previous literature has also reported that condom use and condom non-use cannot be divorced from the economic context in which people live. In low SES contexts, in particular, condom use is frequently perceived as a luxury (Shisana et al., 2005). Perhaps the discrepancy in our results with regard to condom use is that economics is not a big factor condom use at universities as condoms are freely distributed to all.

Analyses and Findings of Incidental Interest: Implicit attitude measures

Using the *D* score as an outcome variable, the data revealed that participants in the highest income bracket showed the greatest association with brand-name condoms. One explanation for this finding is perhaps that, considering the expense of brand-name condoms in South Africa, only certain individuals can consistently purchase them (Mulwo et al. 2009). So, participants in the highest income group showed the greatest association with these brands as they may have already been buying these brands and thus built an implicit familiarity and loyalty to them.

Limitations of the Current Research, and Proposed Solutions

Perhaps the major limitation of the current study (and one that it shares with most studies in sex research) is that I did not measure actual observable sexual activity in the participants; thus, predicting condom choice in sexual scenarios is, in this study, a matter of self-report and indirect inference. A number of studies have shown how weak the correlation is between self-report and actual behaviour (Darioitis, Pleck, Sonenstein, Astone, & Sifakis, 2009; Labus, Keefe, & Jansen, 2003), and so the reliance in this study on self-report measures is problematic.

A second limitation, related to the one outlined above, is that by not observing actual behaviour we have no way to ascertain whether participants' responses on the explicit and implicit

measures are predictive of the way they might behave in sexually arousing situations. As many previous researchers have noted (see, e.g., Ariely and Loewenstein, 2006), it would be more accurate to determine participants' response to condom use or condom choice decisions under conditions of arousal as opposed to non-arousal. Furthermore, as noted in previous research on sexuality and decision-making (see, e.g., Bouffard, 2002; Loewenstein, Nagin, & Paternoster, 1997), when people are not aroused they often misrepresent how they would behave under arousing conditions. It is fair to imagine that behavioural predictions made under states of sexual arousal would more accurately predict condom choice behaviour than those made under conditions of non-arousal. Without observing actual behaviour in the different situational contexts we want to study, we have no way to truly ascertain condom choice.

Finding proposed solutions to the above-mentioned limitations is difficult, mainly because of the ethical constraints surrounding any study that might propose to study sexual behaviour in the natural environment. One team of researchers (Ariely & Loewenstein, 2006) found a novel way to deal with such constraints, however. They sought to study the effects of sexual arousal on judgment and hypothetical decisions. Using a within-subject design, participants were asked to indicate, when in a state of sexual arousal or a neutral state, (a) how appealing they found a wide range of sexual stimuli and activities, (b) their willingness to engage in morally questionable behaviour in order to obtain sexual gratification, and (c) how willing they were to engage in unsafe sex.

In this study, participants (who were all heterosexual males, for the sake of convenience) were given a laptop computer and were asked to answer a series of questions presented on screen using a small handheld keypad. The laptop screen was divided into three panels; the activated panel was indicated on the screen by a bright red border on the left side of the screen. The right hand side of the screen displayed an "arousal thermometer" with regions coloured from blue to red representing increasing levels of arousal. Two keys on the keyboard allowed the user to move the probe on the arousal meter to indicate their momentary level of arousal. A large panel on the top left occupied the largest part of the screen, and this section displayed a diverse number of highly erotic photographs. When these pictures were activated, the same two keys used to move the probe on the arousal thermometer allowed the participants to scroll up and down

through the erotic photographs. A panel at the bottom of the screen presented a series of questions that the subjects were required to answer under these aroused states. Participants in the non-arousal condition were presented with the laptop and only the questions, no erotic photos were used in this condition. The questions were answered on a level of statements that ranged from “no” to “possibly” to “yes”.

Questions were designed to address the issues mentioned earlier: the attractiveness of different sexual activities to the respondent, the length the respondent would go to in order to obtain sexual satisfaction, and attitudes towards sexual risks in the heat of sexual passion. The set of questions that evaluated the attractiveness of different sexual activities to the participant included, for example, questions on the attractiveness of 50-60 year old women, animals, and obese women. The set of questions that evaluated the lengths to which the participant would go in order to obtain sexual satisfaction included questions about whether one would encourage a date to drink alcohol and whether one would slip her a drug in order to try to have sex with her. The set of questions that evaluated the likelihood of engaging in sexual risk behaviours included questions about the willingness to engage in unprotected sexual intercourse.

The researchers found that sexual arousal had a strong impact on all three areas of judgment and decision making. Under conditions of arousal, the participants reported greater levels of attraction to a wider range of sexual activities, a greater willingness to go to extraordinary lengths to obtain sexual satisfaction, and a greater willingness to engage in sexual risk behaviours.

Although the type of paradigm used by Ariely and Loewenstein can only be employed on a small scale, with small sample sizes, it provides an attractive model for future studies of sexual behaviour and of decision-making under conditions of sexual arousal. The results of such experimental studies would be a useful addition to the current literature, which primarily consists of large studies, with large sample sizes, that have different utilized survey, questionnaire, and other kinds of self-report methodologies.

The third limitation of the current study is that the research has mostly focused on the intrinsic (personality) and extrinsic (situational context) factors that guide condom choice and condom use. In so doing, the research has neglected other potentially important variables relevant to sexuality, mainly the study of HIV sexual risk behaviour in terms of different personality traits (e.g. risk-taking vs. risk-averse personalities) that are relevant to the study of condom use and different levels of engagement in unprotected sex. Given the emphasis on attributes of the individual in determining sexual risk behaviour (e.g., Ball & Schottenfeld, 1997; Cliff, Wilkins, & Davidson, 1993), a number of studies have systematically investigated the role of personality characteristics as determinates of practice that place one at risk for contracting HIV.

Literature does provide insights into the relationship between personality characteristics and sexual risk-taking. A number of studies have demonstrated relations between sensation-seeking and related constructs (impulsivity, venturesomeness, and sexual sensation-seeking) with a variety of sexual behaviours including the number of partners one has, and levels of condom use. Cliff et al. (1993), using a sample of 531 heterosexual genitor-urinary medicine patients, found that impulsivity and venturesomeness were the main personality traits that were associated with a lack of condom use. Horvath and Zucker (1993), using a sample of 220 male and 227 female college students, found that individuals (particularly males) with sensation-seeking and impulsivity traits were more likely to engage in risky sexual behaviours. Other studies have shown that individuals with sexual compulsivity traits were more likely to engage in unprotected sexual intercourse and to have a number of different sexual partners (Kalichmann & Rompa, 1995). There continues to be a growing interest in identifying personality traits as a distinct measure of HIV risk behaviour and the Five Factor Model (FFM) personality model (Agreeableness, Neuroticism, Extraversion, Openness to Experience, Conscientiousness) developed by Digman (1990) continues to be the most popular model to investigate sexual risk behaviour.

There is no doubt that the thesis would have been strengthened by determining how different personality traits would have explained the different variables under study particularly condom use and condom choice. Future research into condom use and condom choice should take this important factor into consideration as personality variables when considered into the realm of

sexuality research can explain a large variance of the conclusions derived from research findings and these would entail direct future research.

Another possible limitation of the current study involves the target stimuli used. Some IAT researchers have argued that the category “other” employed in IATs using pronouns (e.g., *self* vs. *other*) may be ambiguous with regard to its specific referent and thus may undermine a reliable assessment of the relevant associations (Karpinski, 2004). More generally, a limitation of the standard IAT protocol is that it requires the use of both a target category (e.g., *self*, or *brand-name condoms*, or *good*) and a contrast category (e.g., *other*, or *generic condoms*, or *bad*); therefore, it is sometimes difficult to determine whether it measures implicit attitudes towards the target or toward the contrast category. Moreover, the standard IAT yields a preference index, relative to a contrast concept. The Single Target Implicit Association Test (ST-IAT) reduces such an arbitrary influence in the evaluation of a target category and often provides a stronger attitudinal valence of what is been assessed.

This problem could possibly be resolved by using more specific contrast categories, or by developing measures that employ a single target category IAT. The unipolar concept IAT (SA-IAT as used by Penke, Eichstaedt, and Asendorpf (2006), or the Single Category Implicit Associations Test (SC-IAT) as used by Steinmann and Karpinski (2008)) does not need a contrast target or attribute category. The value of unipolar concept IAT protocols is this: Many researchers acknowledge that, although IAT paradigms in general are valid and reliable measures of implicit cognition, they often provide only an ambiguous answer to the question of absolute evaluation of target concepts (Fiedler, Messner, & Bluemke, 2006). Furthermore, the choice of a counter-category against which the target object of interest is contrasted may be easy when there is a natural complement (e.g. *men* vs. *women*), but in many cases there is no such natural complement (e.g., *condom* vs. *tree*), and so the choice of counter-category becomes highly subjective (Karpinski, 2004).

By abandoning one of the target categories and keeping the attribute categories, Wigboldus, Holland, and van Knippenberg (2004) derived a single-target IAT variant. In its application, the researchers assessed the association of the category *Islamic* with positively and negatively

valenced items without applying a counter-category (e.g., *Christian*). Generally, their ST-IAT proceeded with the following three steps: In the first block, words were presented on a screen that had to be sorted as either positive words or negative words. Block two was a discrimination block of the evaluative stimuli (Islam). In this block, participants pressed one key for positive words and for the attitude object (Islam) and the other key for the general negative words. In the third step, block 3, the keys for positive words and negative words were reversed and participants were again required to measure the evaluative stimuli (Islam) using the reversed keys.

A single target category IAT protocol could be useful when studying implicit attitudes toward condom choice. In such a study, an IAT protocol would be created to measure the valence and *D* scores of single condom brands (e.g., *Trust, Durex, Trojan, Lovers Plus, Choice*). The single target category IAT would thus measure, for instance, the association of the target *Durex* with positive and negative valence, without applying a counter category. The basic benefit of this type of IAT is that it gives a single valence score for the particular target being measured (i.e., it allows one to answer the question of whether, for example, a particular brand of condom is more readily associated with positive or negative qualities).

Other directions for future research

Future research in the domain of condom use, choice, and preference would benefit from adding a behavioural component of choice to the design. For instance, after completing explicit and implicit measures of condom choice, the researcher might present the participant with a range of different condoms (both brand-name and generic) and ask him/her to take several. Such a behavioural component would add a more tangible observable behaviour to the study; it might add to data about the divergence between explicit and implicit attitudes, and could serve as a closer proxy for actual condom preference in the sexually arousing situation.

Finally, future research should also aim at obtaining a larger sample size, and to expand its pool of participants to include a diverse population of participants such as commercial sex workers. Commercial sex workers are a population at great risk for contracting and spreading HIV/AIDS and other STDs; conducting research with this group would allow one to address interesting

questions about, and understand complex issues surrounding, condom use and condom choice within the sex worker industry, and so might go some way toward limiting the spread of the virus. Even if researchers chose not to include sex workers in their samples, they should attempt to recruit diverse pools of participants from, for example, local clinics. Using the latter as study sites might allow for recruitment of individuals from a range of cultural and socioeconomic backgrounds, thus providing a larger platform from which to draw tangible conclusions about condom use, choice, and preference and to make them generalizable to the South African context.

Methodological Contributions of this Research

One major contribution of this thesis was the introduction of a new methodological approach (an experimental approach) to literature on condom use and HIV/AIDS in South Africa. As noted earlier, there are a number of limitations that accompany research relying on self-reports (e.g., from questionnaires or surveys), and these limitations are made manifest quite markedly in the domain of sex research (Eggleston, Leitch, & Jackson, 2000). Because sex research is often a controversial and stigmatized topic, the participating individual may be reluctant to share intimate data such as that surrounding condom choice and condom use. With the introduction of a measure such as the IAT, this research thesis was able to test a domain and to address a question not previously examined in the South African context.

Moreover, the findings of the current thesis further demonstrate the IAT's potential for advancing research concerning brand relationships and the degree to which brands (and in this case, condom brands) are a part of consumers' self-concept. The thesis highlights that implicit preferences might prove to be valuable predictors of behaviour that occurs in many different situations where consumers tend to rely on self-extension and situational cues.

Finally, the thesis also adds to the literature by emphasizing that situational dimensions should not be ignored in research on HIV/AIDS. The study stressed that research on condom use and condom choice ought to be approached from a person-by-situation perspective (i.e., it showed that decision-making surrounding condom choice is invariably made (a) in a context where at least two people are present, and (b) in a situation that is defined along the continuum of sexual

scenarios from 'casual relationship' to 'exclusive relationship'; the characteristics of the context, and the characteristics of the interpersonal and environmental dynamics, thus clearly influence decisions about condom use, choice, and preference).

Policy Recommendations Derived from the Current Research

This is a South African study, featuring participants whose concerns cannot be divorced from the societal and cultural contexts in which they live. Therefore, it is important that findings from the study are made relevant to the South African context, and that they can make recommendations (however small these may be) about public health policy in this country. As noted earlier, although government and non-governmental agencies in this country have introduced a successful social marketing campaign of condoms (Shisana et al., 2005), HIV/AIDS infection rates have not declined appreciably (Johnson et al., 2005). Although condoms are being freely distributed, and although HIV/AIDS education programs are now widespread, it is a distinct possibility that people continue to not use condoms. People in our casual sexual relationship group did not associate themselves with either brand-name or generic condoms. A policy recommendation would be to make government condoms take on a more high-quality and "classier" characteristics, so that more people would use them and there would be a stronger preference for use of such condoms.

Conclusion

Sexual behaviour research is a complex field that is intricately related to the fight against HIV/AIDS and other sexually transmitted diseases. By studying implicit and explicit attitudes towards condom choice, we continue to aspire to an understanding of the different phenomena that accompany sexual behaviour. Furthermore, a thorough investigation into the contextual and situational variables that accompany sexual activity can further lead researchers into redressing the many calamities that our country has endured as a direct result of the HIV/AIDS pandemic.

REFERENCES

- Aaker, J. L. (1997). Dimensions of brand personality. *Journal of Marketing Research*, 34, 347-357.
- Aaker, J. L. (1999). The malleable self: the role of self expression in persuasion. *Journal of Marketing Research*, 36, 45 -57.
- Aaker, J. L & Sengupta, J. (2000). Addictivity versus attenuation: the role of culture in the resolution of information incongruity. *Journal of Consumer Psychology*, 9, 67-82.
- Abdool-Karim, Q., Preston-White, E., Abdool-Karim, S. S. (1992). Teenage seeking condoms at family planning services: a user's perspective. *South African Medical Journal*, 82, 356-359.
- Adetinji, J., & Meekers, D. (2001). Consistency in condom use in the context of AIDS in Zimbabwe. *Journal of Biosocial Science*, 33, 121-138.
- Ajzen, I., & Fishbein, M. (1977). Attitudes- behaviour relations: A theoretical analysis and review of empirical research. *Psychological Bulletin*, 84, 888-918.
- Ajzen, I. (1991). The theory of planned behaviour. *Organisational Behaviour and Human Decision Process*, 50, 179-211.
- Ali, M., Cleland, J., & Sha, I. (2004). Condom use within marriage. A neglected HIV intervention. *Bulletin of World Health*, 82, 180-186.
- Ariely, D., & Loewenstein, G. (2006). The heat of the moment: the effect of sexual Arousal on sexual decision making. *Journal of Behavioural Decision Making*, 19, 87-98.
- Arkes, H. R., & Tetlock, P. E. (2004). Attributions of implicit prejudice or would Jesse Jackson "fail" the implicit associations test? *Psychological Inquiry*, 15, 278-279.
- Baker, M. (2000). *The Marketing Book* (4th Edition). Oxford: Butterworth-Heinemann.
- Ball, S. A., & Schottenfeld, R. S. (1997). A five factor model of personality and addiction, psychiatric, and AIDS severity in pregnant and postpartum cocaine misusers. *Substance Use and Misuse*, 32, 25-41.

- Banse, R., Seise, J., & Zerbes, N. (2001). Implicit attitudes towards homosexuality: Reliability, validity and controllability of the IAT. *Zeitschrift fur Experimentelle Psychologie*, 48, 145-160.
- Baumeister, R. F. (1982). A Self-presentational view of social phenomena. *Psychological Bulletin*, 91, 3-26.
- Bargh, J. A., Chen, M., & Burrows, L. (1996). Automaticity of social behaviour: direct effects of trait construct and stereotype activation on action. *Journal of Personality and Social Psychology*, 71, 230-44.
- Batra, R., & Homer, P. M. (2004). The situational impact of brand image beliefs. *Journal of Consumer Psychology*, 14, 318-330.
- Bearden, W. O., & Etzel, M. J. (1982). Reference group influence on product and brand purchase decisions. *Journal of Consumer Research*, 9, 183-194.
- Belk, R. W. (1975). Situational variables and consumer behaviour. *Journal of Consumer Research*, 2, 157-164.
- Belk, R. W. (1988). Possessions and the extended self. *Journal of Consumer Research*, 15, 139-168.
- Bickel, W. K., Amy, L., Odum, A. L., Madden, G. J. (1999). Impulsivity and cigarette smoking: delay discounting in current, never, and ex-smokers *Psychopharmacology*, 146: 447-454.
- Bjork, J. M., Hommer, D. W., Grant, S. J., & Danube, C. (2004). Impulsivity in abstinent alcohol dependent patients: relation to control subjects and type 1-/type 2-like traits. *Alcohol*, 34, 133-150.
- Boer, H., & Mashamba, M. T. (2007). Gender power imbalance and differential psychosocial correlates of intended condom use among male and female adolescents from Venda South Africa. *The Journal of British Psychological Society*, 12, 51-63.
- Bouffard, J. A. (2002). The influence of emotion on rationale decision making in sexual aggression. *Journal of Criminal Justice*, 30, 121-134.
- Brauer, M., Wasel, W., & Niedenthal, P. (2000). Implicit and explicit components of prejudice. *Review of General Psychology*, 4, 79-101.

- Brunel, F. T., Greenwald, A.G., & Tietje, B. C. (2004). Is the implicit association test a valid and valuable measure of implicit consumer social cognition? *Journal of Consumer Psychology, 14*, 385-404.
- Campbell, D. T., & Fiske, D. W. (1959). Convergent and discriminant validation by the multitrait-multimodal matrix. *Psychological Bulletin, 56*, 81-105.
- Centre for AIDS Development Research, Research and Evaluation (CADRE) (2004). *Communicating AIDS Needs Project*. Cape Town: Author.
- Carroll, J. L., Volk, K. D., & Hyde, J. S. (1985). Differences between males and females in motives for engaging in sexual intercourse. *Archives of Sexual Behaviour, 14*, 131-139.
- Catania, J. A., Kegeles, S. M. & Coates, T. J. (1990). Towards an understanding of risk behaviour: An AIDS risk reduction model (ARRM). *Health Education Quarterly, 17*, 83-72.
- Chara, P. J., & Kuennen, L. M. (1994). Diverging gender attitudes regarding casual sex: A cross-sectional study. *Psychological Reports, 74*, 57-58.
- Cherian, L. (2004, July). *Influence of culture and religion in HIV/AIDS education in South Africa*. Presented at the International Conference of AIDS, Bangkok, Thailand.
- Civic, D. (2000). College student's reasons for nonuse of condoms within dating relationships. *Journal of Sex & Marital Therapy, 26*, 95-105.
- Cliff, S. M., Wilkins, J. C., & Davidson, E. A. F. (1993). Impulsiveness, venturesomeness, and sexual risk taking among heterosexual GUM clinic attenders. *Personality and Individual Differences, 15*, 403-410.
- Cohen, J. (1977). *Statistical power analysis for the behavioural sciences*. Academic Press: New York.
- Cunningham, W. A., Nezlek, J. B., & Banaji, M.R. (2004). Implicit and explicit ethnocentrism: Revisiting the ideologies of prejudice. *Personality and Social Psychology Bulletin, 30*, 1332-1346.
- Cunningham, W. A., Preacher, K. J., & Banaji, M. R. (2001). Implicit attitude measures: Consistency, stability and convergence validity. *Psychological Science, 12*, 163-170.

- Czopp, A. M., Lynam, D. R., Monteith, M. J., & Zimmerman, R. S. (2004). Implicit attitudes as potential protection from risky sex: Predicting condom use with the IAT. *Basic and Applied Social Psychology, 26*, 227-236.
- Dariotis, J. K., Pleck, J. H., Sonenstein, F. L., Astone, N. M., & Safikis, F. (2009). What are the consequences of relying upon self report of sexually Transmitted Diseases? Lessons learnt about recanting in a longitudinal study. *Journal of Adolescent Health, 45*, 187-192.
- Dasgupta, N., McGee, D. E., Greenwald, A. G., & Banaji, M. R. (2000). Automatic preference for white Americans: Eliminating the familiarity explanation. *Journal of Experimental Social Psychology, 36*, 316-328.
- Dasgupta, N., Greenwald, A. G., & Banaji, M. R. (2003). The first ontological challenge to the IAT: attitude or mere familiarity. *Psychological Inquiry, 14*, 238-243.
- Dickson, P.R. (1982). Person situation: segmentation's missing link. *Journal of Marketing, 6*, 56-64.
- Digman, J. M. (1990). Personality structure: Emergence of the five factor model. *Annual Review of Psychology, 41*, 417-440.
- Dolich, I. J. (1969). Congruence relationships between self images and product brands. *Journal of Marketing Research, 6*, 80-84.
- Eggleston, E., Leitch, J., & Jackson, J. (2000). Consistency of self-reports of sexual activity among young adolescents in Jamaica. *Family Planning and Perspective 26*, 79-83.
- Elliott, R. (1997). Existential consumption and irrational desire. *European Journal of Marketing, 31*, 285-296.
- Epstein, H. (2007). *The Invisible cure: African the West and the fight against AIDS*. New York, Farrar, Strauss and Giroux.
- Erickson, M. K. (1996). Using self congruence and ideal congruence to predict purchase intention: a European perspective. *Journal of Euro-Marketing, 13*, 41-56.
- Fazio, R. H., & Dutton, B. C. (1997). Categorization by race: The impact of automatic and controlled components of racial prejudice. *Journal of Experimental Social Psychology, 33*, 451-470.

- Fazio, R. H., & Olson, M. A. (2003). Implicit measures in social cognition: Their meaning and use. *Annual Review of Psychology, 54*, 297-327.
- Fennis, B. M., & Pruyn, A. H. (2006). You are what you wear. Brand personality influences on consumer impression formation. *Journal of Business Research, 60*, 634-639.
- Fennis, B. M., Pruyn, A. H. & Maasland, M. (2005). Revisiting the malleable self: brand effects on consumer self- perceptions of personality traits. *Advances in Consumer Research, 32*, 371-377.
- Fiedler, K., Messner, C., & Bluemke, M. (2006). Unresolved problems with the "I" and the "A" and the "T": Logical and psychometric critique of the Implicit Associations Test (IAT). *European Review of Social Psychology, 17*, 74-147.
- Fishbein, M., & Ajzen, I. (1975). *Belief, attitude, intention, and behaviour: An introduction to theory and research*. Reading, MA: Addison-Wesley.
- Fisher, W. A., & Byrne, D. (1978). Sex differences in response to erotica? Love versus lust. *Journal of Personality and Social Psychology, 36*, 117-125.
- Foss, A. M., Louir, H., Walts, H. C., & Watts, B. (2004). Condoms and prevention of HIV. *British Medical Journal, 329*, 185-186.
- Fournier, S. (1998) Consumers and their brands: Developing relationship theory in consumer research. *Journal of Consumer Research, 4*, 343- 373.
- Foxall, G. R. (2005). Situational influences on consumers' attitudes and behaviour. *Journal of Business Research. 58*, 518 - 525.
- Friese, M., Wanke, M., & Plessner, H. (2006). Implicit consumer preference and their influence on product choice. *Psychology & Marketing, 23*, 727-740.
- Gabriel, S., Jellison, W. A., & McConnell, A. R. (2004). Implicit and explicit measures of sexual orientation attitudes: In group preferences and related behaviours and beliefs among gay and straight men. *Personality and Social Psychology Bulletin, 30*, 629-642.

- Gawronski, B. (2001). What does the implicit associations test measure? A test of the convergent and discriminant validity of prejudice related IAT. *Experimental Psychology*, 49, 171-180.
- Ginner-Sorrolla, R., Garcia, M. T. & Bargh, J. A. (1999). The automatic evaluation of pictures. *Social Cognition*, 17, 76-96.
- Goven, L. A., & Williams, K. (2004). Changing the affective valence of the stimuli items influences the IAT by redefining the category labels. *Journal of Experimental Social Psychology*, 40, 357-365.
- Graeff, T. R. (1996). Using promotional messages to manage the effects of brand and self-image evaluation. *Journal of consumer marketing*, 13, 4-18.
- Graeff, T. R. (1997). Consumption situations and the effects of brand image on consumers' brand evaluations, *Psychology & Marketing*, 14, 49-70.
- Greenwald, A. G., & Banaji, M. R. (1995). Implicit social cognition: Attitudes, self-esteem, and stereotypes. *Psychological Review*, 102, 4-27.
- Greenwald, A. G., Banaji, M. R., Rudman, L. A., Farnham, S. D., Nosek, B. A., & Mellott, D. S. (2002). A unified theory of implicit attitudes, stereotypes, self-esteem, and self-concept. *Psychological Review*, 109, 3-25.
- Greenwald, A. G., McGee, D. E., & Swartz, J. L. K. (1998). Measuring individual differences in implicit cognition: The Implicit Association Test. *Journal of Personality and Social Psychology*, 74, 1464-1480.
- Greenwald, A. G., & Farnham, S. D. (2000). Using the implicit associations test to measure self-esteem and self-concept. *Psychological Review*, 109, 3-25.
- Greenwald, A. G., & Nosek, B. A. (2003). Health of the implicit associations test at age 3. *Zeitschrift fur Experimentelle Psychologie*, 48, 85-93.
- Greenwald, A. G., Nosek, B. A., & Banaji, M. R. (2003). Understanding and using the implicit associations test: An improved scoring algorithm. *Journal of Personality and Social Psychology*, 85, 197-21.

- Greenwald, A. G., Rudman, L. A., & McGhee, D. E. (2001). Implicit self-concept and evaluative implicit gender stereotypes: Self and in-group share desirable traits. *Personality and Social Psychology Bulletin*, 27, 1164-1178.
- Grubb, E. L., & Grathwohl, H. L. (1967). Consumer self concept, symbolism and market behaviour. A theoretical approach. *Journal of Marketing*, 31, 22-27.
- Hallman, K. (2005). Gendered socioeconomic conditions and HIV risk behaviours among young people in South Africa. *African Journal of AIDS Research*, 4, 37-50.
- Halperin, D. T., & Epstein, H. (2007). Why is HIV prevalence so severe in Southern Africa? The role of multiple concurrent partnerships and lack of male circumcision: implications for AIDS prevention. *The Southern African Journal of HIV Medicine*, 26, 19-25.
- Hamel, G., & Prahalad, C. (1994). *Competing for the future*. Harvard Business School Press: Boston.
- Hawkins, D., Best, D., & Coney, K. A. (1998). *Consumer Behaviour: Building Marketing Strategy*. (7th Ed.). New York: McGraw Hill.
- Heath, A. P., & Scott, D. (1998). The self-concept and image congruence hypothesis. An experimental evaluation in motor vehicle market. *European Journal of Marketing*, 32, 1110-1123.
- Hetts, J. J., Sakuma, M & Pelham, B. W. (1999). Two roads to positive regard: Implicit and explicit self- evaluative information in memory. *Cognition and Emotion*, 8, 515-533.
- Hoffman, W., Gawronski, B., Gschwendner, T., Le H., Schmitt, M. (2005). A meta analysis or the correlation between the implicit associations test and self explicit measures. *Personality and Social Psychology Bulletin*, 31, 1369-1385.
- Holt, D. B. (1995). How consumers consume: a typology of consumption practices. *Journal of Consumer Research*, 22, 1-16.
- Horvart, P., & Zuckermann, M. (1993). Sensational seeking and risk appraisal and risky behaviour. *Personality and Individual Differences*, 14, 41-52.
- Hosseini, H. (2003). The arrival of behavioural economics: from Michigan, or the Carnegie School in the 1950 and the early 1960? *Journal of Socio-Economics*, 32, 391-409.

- Human Science Research Council (HSRC) (2008). *Overall campus HIV rate lower than in communities*. Cape Town, Author
- Jacobson, E., & Kossoff, J. (1963). Self-perception and consumer attitudes towards small cars. *Journal of Applied Psychology*, 47, 242-245.
- Jamal, A. (2004). Retail banking and customer behaviour. A study of self concept satisfaction and technology usage. *The International Review of Retail, Distribution and Consumer Research*, 14, 357-379.
- Jamal, A. & Goode, M. (2001). Consumers and brands: a study of the impact of self image congruence on brand preference and satisfaction. *Marketing Intelligence and Planning*, 19, 482-492.
- Joint United Nations Programme of HIV/AIDS. (2006, May). *Report on the global AIDS epidemic*. Geneva, Switzerland: Author.
- Johnson-Laird P. N. (1983). *Mental Models*. Cambridge: Cambridge University Press.
- Johnson, L. F., Coetzee, D. J & Dorrington, R. E. (2005). Sentinel surveillance of sexually transmitted infections in South Africa: a review. *Sexually Transmitted Infections*, 81, 287-293.
- Kahnemann, D., & Tversky, A. (1979). Prospect theory: an analysis of decision making under risk. *Econometrica*, 47, 261-291.
- Kalichman, S. C., & Rompa, D. (1995). Sexual sensation seeking and sexual compulsivity scales: Reliability, validity and predicting HIV risk behaviour. *Journal of Personality Assessment*, 62, 385-397.
- Karpinski, A. (2004). Measuring self esteem using the implicit associations test: the role of the other. *Personality and Social Psychology Bulletin*, 30, 122-134.
- Kassarjian, H. H. (1971). Personality and consumer behaviour: a review. *Journal of Marketing Research*, 8, 409-418.
- Katz, E. C., Fromme, K., & D'Amico, E. J. (2000). Effects of outcome expectations and personality on young adult's illicit drug use heavy drinking and risky sexual behaviour. *Cognitive Therapy Research*, 24, 149-164.

- Katona, G. (1980). *Essays on behavioural economics*. The University of Michigan Survey Research Centre, Institute for Social Research.
- Kotler, P. (1994), *Marketing Management: Analysis, Planning, Implementation and Control*, NJ: Prentice-Hall Inc.
- Koole, S L., Dijksterhuis, A, Van Knippenberg, A. (2001). What's in a name: implicit self esteem and the automatic self. *Journal of Personality & Social Psychology*, 80, 669-685.
- Kotler, P., Armstrong, G., Saunders, J., Wong, V. (1996), *Principles of Marketing*, The European Edition, Hempstead: Prentice-Hall Inc.
- Kuenzel, J. & Musters, P. (2007). Social interaction and low involvement products. *Journal of Business Research*, 60, 876-883.
- Kunda, Z. (1999). *Social Cognition: making sense of people*. Cambridge: MIT Press.
- Labus, J. S., Keefe, F. J., & Jensen, M. P. (2003). Self-reports of pain intensity and direct observations of pain behaviour: when are they correlated? *Pain*, 102, 109–124.
- Lam, D, et al. (2008). *The Cape Area Panel Study: A very short introduction to the Integrated Waves 1-2-3-4 Data*. The University of Cape Town.
- Leigh, B. C. (1999). Peril, chance, adventure: concepts of risk, alcohol use and risky behaviour in young adults. *Addiction*, 94, 371-383.
- Levy, S. J. (1959). Symbols for sale. *Harvard Business Review*, 37, 117-124.
- Levy, S. J. (1981). Interpreting consumer mythology. A structural approach to consumer behaviour. *Journal of Marketing*, 45, 49-61.
- Levy, S. J. (1986). Meanings in advertising stimuli. In J. Olson & K. Sentis (Ed), *Advertising and consumer psychology*. Westport, CT: Praeger.
- Loewenstein, G., Nagin, D., & Paternoster, R. (1997). The effects of sexual arousal on expectations or sexual forcefulness. *Journal of Research in Crime and Delinquency*, 34, 443-447.
- Loewenstein, G. (2001). The creative destruction of decision research. *Journal of Consumer Research*, 28, 499-505.

- Loewenstein, G., & Camerer, C. F. (2002). *Behavioural Economics: Past, Present, Future*. Working Paper, Carnegie, Mellon University.
- Loewenstein, G., & Prelec, D. (1992). Anomalies in intertemporal choice: evidence and an interpretation. *The Quarterly Journal of Economics* 107, 573–597.
- Maison, D., Greenwald, A.G., & Bruin, R. (2004). Predictive validity of the Implicit Associations Test in studies of brands, consumer's attitudes, and behaviour. *Journal of Consumer Psychology*, 14, 405-415.
- Macrae, C. N. & Bodenhausen, G. V. (2000). Social cognition: categorical person perception. *British Journal of Psychology*, 92, 239-255.
- Maharaj, P., & Cleland, P. (2006). Condoms became the norm in the sexual culture of college students in Durban, South Africa. *Reproductive Health Matters*, 14, 104-112.
- Mangerah, M. (2008). Hidden victims of HIV/AIDS: The impact of caregiving on elderly caregivers. Unpublished Master's thesis (Clinical Psychology), University of Cape Town.
- Markey, P. M., & Markey, C. N. (2007) Romantic ideals, romantic obtainment and relationship experiences: *The Journal of Social and Personal relationships*, 24, 517-534.
- Marseille, E., Kahn, J. G., Bellinghurst, K., & Saba, J. (2001). Cost effectiveness of the female condom in preventing HIV/STDs in commercial sex workers in rural South Africa. *Social Science and Medicine*, 52, 134-148.
- Marsh, K. L., Johnson, B. T., & Scott Sheldon, A. J. (2001). Heart versus reason in condom use: Implicit versus explicit attitudinal predictors of sexual behaviour. *Zeitschrift für Experimentelle Psychologie*, 48, 161-175.
- McCracken, G. (1986). Culture and consumption: A theoretical account of the structure and movement of the cultural meaning of consumer goods. *Journal of Consumer Research*, 13, 71–84.
- Mehta, A. (1999). Using self-concept to assess advertising effectiveness. *Journal of Advertising Research*, 39, 81-89.
- Merten, D. E. (1996). Going-with: the role of a social form in early romance. *Journal of Contemporary Ethnography*, 24, 462-84.

- Mitchell, A. A., & Dacin, P. A. (1996). The assessment of alternative measures of consumer expertise. *Journal of Consumer Research*, 23, 219-239.
- Mulwo, A. K., Tomasselli, K. G. & Dalrymple, L. (2009). Condom brands, perceptions of condom efficacy and HIV prevention among university students in KwaZulu-Natal, South Africa. *African Journal of AIDS Research*, 8, 311-320.
- Munson, J. M., & Spivey, W. A. (1981). Product and brand-user stereotypes among social classes. *Journal of Advertising Research*, 21, 37-46.
- Museveni, Y. (1997). "AIDS: a socioeconomic disease". *The Pan -Africanist*, 1, 39-41.
- Muth, J. F. (1961). Rational expectations and the theory of price movements, *Econometrica*, 29, 315-335.
- Netting, N. S. (1992). Sexuality in youth culture: Identity and change. *Adolescence*, 27, 961-976.
- Nosek, B. A., & Banaji, M. R. (2001). The Go/No-Go Association Task. *Social Cognition*, 19, 625-664.
- Nosek, B. A., Banaji, M. R., & Greenwald, A. G. (2002). Harvesting implicit group attitudes and beliefs from a demonstrations website. *Group Dynamics*, 6, 101-115.
- Nosek, B. A., Greenwald, A. G., & Banaji, M. R. (2005). Understanding and using the implicit associations test II. Methods variables and construct validity *Personality & Social Psychology, Bulletin*, 31, 166-180.
- Nosek, B. A., Greenwald, A. G., & Banaji, M. R. (2007). The Implicit associations test at age 7: a methodological and conceptual review (pp. 265-292). In J.A Bargh, (Ed.), *Automatic Processes in social thinking and behaviour*. Psychology Press.
- Nosek, B. A., & Smyth, F. L. (2007). A multitrait- multimethod validation of the implicit associations test: implicit and explicit attitudes are related but distinct constructs. *Experimental Psychology*, 54, 14-29.
- Olson, M.A., & Fazio, R. H. (2004). Reducing the influence of extrapersonal associations in the implicit associations test: personalising the IAT. *Journal of Personality & Social Psychology*, 86, 653-667.

- Ottaway, S. A., Hayden, D. C., & Oakes, M. A. (2001). Implicit attitudes and racism: Effects of word familiarity and frequency on the implicit associations test. *Social Cognition, 19*, 97-144.
- Parker, W., Nkosi, Z, Birdsall, K. & Hajiyanis, H. (2004). *Breaking the barriers: an analysis of condom- related calls to the National AIDS Helpline*. Johannesburg, South Africa, Centre for AIDS Development, Research and Evaluation (CADRE).
- Parker, W., Makhubele, B., Ntabalati, P. & Connolly, C. (2007). *Concurrent Sexual Partnerships amongst young adults in South Africa: Challenges for HIV Prevention Communication*. Johannesburg, South Africa., Centre for AIDS Development and Evaluation (CADRE).
- Penke, L., Eichstaedt, J., & Asendorpf, J. B (2006). Single attribute implicit associations test (SA-IAT) for the assessment of unipolar constructs. The case of sociosexuality. *Experimental Psychology, 53*, 282- 291.
- Peplau, L. A., Rubin, Z., & Hill, C. T. (1977). Sexual intimacy in dating couples. *Journal of Social Science, 33*, 89-109.
- Perugini, M. (2005). Predictive models of implicit and explicit attitudes. *British Journal of Social Psychology, 44*, 29-45.
- Petry, N. M. (2001). Pathological gamblers, with and without substance use disorders, discount delayed rewards at high rates. *Journal of Abnormal Psychology, 3*, 482-487.
- Phelps, E. A., O' Connor, K. J., Cunningham, W. A., Funayama, E. S., Gatenby, J. C., Gore, J. C., & Banaji, M. R.(2000). Performance on indirect measure of face evaluation predicts amygdale activation. *Journal of Cognitive Neuroscience, 12*, 729-738.
- Quester, P. G, & Smart, J. (1998). The influence of consumption situations and product involvement over consumers' use of product attribute. *Journal of Consumer Marketing 15*, 220-238.
- Quinn, K. A., Macrae, C. N., & Bodenhausen, G. V. (2003). Stereotyping and impression formation. In M. Hogg & J. Cooper (Eds.). *Sage handbook of social psychology*. Thousand Oaks, CA: Sage.

- Regan, P. C., Dreyer, C. S. (1999). Lust? Love? Status? *Journal of Psychology and Human Sexuality, 11*, 1-24.
- Richeson, J. A., Baird, A. A., Gordon, H. L., Heatherton, T. F., Wylard, C. L., Trawalter, S., & Shelton, J. N. (2003). An fMRI investigation of the impact of interracial contact on executive functioning. *Nature Neuroscience, 16*, 1323-1328.
- Rickert, V., Joy, M. S., Gottlieb, A., & Bridge, C. (1989). Adolescents and AIDS: Females' attitudes and behaviour towards condom purchase and use. *Journal of Adolescent Health Care, 103*, 13-316.
- Rogers, C. R. (1965). *Client centred therapy*. Boston: Houghton Millan Company.
- Rogers, R. W. (1975). A protection motivation theory of fear appeals and attitude change. *Journal of Psychology, 91*, 93-114.
- Rosnow, R. L., & Georgoudi, M. (1986). Contextualism and understanding in behavioural science. New York: Praeger.
- Ross, I. (1971). Self-concept and brand preference. *Journal of Business, 44*, 38-50.
- Savage, L. J. (1954). *The foundations of statistics*. New York: Wiley.
- Scandell, D. J., Klinkenberg, W. D., Hawkes, M. C., & Spriggs, L. S. (2003). The assessment of high-risk sexual behaviour and self-presentation concerns. *Research on Social Work Practise, 13*, 119-141.
- Schultz, S. E. Kleine, R. E., & Kernan, J. B. (1989). These are a few of my favourite things. Towards an explication of attachment as consumer behaviour construct. *Advances in Consumer Research, 16*, 359-366.
- Selart, M., Karlsson, N., & Garling, T. (1997). Self-control and loss aversion in intertemporal choice. *The Journal of Socioeconomics, 26*, 513-524.
- Shisana, O., Bhana, A., Connolly, C., Jooste, S., Parker, K., & Rehle, T. et al. (2005). *South African National HIV Prevalence, HIV Incidence, Behaviour and Communication Survey*. Cape Town: Human Sciences Research Council.
- Sirgy, M. J. (1982). Self Concept in consumer behaviour: a critical review. *The Journal of Consumer Research, 9*, 287-300.

- Steinberg, M., Johnson, S., Schierhout, G., Ndegwa, G., Hall, K., Russell, B., et al. (2001). *Hitting home: How households cope with the impact of the HIV/AIDS epidemic: A survey of households affected by HIV/AIDS in South Africa*. Washington, DC: Henry J Kaiser Family Foundation and Health Systems Trust.
- Steinmann, R. B., & Karpinski, A. (2008). The single category implicit associations test (SC-IAT) as a measure of implicit consumer Attitudes. *European Journal of Social Science*, 7, 32-42.
- Swanson, J. E., Rudman, L. A., & Greenwald, A. G. (2001). Using the implicit associations test to investigate attitude behaviour consistent for stigmatized behaviour. *Cognition and Emotion*, 15, 207-230.
- Teachman, B., Gregg, A., & Woody, S. (2001). Implicit attitudes towards fear-relevant stimuli in individuals with snake and spider fears. *Journal of Abnormal Psychology*, 110, 100-109.
- Tesser, A. (2000). On the confluence of self esteem maintenance mechanism. *Personality and Social Psychology Review*, 4, 290-299.
- Tillotson, J., & Maharaj, P. (2001). Barriers to HIV/AIDS protective behaviour among African males in township secondary schools in Durban, South Africa. *Society in Transition*, 32, 83-100.
- Tucker, W. T. (1967). *Foundations for the theory of consumer behaviour*. New York: Holt, Rinehart & Winston.
- Van Rossem, R., & Meekers, D. (2001). Consistent condom use with different type of partners: evidence from two Nigerian surveys. *AIDS Education and Prevention*, 13, 252-267.
- Varga, C. A. (1997). Sexual decision-making and negotiation in the midst of AIDS: youth in KwaZulu-Natal, South Africa. *Health Transition Review*, 7, 45-67.
- Von Neumann, J., & Morgenstern, O. (1944). *Theory of Games and Economic Behaviour*. Princeton University Press.
- Walker, S. S., Schimmack, U. (2008). Validity of a happiness implicit associations test: a measure of subjective wellbeing. *Journal of Research and Personality*, 42, 490-497.

- Westera, D. A., & Bennett, L. R. (1994). Population-focused research: A broad-based survey of teens' attitudes, beliefs, and behaviours. *International Journal of Nursing Studies*, 31, 521-531.
- Wicklund, R. A., & Gollwitzer, P. M. (1982). *Symbolic self completion*. NJ: Lawrence Erlbaum.
- Wigboldus, G. H. J., Holland, R.W., & van Knippenberg, A. (2004). Manuscript Submitted for publication.
- Wood, K., & Jewkes, R. (1997). Violence, rape and sexual coercion: everyday love in a South African township. *Gender and Development* 5, 41-46.
- Wright, N. D., Claiborne, M, Sirgy, J. (1992). The effects of product symbolism on consumer self concept. *Advances in Consumer Research*, 19, 311-318.
- Zajonc, R. B. (1968). Attitudinal effects of mere exposure. *Journal of Personality and Social Psychology Monographs* 9 (2, Pt. 2).

APPENDIX A
Demographic Questionnaire

Study Title:

Effects of status of partner on attitudes towards condom choice

1. Age: _____

2. Sex (circle one): Male Female

3. What is your home language? (Please circle only *one* option)

English Afrikaans Xhosa Zulu Pedi

Other (please specify): _____

4. What is the total monthly income of the household in which you live? If you are a student please take care to put your immediate caregiver's monthly income, not your own.

(Please circle only *one* option):

R0 – R499

R500 – R999

R1000 - R2499

R2500 – R5499

R5500 – R9999

R10 000+

5. Education:

5.1. Highest degree or grade completed: _____

5.2. What year of university are you in now? _____

APPENDIX B

Relationship and Sexual History Questionnaire

1. How many different sexual partners have you had? (Please circle only *one* option)

0 1 2-5 > 5 > 10 > 20

If you circled '0' above, PLEASE STOP HERE. You do not need to complete the rest of this questionnaire.

2. Have you ever used a condom during sex?

Yes No

If you circled '0' above, PLEASE STOP HERE. You do not need to complete the rest of this questionnaire.

11. In the last 3 months, how often did you use condoms when having sex?

Never Rarely Sometimes Most of the time Always

12. In the last 3 months, how often did you use **generic (free, government-issued)** condoms?

Never Rarely Sometimes Most of the time Always

13. In the last 3 months, how often did you use **brand-name** condoms (e.g., Durex, Trojan)?

Never Rarely Sometimes Most of the time always

14. In the last 3 months, how often did you have sex *without* a condom?

Never Rarely Sometimes Most of the time always

15. Please rate the reasons why you use condoms (fill in *all* of the rows in the table below)

| | Importance | | | | |
|--------------------------------------------------------------------|------------------------------------------------|---|---|---|---|
| | (1 = not at all important, 5 = very important) | | | | |
| | 1 | 2 | 3 | 4 | 5 |
| To prevent being infected with HIV/AIDS | . | . | . | . | . |
| To prevent being infected with other sexually-transmitted diseases | . | . | . | . | . |
| Birth control | . | . | . | . | . |
| Partner prefers to use condoms | . | . | . | . | . |
| Comfort | . | . | . | . | . |

16. Please rate the reasons why you **prefer to use generic (free, government-issued) condoms** instead of any other kind of condoms. Choose as many items as you want.

| | |
|-----------------------|-----------------------------------------------------------------|
| <input type="radio"/> | I don't prefer to use generic (free, government-issued) condoms |
| <input type="radio"/> | Brand-name condoms are too expensive |
| <input type="radio"/> | Generic condoms are easily available and accessible |
| <input type="radio"/> | Generic condoms are safer and more reliable |
| <input type="radio"/> | Generic condoms are more comfortable |
| <input type="radio"/> | My partner prefers generic condoms |

17. Please rate the reasons why you **prefer to use brand-name condoms** instead of any other kind of condoms. Choose as many items as you want.

| | |
|-----------------------|------------------------------------------------------------|
| <input type="radio"/> | I don't prefer to use brand-name condoms |
| <input type="radio"/> | Using brand-name condoms shows I want to please my partner |
| <input type="radio"/> | Using brand-name condoms shows I am a successful person |
| <input type="radio"/> | Brand-name condoms are safer and more reliable |
| <input type="radio"/> | Brand-name condoms are more comfortable |
| <input type="radio"/> | My partner prefers brand-name condoms |

APPENDIX C

Attitude Towards Condom Scale

The following items are intended to measure people's opinions about the use of condoms. There are no right and wrong responses to any of the statements. Please respond to the statements even if you are not sexually active or have never used (or had a partner who used) condoms. In such cases indicate how think you would feel in such a situation.

Please read each of the following statements and indicate the response that best fits your feeling about the statement.

For example, if you agree with a certain statement, put an 'X' under 'A' on the answer sheet. If you strongly disagree, put an 'X' under 'SD', and so forth.

SD = Strongly disagree; D = Disagree; U = Undecided; A = Agree; SA = Strongly Agree

| Statement | Response | | | | |
|---------------------------------------------------------------------------------------------------------------------------|----------|---|---|---|----|
| | SD | D | U | A | SA |
| 1. In my opinion, condoms are too much trouble. | | | | | |
| 2. Condoms are unreliable. | | | | | |
| 3. Condoms are pleasant to use. | | | | | |
| 4. The neatness of condoms, for example, no wet spot on the bed, makes them attractive. | | | | | |
| 5. I see the use of condoms as adding to the excitement of foreplay if the female partner helps the male put it in place. | | | | | |
| 6. I would be willing to try a condom even if I have never used one before. | | | | | |
| 7. There is no reason why a woman should be embarrassed to suggest a condom. | | | | | |
| 8. Women think that men who use condoms show concern and are caring. | | | | | |
| 9. I intend to try condoms. | | | | | |
| 10. I think proper use of condoms can enhance sexual pleasure. | | | | | |
| 11. Many people make use of condoms as an erotic part of foreplay. | | | | | |
| 12. All things considered, condoms seem safer to me than any other contraceptive except abstinence. | | | | | |
| 13. I just don't like the idea of using a condom. | | | | | |
| 14. I think condoms look ridiculous. | | | | | |

| | | | | | |
|------------------------------------------------------------------------------------------------------|--|--|--|--|--|
| 15. Condoms are inconvenient. | | | | | |
| 16. I see no reason to be embarrassed by the use of condoms. | | | | | |
| 17. Putting a condom on an erect penis can be a real turn on. | | | | | |
| 18. Condoms are uncomfortable. | | | | | |
| 19. Using a condom makes sex unenjoyable. | | | | | |
| 20. I would avoid using condoms if at all possible. | | | | | |
| 21. I would be comfortable suggesting that my partner and I use a condom. | | | | | |
| 22. Condoms ruin the sex act. | | | | | |
| 23. Condoms are uncomfortable for both partners. | | | | | |
| 24. Women think that men who use condoms are jerks. | | | | | |
| 25. The idea of using a condom doesn't appeal to me. | | | | | |
| 26. Use of a condom is an interruption to foreplay. | | | | | |
| 27. What to do with a condom after use is a real problem. | | | | | |
| 28. The thought of using a condom is disgusting. | | | | | |
| 29. Having to stop to put on a condom takes all the romance out of sex. | | | | | |
| 30. Most women don't like for their partner to use condoms. | | | | | |
| 31. I don't think condoms interfere with the enjoyment of sex. | | | | | |
| 32. There is no way that using a condom can be pleasant. | | | | | |
| 33. Using a condom requires taking time out of foreplay which interrupts the pleasure of sex. | | | | | |
| 34. I think condoms are an excellent means of contraception. | | | | | |
| 35. Condoms are unreliable. | | | | | |
| 36. There is no reason that a man should be embarrassed to suggest using a condom. | | | | | |
| 37. To most women, a man who uses a condom is sexier than one who leaves protection up to the woman. | | | | | |
| 38. The condom is a highly satisfactory contraceptive. | | | | | |
| 39. I would have no objection if my partner suggested that we use a condom. | | | | | |
| 40. The skillful woman can make placing a condom a highly erotic experience. | | | | | |

APPENDIX D

Informed Consent to Participate In Research and Authorization for Collection, Use and Disclosure of The Effects of Status Partner on Implicit and Explicit Attitudes Towards Condom Choice and Other Personal Data.

Department of Psychology, University of Cape Town.

Applied Cognitive Science and Experimental Neuropsychological Team (ASCENT)

STUDY TITLE:**Effects of status of sexual partner on implicit and explicit attitudes towards condom choice****1. Invitation and Purpose**

You are invited to take part in a research study about attitudes on condoms and condom use. I am a researcher from the Applied Cognitive Science and Experimental Neuropsychological Team (ASCENT LAB) at the Department of Psychology, University of Cape Town. Funding for this study comes from the University of Cape Town. Funding for this study comes from the University of Cape Town.

2. Procedures

If you decide to take part in this study, we will ask you to complete (a) a computer-based task, the Implicit Associations Task (IAT) and (b) a few questionnaires. The IAT will take less than 10 minutes to complete. The questions will include questions about your past and present sexual experiences. The questions in the study will take about 15 minutes and you may skip any question you do not wish to answer, we encourage you to answer all questions and to be as honest as possible.

3. Risks, Discomforts & Inconveniences

This study poses a low risk of harm to you. You will be asked a few private questions about your sexual history. All your private information gathered during the study will be kept safe by the researcher.

4. Benefits

This study will not directly benefit you. The knowledge we will gain from it, however, will be used to help improve policy for condom use and condom choice in the current era of high levels of HIV and other sexually transmitted diseases.

5. Privacy and Confidentiality

We will take strict precautions to safeguard your personal information throughout the study. Your information will be kept without your name or other personal identifiers, only a code, in a locked file cabinet.

Study data will be kept on a password-protected, secure server at the ASCENT laboratory (Room 4.17) of the University of Cape Town. Only the researchers will be able to access your personal information.

6. Money Matters

You will receive one (1) SRPP credit for completing the study.

7. Questions

If you have questions, concerns, or complaints about the study or questions about a research-related injury, please contact either Sizwe Zondo (076-478-1463; sizwezondo@yahoo.co.uk) or Dr Kevin Thomas (021-650-3435; kevin.thomas@uct.ac.za).

If you have questions about your rights as a study participant, or concerns about the research, please contact the Research Ethics Committee, Department of Psychology, University of Cape Town, Rondebosch 7701; 021-650-3430, johann.louw@uct.ac.za.

8. Use of Samples/Data for Future Research

With your permission, we would like to store the unused parts of your study samples/data for use in future research. This is your choice entirely and you are free to say no and still be able to take part in the study. Please check the boxes that apply to your choice:

I do not want my samples to be used for any future research. ____

You may use my samples for any future research about HIV and condom use ____

You may use my samples for any research about any health issues at all. ____.

Signatures

Participant's Signature _____

(Insert name of participant) _____ has been informed of the nature and purpose of the procedures described above including any risks involved in its performance. He or she has been given time to ask any questions and these questions have been answered to the best of the investigator's ability. A signed copy of this consent form will be made available to the subject.

Investigator's Signature _____ Date _____

I have been informed about this research study and understand its purpose, possible benefits, risks, and discomforts. I agree to take part in this research as a subject. I know that I am free to withdraw this consent and quit this project at any time, and that doing so will not cause me any penalty or loss of benefits that I would otherwise be entitled to enjoy.

Participant's Signature _____ Date _____

APPENDIX E
SIGN UP FORMS

Condom Attitude Study



Duration: Up to 30 min (2 units)

Location: Psych 4.17 (ACSENT Lab)

We aim to study individuals' attitudes towards condom choice (preferences) in different sexual contexts. Our study is particularly geared towards a psychological understanding of individuals' attitudes towards various condoms based on their relationship status. You will be required to fill in some questionnaires and to do a computer task.

We are recruiting people who in **EITHER**:

An **EXCLUSIVE RELATIONSHIP**: (*defined as having a single romantic partner that one has been committed to for over twelve (12) months*)

OR

A **NON-EXCLUSIVE RELATIONSHIP**: (*defined as being currently not committed to a single romantic partner*).

PLEASE ONLY WRITE ONE NAME PER ALLOCATED TIME SLOT (PER BLOCK)

EXCLUSIVE RELATIONSHIP STATUS

SIGN UP HERE!

Duration: Up to 30 min (2 units)**Location:** Psych 4.17 (ACSENT Lab)

| | | THURS 13 August | | FRIDAY 14 August |
|--|-----------------|---------------------------------|--|----------------------------------------------------|
| | 9.30- 10:00 | Name: Student no.: Email: | | 9.30- 10:00 Name: Student no.: Email: |
| | 10:00- 10:30 | Name: Student no.: Email: | | 10:00- 10:30 Name: Student no.: Email: |
| | 11:00- 11:30 | Name: Student no.: Email: | | 11:00- 11:30 Name: Student no.: Email: |
| | 12:00- 12:30 | Name: Student no.: Email: | | 12:00- 12:30 Name: Student no.: Email: |
| | 13:00- 13:30 | Name: Student no.: Email: | | 13:00- 13:30 Name: Student no.: Email: |

Note: If you sign up for this experiment, but do not show up, you will not receive your DP credits. To cancel, you must notify the experimenter (contact Sizwe Zondo; sizwezondo@yahoo.co.uk; 076 478 1463) at least 2 hours in advance.

**NON-EXCLUSIVE RELATIONSHIP STATUS
(CASUAL SEXUAL RELATIONSHIP)**

SIGN UP HERE!

Duration: Up to 30 min (2 units)

Location: Psych 4.17 (ACSENT Lab)

| | THURS 13 August | FRIDAY 14 August | |
|-----------------|---------------------------------|------------------|---------------------------------|
| 9:30- 10:00 | Name: Student no.: Email: | 9:30- 10:00 | Name: Student no.: Email: |
| 10:00- 10:30 | Name: Student no.: Email: | 10:00- 10:30 | Name: Student no.: Email: |
| 11:00- 11:30 | Name: Student no.: Email: | 11:00- 11:30 | Name: Student no.: Email: |
| 12:00- 12:30 | Name: Student no.: Email: | 12:00- 12:30 | Name: Student no.: Email: |
| 13:00- 13:30 | Name: Student no.: Email: | 13:00- 13:30 | Name: Student no.: Email: |

Note: If you sign up for this experiment, but do not show up, you will not receive your DP credits. To cancel, you must notify the experimenter (contact Sizwe Zondo; sizwezondo@yahoo.co.uk; 076 478 1463) at least 2 hours in advance.