Interaction Privacy:
A Study of Threats and Consequences

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ABSTRACT

The purpose of the dissertation is to explore interaction privacy, a person's ability to control the amount of access others have to the self during relational encounters in attempts to achieve ideal levels. According to marketing research, a positive shopping experience is becoming all the more important (Achrol and Kotler, 2012; Deighton et al., 2012), which could be enhanced with adequate levels of shopper privacy. Using reactance theory (Brehm, 1966) as guidance, the model examines privacy encroachments through visual and physical dimensions which lead to threats that cause an individual to realize control has been lost and induces reactance. The research focuses on encroachments by employees. Using two written scenario and one video scenario experiments, the dissertation tests the relationship of interaction privacy on identity threats, purchase pressure, feelings of control, basket size and abandonment in the store. Legitimacy of threat is also examined as a moderator to further explore contextual influences to the relationships associated with interaction privacy.

TABLE OF CONTENTS

CHAPTER ONE: INTRODUCTION TO RESEARCH 1
Anecdotal Evidence of Dissertation Purpose 1
Research Evidence of Dissertation Purpose 2
Research Gaps and Statement of Purpose 4
Research Questions 6
Theoretical Contributions 7
Managerial Implications 9
Overview of Conceptual Model 10
Overview of Theoretical Basis 10
Intrusions on Privacy 12
Social Identity Threat and Purchase Pressure 13
Reactance: Outcomes of Privacy Encroachment 14
Moderating Influence: Legitimacy of Threat 15
Proposed Methodological Strategy 16
Dissertation Organization 17
CHAPTER TWO: RESEARCH DEVELOPMENT AND LITERATURE REVIEW 18
Atmospheric Cues and Environmental Impact on the Shopping Experience 18
Privacy Examined 21
Definitions of Privacy 21
Functions of Privacy 28
Mechanisms of Privacy 31
Qualitative Pilot Study and Conceptual Model 35
Intrusions on Privacy 37
Outcomes of Privacy Encroachment 39
Threats and Pressure 40
Legitimacy of Threat 43
Conceptual Model 44
Literature Review 45
Theoretical Foundations 45
Reactance Theory 45
Social Identity Theory 48
Intrusions on Privacy 50
Anonymity 50
Invasion of personal space 51
Spotlight 54
Shadowing 57
Threats and Pressure 59
Social Identity Threat 59
Purchase Pressure 61
Feelings of Control 62
Reactance 64
Abandonment 64
Purchase Intentions 65
Moderator: Legitimacy of Threat 66

Research Hypotheses 67
Physical Encroachment → Categorization Threat 67
Visual Encroachment → Categorization Threat 69
Visual Encroachment → Acceptance Threat 69
Interaction → Threat 70
Threat → Purchase Pressure 71
Threats as Mediators 72
Moderator: Legitimacy of Threat 72
Purchase Pressure → Control 74
Feelings of Control → Reactance Outcomes 74
Chapter Summary 75
CHAPTER 3: METHODOLOGY 78
Introduction 78
Quantitative Research Overview 78
Experimental Design 78
Scale Design 79
Regression and ANCOVA Analysis 79
Measurement Reliability and Validity 80
Common Method Bias 81
Study 1: Examination of the Base Model 83
Sampling 83
Pretest 1 84
Pretest 2 85
Main Test 86
Controls 87
Study 2: Examination of the Moderator 110
Pretest 110
Sampling 110
Controls 111
Study 3: Examination of the Model Expansion 117
Sampling 117
Overview of Study 117
Controls 119
Chapter Summary 127
CHAPTER FOUR: RESULTS 128
Study 1: Examination of the Base Model 128
Overview 128
Pretest 1 129
Pretest 2 132
Main Test 136
Procedure 136
Design 137
Subjects 139
Measurement Reliability and Validity 139
Common Method Bias 142
Manipulation Checks 145

Confound Checks 146
Results 148
Summary of Findings 154
Study 2: Examination of the Moderator 159
Overview 159
Pretest 159
Main Test 162
Procedure 162
Design 162
Subjects 163
Measurement Reliability and Validity 164
Common Method Bias 167
Manipulation Checks 169
Confound Checks 170
Results 173
Summary of Findings 182
Study 3: Examination of the Model Expansion 187
Overview 187
Pretest 1 188
Pretest 2 189
Main Test 191
Procedure 191
Design 192
Subjects 194
Measurement Reliability and Validity 194
Common Method Bias 202
Manipulation Checks 203
Confound Checks 203
Results 205
Summary of Findings 218
Convergence of Findings 225
Chapter Summary 235
CHAPTER 5: DISCUSSION, IMPLICATIONS, LIMITATIONS 236
Discussion 236
From Encroachments to Threats 236
Demographic Issues 238
Product Characteristics 239
Open Ended Insights 241
From Threats to Intentions 243
Implications 244
Theoretical 244
Managerial 246
Limitations and Future Research 250
Conclusion 254
REFERENCES 256
VITA 290

LIST OF TABLES

Table 1: Definitions of Privacy 24
Table 2: Qualitative Pilot Study Demographics for Participants 36
Table 3: Summary of Hypotheses 76
Table 4: Manipulated Scenarios for Study 1 89
Table 5: Pretest 1 Definitions and Scales 90
Table 6: Study 1 and 2 Definitions and Scales for Survey Items 94
Table 7: Manipulations for Study 2 with Legitimacy Moderator 113
Table 8: Legitimacy of Threat Items for Studies 2 and 3 115
Table 9: Study 3 Definitions and Scales for Video Experiment 121
Table 10: Product Frequency of Mention for Pretest 1 131
Table 11: Manipulation Check Scenarios and Items for Pretest 2 for Study 1 133
Table 12: Product Affective Scales and Items 135
Table 13: Means of Discomfort and Privacy for Pretest 2 Products 136
Table 14: Measurement Statistics for Foot Fungal Cream for Study 1 141
Table 15: Correlation Table for Foot Fungal Cream for Study 1 141
Table 16: Measurement Statistics for Hemorrhoid Cream for Study 1 143
Table 17: Correlation Table for Hemorrhoid Cream for Study 1 143
Table 18: Confounding Check Results for Foot Fungal Cream for Study 1 147
Table 19: Confounding Check Results for Hemorrhoid Cream for Study 1 148
Table 20: Mediation Results for Foot Fungal Cream Study 1 153
Table 21: Mediation Results for Hemorrhoid Cream Study 1 154
Table 22: Summary of Findings for Study 1 158
Table 23: Measurement Statistics for Foot Fungal Cream for Study 2 165
Table 24: Correlation Table for Foot Fungal Cream for Study 2 166
Table 25: Measurement Statistics for Hemorrhoid Cream for Study 2 167
Table 26: Correlation Table for Hemorrhoid Cream for Study 2 168
Table 27: Confounding Check Results for Foot Fungal Cream for Study 2 171
Table 28: Confounding Check Results for Hemorrhoid Cream for Study 2 172
Table 29: Mediation Results for Foot Fungal Cream Study 2 178
Table 30: Mediation Results for Hemorrhoid Cream Study 2 179
Table 31: Summary of Findings for Study 2 186
Table 32: Measurement Statistics for Foot Fungal Cream for Study 3 196
Table 33: Correlation Table for Foot Fungal Cream for Study 3 198
Table 34: Measurement Statistics for Hemorrhoid Cream for Study 3 199
Table 35: Correlation Table for Hemorrhoid Cream for Study 3 201
Table 36: Confounding Check Results for Foot Fungal Cream for Study 3 204
Table 37: Confounding Check Results for Hemorrhoid Cream for Study 3 205
Table 38: Mediation Results for Foot Fungal Cream Study 3 211
Table 39: Mediation Results for Hemorrhoid Cream Study 3 212
Table 40: Summary of Findings for Study 3 224
Table 41: Summary of Hypotheses Supported for Each Study 232

LIST OF FIGURES

Figure 1: Conceptual Model 11
Figure 2: Intrusions on Privacy 14
Figure 3: Intrusions on Privacy (repeat) 38
Figure 4: Conceptual Model (repeat) 44
Figure 5: Illustrative Example of Testing for Common Method Bias in AMOS 145
Figure 6: Preacher & Hayes Bootstrap Mediation Illustration 152
Figure 7: Significant Findings for Foot Fungal Cream for Study 1 155
Figure 8: Significant Findings for Hemorrhoid Cream for Study 1 155
Figure 9: Physical * Visual for Cat. Threat (H3a): Foot Fungal in Study 2 175
Figure 10: Physical * Visual for Acc. Threat (H3b): Foot Fungal in Study 2 176
Figure 11: Physical * Legitimacy for Cat. Threat (H7a): Foot Fungal in Study 2 180
Figure 12: Physical * Legitimacy for Acc. Threat (H7b): Foot Fungal in Study 2 181
Figure 13: Significant Findings for Foot Fungal Cream for Study 2 183
Figure 14: Significant Findings for Hemorrhoid Cream for Study 2 183
Figure 15: Physical * Visual for Cat. Threat (H3a): Hemorrhoid in Study 3 208
Figure 16: Physical * Visual for Acc. Threat (H3b): Hemorrhoid in Study 3 209
Figure 17: Physical * Legitimacy for Cat. Threat (H7a): Foot Fungal in Study 3 214
Figure 18: Physical * Legitimacy for Cat. Threat (H7a): Hemorrhoid in Study 3 214
Figure 19: Physical * Legitimacy for Acc. Threat (H7b): Hemorrhoid in Study 3 216
Figure 20: Visual * Legitimacy for Acc. Threat (H7d): Hemorrhoid in Study 3 217
Figure 21: Significant Findings for Foot Fungal Cream for Study 3 219
Figure 22: Significant Findings for Hemorrhoid Cream for Study 3 220
Figure 23: General Support for Foot Fungal Cream 227
Figure 24: General Support for Hemorrhoid Cream 228

CHAPTER ONE: INTRODUCTION TO RESEARCH

Anecdotal Evidence of Dissertation Purpose

In 2011, CBS reported on several different department stores across the nation intentionally having dressing room doors where the door slats pointed downwards into the dressing room. Such a design does not allow the person inside the dressing room to see out, but a person outside the stall would be able to see in. Store employees said the design was planned to reduce theft so employees could monitor the dressing rooms, but it greatly reduced privacy as any person outside the room could see in. Shoppers commented that they understand the need for loss prevention tactics, but watching people in the dressing room was unacceptable and a huge invasion of privacy (CBS, 2011).

In other news, GPS technology combined with the use of cell phones now allows retailers to physically locate people in or outside of their store (called location based service or LBS). Similarly, malls have the ability to use a person's phone and GPS signal to track their whole shopping trip within the mall, detailing what stores a shopper goes to, how much time they spend in each store, and even connect with if a purchase was made (NBC, 2011). This is supposed to give retailers the ability to customize advertisements and provide better service for consumers using location-based applications (Myles, Friday, and Davies, 2003), but this also raises privacy concerns and feelings of intrusion in the consumer as some stores plan on sending employees to areas where customers are located based off LBS (Troianovski, 2012). Still, most research examining the privacy invasion from LBS focuses on the digital information aspect and not the interaction privacy concern (Rao and Minakakis, 2003).

Shoppers may resort to delinquent customer acts if they feel they do not have enough privacy for certain purchases. In early 2012, a woman was caught stealing condoms because she was too embarrassed to buy them. She put a couple boxes of condoms in her coat pocket and paid for her other items (Staff, 2012). To reduce this theft, many stores resort to locking up products such as condoms. One news article discusses the implications of defensive merchandising on condom purchases, showing many shoppers are too embarrassed to purchase once they realize they have to ask for access to the product (Redfeam, 2006). This embarrassment is due in part to the limited access to products forcing shoppers to interact with employees (and possibly other shoppers), therefore losing control of interaction privacy and their shopping experience.

To protect consumers' privacy, one bar in Seattle has gone as far as to ban Google Glasses. The bar released a statement that patrons of the bar do not want to be known, desire their privacy, and Google Glasses may invade that privacy. The bar owner decided the implications of allowing the glasses, which include a camera, would be too great to allow them in the establishment (Newton, 2013). While not a retailer, the bar's ban to protect privacy shows the importance of privacy control to shoppers. Understanding privacy in the retail setting and its implications to the store is an important and relevant topic in marketing that must be explored. Additionally, many different areas of marketing have called for such research.

Research Evidence of Dissertation Purpose

The 2012-2014 MSI research priorities designates consumption experiences as a major topic for marketing in the next few years. Companies like Apple and Starbucks have seen success recently due to their attention to designing a positive setting at the beginning of the consumption experience. As demonstrated by these stores, certain practices and cultures may

support firms' efforts to create positive shopping experiences, creating brand value (Deighton, Rizley, and Keane, 2012). Consumer value is based on positive shopping events felt through the senses (e.g., visual), which create satisfaction (Achrol and Kotler, 2012). Achrol and Kotler (2012) call for further understanding of how our senses play into creating satisfying experiences. However, while marketers desire to create great experiences, they also need to protect the consumer from potentially harmful practices (Achrol and Kotler, 2012), such as the invasion of privacy. Additionally, brick and mortar retailers have seen recent challenges with the growth of other shopping channel options (Chan and Pollard, 2003) and need to create a more positive shopping experience to create competitive advantage. Research regarding the shopping experience and how to make it a positive occurrence is being called for across the marketing discipline.

Another such call for research requests articles specifically focusing on understanding the consumer through privacy concerns. However, this call focuses specifically on information privacy (Lanier and Saini, 2008). Recent articles regarding privacy focus on information such as credit card security or the tracking and use of recorded data (e.g., tracking purchases or selling phone numbers to a third party), not privacy while shopping in the store and facing personal interactions with others. For clarity purposes, the former will be referred to as "information privacy" and the latter as "interaction privacy". Turley and Milliman (2000) listed interaction privacy as a need for future research in a retail setting. At the time of this article, the only study to explicitly examine privacy in a retail setting uncovered a positive relationship between a person's need for privacy and a person's responsiveness to store atmospherics (Grossbart, Hampton, Rammohan, and Lapidus, 1990).

To date, research has not extensively examined interaction privacy while shopping in a retail setting. Managers are concerned with shoplifting, taking measures to reduce theft at the cost of privacy (such as placing items up behind the counter, in locked cases, or having employees watch "suspicious" customers). According to marketing research, a positive shopping experience is becoming all the more important (Achrol and Kotler, 2012; Deighton et al., 2012), which could be enhanced when shoppers feel in control of their privacy. Privacy allows a person to think with all cognitive functions intact as well as protect their social identity, which could become threatened in retail settings as shoppers are associated with the products they buy. This type of threat to identity expression and free behavior could cause reactance (Brehm and Brehm, 1981) from the shopper that results in negative consequences to the store. The current study will test invasions of interaction privacy as a threat to identity, the resulting shopper reactions to the threat, and the mechanisms through which it operates.

Interaction privacy is in an important aspect of the retail environment, with both privacy and the environment affecting the consumption experience. Behavioral changes in the retail setting have long been researched for their impact from the physical environment. Many articles suggest the three emotional responses (pleasure, arousal, and dominance) explain the behavioral variation, mostly suggesting that higher pleasure and arousal result in more time in the store and greater basket size, as well as more satisfaction and shopping value (Babin and Darden, 1995). Chapter 2 (the literature review) will further explore atmospheric cues and the retail environment's impact on consumption experiences.

Research Gaps and Statement of Purpose

Research regarding privacy has mostly examined information privacy, or a person's ability to control information about themselves (Stone, Gardner, Gueutal, and McClure, 1983).

Studies have examined factors such as financial risk encountered through credit card security (Forsythe and Shi, 2003), beliefs, values and attitudes towards organizations collecting, storing, releasing, and using personal information (Stone et al., 1983), the use of technology to store and use personal information (Bloom, Milne, and Adler, 1994), and the legal right to privacy (Margulis, 2003). This type of privacy concern typically takes place during or after a purchase has been made and sometimes after the shopper has left the store. These studies do not examine the impact of privacy during the shopping trip and while facing personal interactions, the focus of the current study.

Several streams of literature have specified a different type of privacy, which this dissertation will refer to as interaction privacy, defined in this research as a person's ability to control the amount of access others have to the self during relational encounters in attempts to achieve ideal levels. This type of privacy concerns a person's ability to control interactions with others, such as with whom, when, and how the interaction will take place (Altman, 1975; Pedersen, 1997). Research has discussed several definitions of interaction privacy and whether it is achieved through control (Altman, 1975, 1977; Ball, 1975; McClemens, 1976) or withdrawal (Haag, 1971; Schwartz, 1968; Shils, 1966; Simmell, 1971), as well as the functions and mechanisms of interaction privacy (Altman, 1977; Pedersen, 1997; Westin, 1970). The extant research does not typically examine different aspects of privacy (e.g., visual and physical) when studying the impacts and mechanisms of privacy and thus cannot explore which aspects have a greater impact. Further, previous literature does not discuss the relationship between privacy and purchasing behavior, specifically the mechanisms mediating the relationship or what the cost of privacy is to the store. Psychology literature has examined definitions of privacy and why privacy is important to an individual, but it has left out variables explaining the relationship

between threats to privacy and consequences to others involved. Interaction privacy has not been linked to purchase pressure or identity threats in current research. Interaction privacy is almost entirely unexamined in marketing literature and in a retail setting.

The extant research does not look at moderating influences of privacy effects such as differing reasons of privacy encroachment and how that influences reactions to privacy invasion. For example, an employee may be seen as having a more legitimate reason for threatening privacy as compared to another shopper as the employee is expected to be available to consumers. However, another shopper could be seen as a better source for information when making purchasing decisions, and therefore their privacy invasions would be more influential.

There is a gap in research focusing on interaction privacy in a retail store setting as well as different aspects of interaction privacy. The purpose of the current dissertation is to address those gaps in research through several quantitative studies. This dissertation will examine physical and visual encroachments, social identity threats, purchase pressure, the moderating effect of legitimacy of threat, and the impact these variables have on customer feelings of control and consequences to the store.

Research Questions

As the described gap in literature exists, this dissertation proposes to address the following research questions which will contribute to literature and theory:

R1) How do different aspects of interaction privacy (physical vs. visual) change shopper behavior in-store?

R2) What mechanisms mediate the relationship between interaction privacy and shopper behavior?

R3) How is interaction privacy different depending upon the legitimacy of the privacy threat?

Theoretical Contributions

The findings of these research questions will add to the understanding of interaction privacy by breaking down privacy into different features and seeing which aspects have more impact on purchase pressure and social identity threats, and ultimately consequences to the store. Research examining invasions of physical space or visual encroachment do not typically control for the other variable. Thus, current findings attributed to physical space encroachment could also be influenced by the visual aspect and vice versa. Additionally, the effects of the interaction of both physical and visual aspects of privacy have yet to be studied for their impact on the shopper and store.

While psychology literature that discusses the definitions of privacy has brought in the functions and mechanisms to achieving privacy, this literature leaves out the mediating variables between privacy and the consequential reactions in a retail setting. As privacy impacts behavior, identifying these variables and their impact is a first step in understanding interaction privacy's influence to a retailer. Further, very few quantitative studies test a full model of reactance theory examining mediating mechanisms and feelings of control. Most research that uses reactance theory simply examines the threat and reaction, not underlying causes or the importance of loss of control. The examination of the theoretical model as a whole will further contribute to reactance theory (Brehm, 1966; Brehm, 1993; Brehm and Brehm, 1981) and the relationship between variables discussed in theory. The moderating variable will also add to the marketing field's theoretical knowledge.

As previously mentioned, current research does not examine under which contexts privacy is more important. According to reactance theory, a justified reason for a threat to

freedom will cause less reactance. This suggests a different impact from legitimate privacy encroachments on identity threats. Preliminary interviews show customers act out in ways to regain privacy; if findings show customers react more strongly to privacy invasions depending upon why privacy is invaded, this will show boundary conditions to reactance theory (Brehm, 1966; Brehm, 1993; Brehm and Brehm, 1981).

The findings of the studies will contribute to establishing boundary conditions for reactance theory as well as explicitly examining control's relationship in the model. Social identity theory is used to supplement reactance theory and help explain direction in the hypotheses. Participants of a qualitative pilot study said they desired privacy as to not be judged by others, which is in accordance with social identity theory and could also show boundary conditions if identity threat differs by legitimacy of encroachment. Overall, addressing the research questions will show boundary conditions to reactance theory and social identity theory (Branscombe et al., 1999; Brehm, 1966; Brehm, 1993; Brehm and Brehm, 1981; Hogg, 2003; Hogg et al., 1995; Turner et al., 1979).

Ultimately, in-store shopping privacy is a topic mostly untouched in marketing literature. This study will be a first step in understanding what interaction privacy means to shoppers, what functions privacy serves, and how it impacts retailers. The moderator considered in the model will also contribute to a further understanding of interaction privacy and what retail factors impact perceptions of visual and/or physical encroachment. Consumer privacy is involved in customer relationship management as well as enhancing shopping encounters (Burgoon, 1982). The findings would contribute greatly by filling a gap and showing how interaction privacy is a needed element in adding to the positive aspects of the shopping experience, an area of research the marketing discipline has called for (Achrol and Kotler, 2012; Deighton et al., 2012; Lanier

and Saini, 2008). Finally, the results will show a more detailed model of reactance theory and the variables involved in reactance to interaction privacy threats.

Managerial Implications

Findings of this study will help a retailer better understand an employee's impact on social identity threats and purchase pressure leading to the consideration to add training that will help ensure privacy to shoppers. A legitimate threat to privacy should reduce reactance, but if employees encroach without a legitimate reason, shoppers could react more strongly and the store could see consequences that may have been avoided if employees were aware of privacy issues.

As control is a variable between the threat and reactance, understanding that the loss of control is an antecedent to reactance suggests that finding different ways to give control back to shoppers will reduce the reactance outcomes of abandonment and purchase intentions. For example, Kroger will give the key to shoppers that accesses locked cases containing pregnancy tests if asked. Some stores have installed "push for service" buttons that give a certain amount of control back to the shopper. Employees can give shoppers privacy, but the shopper feels in control of interactions that take place in the store as they can push for service if they desire it (or not). Such tactics as these service buttons give shoppers more control over their interaction privacy while shopping in the store and could reduce negative outcomes to the retailer.

This research will hopefully raise awareness with managers that interaction privacy does have implications for the store, and a shopper may be affected by the physical and visual encroachment of employees. Shoppers want an employee to acknowledge they are in the store if the shopper needs help, but other behaviors from the employee may not be seen as appropriate by the shopper. Additionally, as technology is helping retailers invade a shopper's privacy even

more, awareness of shopper privacy concerns could be very beneficial to practitioners to avoid bad publicity (CBS, 2011) or even lawsuits regarding privacy violations (e.g., Troianovski, 2012). Further, to increase customer satisfaction and the shopping experience, managers being aware of and understanding interaction privacy will offer ways of allowing consumers the ability to control who and the amount of interaction they encounter while shopping to meet privacy needs.

Overview of Conceptual Model

This dissertation proposes the following model (Figure 1) using reactance theory to frame the constructs based on the following definition: interaction privacy is a person's ability to control the amount of access others have to the self during relational encounters in attempts to achieve ideal levels. The conceptual model is described as privacy encroachments negatively lead to social identity threats, which positively impact purchase pressure, that will cause an individual to realize control has been lost, and reactance then occurs. This section will introduce the variables of the model as well as the underlying theories. Chapter two discusses these topics in more detail.

Overview of Theoretical Basis

Psychological reactance theory (Brehm, 1966) is the main theory used to describe the conceptual model. Reactance theory states that any threat to freedom of behavior will result in attempts to reduce the loss and reclaim the threatened behavior. The resulting action to reclaim freedom is referred to as reactance to the threat. The conceptual model put forth here shows that encroachments to privacy (both visual and physical) impact identity threats, which cause purchase pressure, threatening the consumer's ability to behave and shop freely as one desires

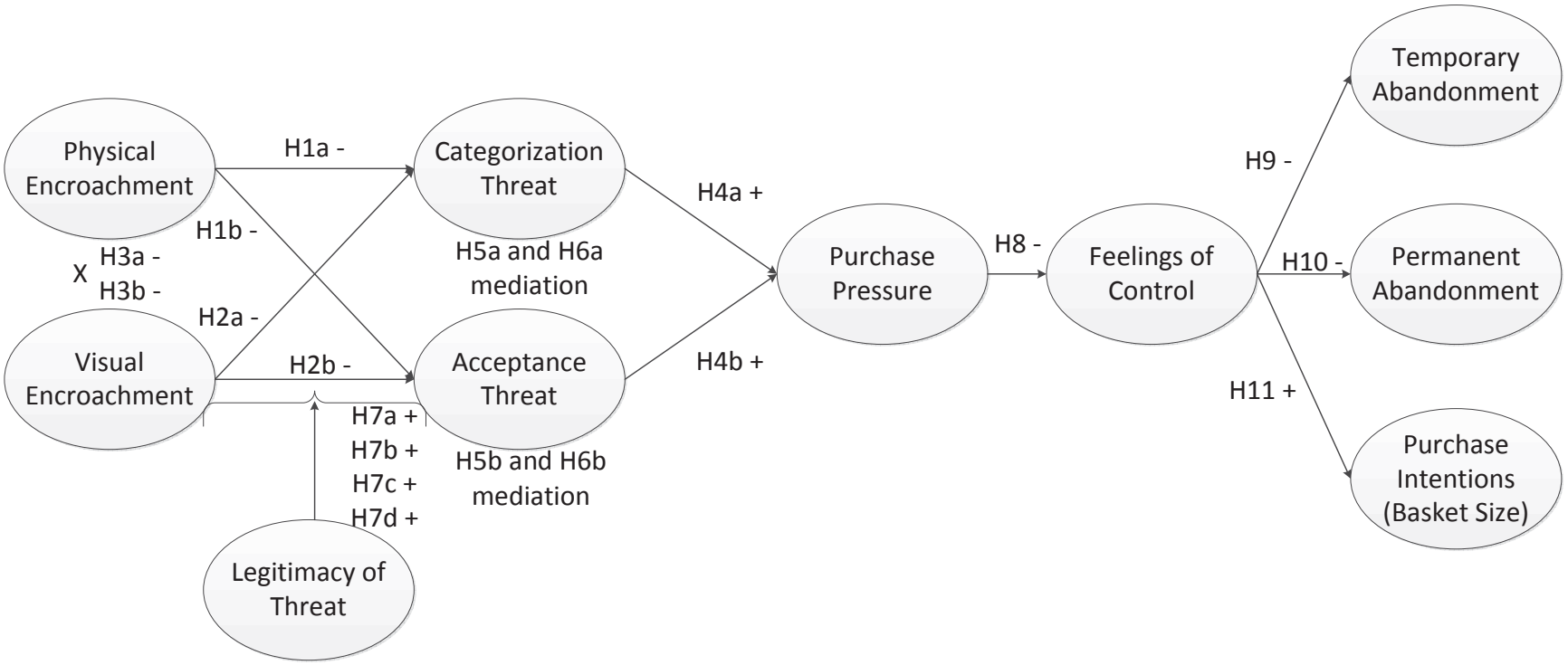


Figure 1: Conceptual Model

with control over interaction privacy. Reactance theory states that free behaviors are equivalent to control. When applying reactance theory to a shopper experience, this means restricting a person's control is a threat to free behavior that will cause reactance. In the model, as interaction privacy relates to social identity threats (both categorization threat and acceptance threat), feelings of purchase pressure are impacted, which will cause the realization of a loss of control. The reactance which occurs after loss of control is realized is manifested by abandonment (either temporary abandonment of the area or permanent abandonment of the store) and smaller purchase intentions. The model walks through two rounds of threat and reactance: identity threats which cause an emotional reactance of purchase pressure followed by the realization of loss of control (threat again) and the behavioral reactions of abandonment and purchase intentions.

Social identity theory (Turner, Brown, and Tajfel, 1979) helps to explain the felt threats to identity when privacy is encroached. A person will act in accordance to stereotypical behaviors of a group in which they think or wish to belong (Hogg, 2003; Hogg, Terry, and White, 1995). Several threats are listed under this theory, such as categorization (being placed in to the wrong group) and acceptance (fear of being rejected) (Branscombe, Ellemers, Spears, and Doosje, 1999). Both threats are negatively related to privacy encroachments as privacy invasion causes a clearer picture of who a person is (decreasing categorization threat) and adds to feelings of acceptance.

Intrusions on Privacy

The focus of this dissertation will examine privacy encroachments through two aspects: physical and visual invasions. The combination of these two features results in the following 2 x

2 matrix outlining the different ways in which privacy can be encroached upon (Figure 2). When both physical and visual encroachments are low, this is referred to in this dissertation as anonymity, or the ability to be in public without being noticed. The second quadrant, invasion of personal space, occurs when physical encroachment is high but visual encroachment is low. Personal space is an invisible boundary surrounding a person that typically results in unpleasant feelings and reactions when crossed. This space is different from territory, as territory is defined in literature as a fixed space with ownership, and personal space moves with a person at all times (Altman, 1975). High visual encroachment and low physical encroachment make up the third quadrant of spotlight. The spotlight effect in literature refers to the overestimating of how much a person believes they are being watched (Gilovich, Medvec, and Savitsky, 2000). It is here in this study where a person feels observed even if the invader is not physically close. Similar to existing literature, the spotlight effect for this study will refer to the visual encroachment and feelings of being watched, whether overestimated or accurately perceived. The last quadrant, shadowing, involves the interaction of both high physical and high visual encroachment. It is this quadrant where the least amount of research has been done. Literature regarding physical space does not typically account for visual encroachment and vice versa.

Social Identity Threat and Purchase Pressure

As privacy encroachments impact identity threats, constraints to freedom through purchase pressure are then felt. Identity threat can be a personal threat to a person's character or ability, or a social identity threat to group membership (Major and Sawyer, 2009), with threats to social identities being more influential for behavioral outcomes (Turner, Reynolds, Haslam, and Veenstra, 2006);thus, social identities are the focus of this study. Shoppers are worried about being mis-categorized or unaccepted and will act in ways consistent to preferred identities as a

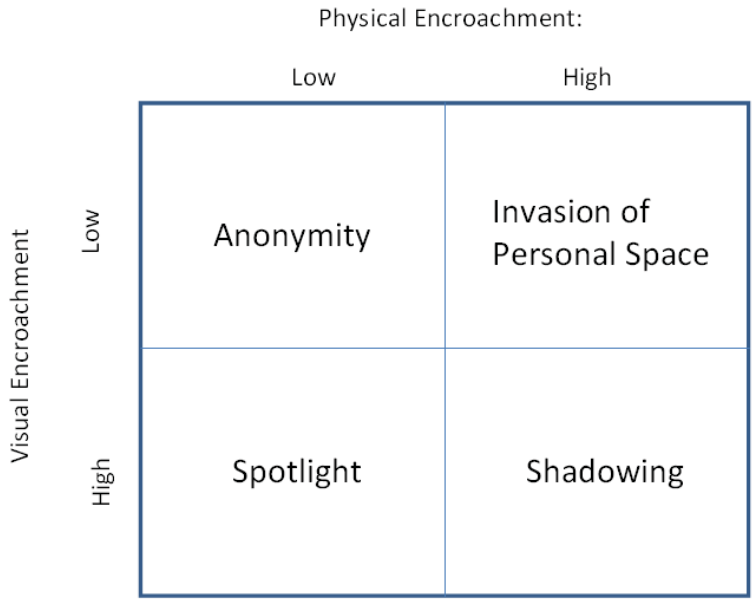


Figure 2: Intrusions on Privacy

form of impression management (Branscombe et al., 1999; Turner, Hogg, Oakes, Reicher, and Wetherell, 1987). These threats to identity will change the purchase pressure felt by the shopper, where there is an increased feeling to buy a product or a particular brand, either felt from the self or from others (Warshaw, 1980).

Once a change in purchase pressure is realized, a person then feels a loss of control. According to reactance theory, threatening a behavior is reducing a person's control to behave freely in any way they desire (Brehm, 1993). However, threats and pressure must occur before a person can realize their control has been reduced.

Reactance: Outcomes of Privacy Encroachment

Once loss of control is realized, a person will react to limit the threat and regain freedom (Brehm and Brehm, 1981). The reactance to privacy encroachment is seen in the model two

ways: through abandonment and purchase intentions. When levels of privacy become uncomfortable, one of the more popular ways to regain it is to flee. A person can temporarily leave an area to return later, which may be reflected by basket size or purchase intentions. A person may leave a shopping zone that does not have adequate privacy levels, shop in another area while waiting for the privacy levels to change, and return to the original shopping area later if privacy has reached adequate levels. However, while shopping in another zone, the person may have increased their basket size or purchase intentions. Shoppers may also permanently abandon the area (which would be reflected in smaller purchase intentions) or permanently abandon the store. If a person feels they cannot achieve adequate levels of privacy to make a purchase, this will be reflected in smaller purchase intentions.

Moderating Influence: Legitimacy of Threat

Reactance theory makes note of differing degrees of reactance depending upon varying factors, such as characteristics of who is invading privacy. This dissertation will focus on legitimacy of the threat. Reactance theory says that reactance will be reduced (not eliminated) if the source of the threat has a legitimate reason for restricting behavior (Brehm, 1966). This suggests a difference between legitimate and non-legitimate reasons for encroaching privacy. For example, in a retail setting, an employee may be seen as having a more justified reason to encroach privacy as they are there to help shoppers. On the other hand, a person might see other shoppers (especially those shopping for similar types of products) as having legitimate reasons to invade privacy as they try to base decisions off each others' purchases. As both the employee and the shopper can have differing levels of legitimacy according to another shopper, this study will focus only on encroachments by an employee of a store. This will help simplify effects seen

in regards to legitimacy but also has more impact to a manger as they can control an employee's behavior.

Proposed Methodological Strategy

A three-study design was used to test the set forth research questions. Experimental designs were used with both written and video scenarios. An online consumer panel was used for data collection. Multiple scenarios/manipulations were carried out in each study to test the impact of privacy encroachment. Scales were created and adapted as applicable for the variables in the proposed model and control variables. Regression and ANCOVA (analysis of covariance) statistical techniques were employed to test the relationships.

Study 1 involves four manipulations across two levels of physical encroachment (low/high) and two levels of visual encroachment (low/high) using two products (foot fungal cream and hemorrhoid cream). Participants from an online panel read one of the scenarios and answered a survey regarding their scenario. Study 1 tested the model up to purchase pressure without moderators. Two products were used to test the consistency of the model across products, not to determine significant difference in the variables between the two products (i.e., to show that physical encroachment impacts both products, not to show that physical encroachment impacts foot fungal cream more significantly than hemorrhoid cream).

Study 2 used an online panel involving eight manipulated scenarios with two levels of physical encroachment (low/high), two levels of visual encroachment (low/high), and two levels of legitimacy (low/high) across two products (foot fungal cream and hemorrhoid cream). Participants read one scenario randomly assigned to them and answered a survey regarding the scenario. Study 2 replicated study 1 testing the model through purchase pressure and added the moderator of legitimacy.

Study 3 used video scenarios shown to an online consumer panel and involved four manipulations with two levels of physical encroachment (low/high), two levels of visual encroachment (low/high) across two products (foot fungal cream and hemorrhoid cream). Each of these videos were shown using a male confederate and a female confederate, ultimately resulting in sixteen different videos. Participants got one video scenario randomly assigned through an online survey program and answered a survey. The study tested the full model through consequences to the store and the moderator of legitimacy.

Dissertation Organization

This dissertation is organized into five chapters. Chapter 1 introduced the topic and phenomenon to be studied, highlights the gaps in literature, proposes research questions, and identifies contributions. Chapter two is a literature review of theory and research applicable to the variables related to interaction privacy. A qualitative pilot study is included in chapter 2 that leads to the variables discussed in the conceptual model. The literature review examines environmental cues impacting the shopping experience, definitions of privacy, theoretical foundations of reactance theory and social identity theory, as well as reviewing extant literature on the variables included in the model. Chapter two sets forth formal hypotheses supported by the literature. Chapter three details the research methodology that will be used to collect and analyze data across three studies. Chapter four reveals the findings and hypothesis support, limitations, and implications of the research. Lastly, chapter five discusses the findings and implications of the research, identifies limitations and opportunities for future research, and concludes the dissertation.

CHAPTER TWO: RESEARCH DEVELOPMENT AND LITERATURE REVIEW

Atmospheric Cues and Environmental Impact on the Shopping Experience

Much research has examined the impact of the retail store environment on the shopping experience (for a published literature review, see Turley and Milliman, 2000). Research spans from the outside and architectural aspects of the building to the impact of red versus blue colors on purchasing habits. Color schemes have been researched extensively, mostly comparing cool/blue colors to warm/red colors. Most studies agree that colors are an important trigger on emotions (Lindstrom, 2008) and can influence behavior. Shoppers respond to colors better than written communication (Sorensen, 2009) but may not be stimulated in regards to approach behaviors, even though colors are connected to physical attraction (Bellizzi, Crowley, and Hasty, 1983).

Similar to colors, customers respond to images and shapes over written communication (Sorensen, 2009), and shapes can influence behavior by triggering associations and emotions (Lindstrom, 2008). Colors, images, shapes, and words are all part of how stores communicate with their consumers while they are in the store. Several studies have looked at the best way to communicate to consumers, discovering that the most influential in-store location to communicate is the shelf edge (Sorensen, 2009). Pop-up displays can also affect sales, as one study showed an increase in sales when a floor display was featured for a pharmaceutical product (Gagnon and Osterhaus, 1985). The clarity of the message also creates different values for the consumer. Symbolic and vague communication intensifies hedonic value, while clear and solid communication adds to utilitarian value (Arnold and Reynolds, 2009).

Along with visual elements, non-visual design variables, such as sound and music, also influence behavior (Lindstrom, 2008). The tempo and volume of music in a store can change arousal (Donovan, Rossiter, Marcoolyn, and Nesdale, 1994), change the pace of traffic flow (Milliman, 1982), change time spent in store (Smith and Curnow, 1966) and influence time perceptions (Hui, Dube, and Chebat, 1997; Hui, Bradlow, and Fader, 2009; Milliman, 1986). Upbeat music can increase arousal (Donovan et al., 1994), but slower tempo music causes shoppers to move more slowly, spend more time in the store, and buy more as a result (Milliman, 1982). While loud music causes shoppers to spend less time in the store, it only increases sales per minute and does not affect total sales (Smith and Curnow, 1966). Sales are also affected by type of music, as classical music in one study caused an increase in sales due to more expensive items being bought (Areni and Kim, 1993).

Another major non-visual design variable that has an impact on shoppers while they are in the stores is scent. Grocery stores put their bakeries and flowers near the entrance to allow a consumer to walk in to a fresh scent. Scent can have a more powerful impact on behaviors than brand logos (Lindstrom, 2008) and can be more irritating to consumers than visual design factors (d'Astous, 2000). The presence of an inoffensive scent can enhance evaluations (d'Astous, 2000), enhance consumer reactions, and cause the shopper to perceive they spent less time in the store (Spangenberg, Crowley, and Henderson, 1996). The mere presence of a scent may be more important than the pleasantness or intensity of the scent (Spangenberg et al., 1996). Smell and touch are connected and when the two are congruent can lead to higher evaluations (Krishna, Elder, and Caldara, 2010).

Layout variables can also impact shopper behavior. One of the first layout variables that a shopper encounters is the entrance. The entrance position should be considered in layout and be

appealing as well (Sorensen, 2009). A right versus left versus center entrance can direct shoppers and have an impact on in-store traffic movement. Open space (Sorensen, 2009) and a well designed store can optimize traffic flow and have a revenue-generating effect (Anic and Lim, 2010), with a modern design receiving more favorable ratings (Greenland and McGoldrick, 1994). Like most of the design variables, layout can have a favorable impact on evaluations, perceived time spent in store, perceived psychic costs, price, service, and merchandise quality (Naker, Parasuraman, Grewal, and Voss, 2002). The store design and layout has an effect on how fast and efficiently a consumer shops through a store and their level of perceived stress (Naker et al., 2002). A nonstandard layout can create hedonic value by allowing the shopper to explore, whereas a standard layout is easily navigable and utilitarian in value creation (Arnold and Reynolds, 2009).

A particularly important variable to consider in store layout is the placement and adjacencies of aisles. Placing cross-category products in the same aisle facing each other had a significantly greater impact on sales than moving the aisles closer together (Bezawada, Balachander, Kannan, and Shankar, 2009). The creation of a power aisle, a single aisle with large amounts of a few store staples, will have an effect on the shoppers' price perceptions of the products in the aisle depending upon the number of SKUS and facings (Smith and Burns, 1996).

Layout variables are also important at the shelf level. Placing a product or brand at the top of a shelf could increase attention and consumer evaluations, whereas only attention is increased when the product is on a middle shelf (Chandron, Hutchinson, Bradlow, and Young, 2009). A product placed at an eye level position will see better results in sales than if it had more facings on the bottom shelf (Dreze, Hoch, and Purk, 1994). Horizontally, a product does better in the center of the aisle, and refrigerated items are ideally placed in the well (Dreze et al., 1994).

While the position of the product on the shelf is more important than the number of facings the product has (Dreze et al., 1994), research has focused more on space allocation.

Human variables are also included in the retail store's physical environment. While the majority of studies examining human variables have focused on customers, there are a few that examine the employee. Naker et al. (2002) state that employee cues do little to influence the consumer regarding time and effort perceptions and that design cues have more of an impact. However, they do note that employee cues are associated with service quality (Naker et al., 2002). Employee credibility and perceptions can be increased with positive store atmosphere and design (Sharma and Stafford, 2000). Employees can also have a positive effect on purchases, either by being friendly (Mattila, 2008) or through an increased number of employees being available in a store with a discount ambiance (Sharma and Stafford, 2000).

However, with all this research on the impact of the physical environment, interaction privacy has yet to be examined. Turley and Milliman (2000) note in their taxonomy and literature review that privacy of this nature needs to be examined as it relates to the store's environment and its impact on the shopping experience.

Privacy Examined

Definitions of Privacy

Privacy in recent years has become more relevant a topic due to the invasion of privacy through technological advances. Technology has allowed privacy invasion to become less obvious as it does not require a physical trespass and it can happen without the invaded ever knowing. Through this technology, media has found a profitable way to satisfy human curiosity about the personal lives of individuals (Haag, 1971) (e.g., Facebook), and marketing has found

ways to collect information for customized communication (Widmier, Jackson, and Brown McCabe, 2002).

Literature regarding privacy is split two ways differentiating privacy along aspects of information or interaction (Foddy and Finighan, 1980; Gross, 1971). Information privacy concerns a person's ability to control information about him/herself (Stone et al., 1983), such as with credit card security (Forsythe and Shi, 2003), the collection and use of personal information (Stone et al., 1983), and use of technology to store personal information (Bloom et al., 1994). Information privacy typically deals with control either of how information is obtained (e.g., telephone, mail, personal intrusion) through the consumer's environment or control of the actual information (Goodwin, 1991). Information privacy can be violated when one person or party reveals information about an individual that the individual does not want to be revealed, violating the person's right to selective disclosure (Beardsley, 1971).

While most literature refers to privacy regarding personal information as "information privacy," research rarely specifies another type of privacy. Other definitions without information included refer to privacy involving social contact with another physical actor (Altman, 1975; Burgoon, 1982; Foddy and Finighan, 1980; Haag, 1971); therefore, "interaction privacy" is an appropriate way to differentiate from information privacy. Burgoon and colleagues (1989) refer to a social or interactional privacy that they define as being able to control the different aspects of relational encounters. While information privacy excludes social situations, interaction privacy includes the social aspect as well as concerns of one's identity in the interaction (Foddy and Finighan, 1980). Definitions for privacy involving interactions are split between privacy being found only through withdrawal tactics or through the ability to control access to the self or information. Withdrawal definitions require that a person remove themselves from others in

order to obtain privacy (Haag, 1971; Schwartz, 1968; Shils, 1966). Control definitions state that privacy can be achieved in the presence of others as long as a person has the ability to determine who, what, when and how social interactions occur (Burgoon, 1982; Pedersen, 1997; Rapoport, 1972).

Table 1 lists several existing definitions of privacy in the literature, distinguishing between information and interaction privacy as well as if the privacy definition calls for withdrawal or control. Information privacy can only be obtained through control as one cannot fully erase their personal information from the world for withdrawal. This table shows the differences in privacy definitions (information and interaction) and the necessity to examine them separately. It also shows that control is an element in privacy (to be discussed more later as it relates to the model) and that withdrawal (from both visual and physical intrusions) is not required for privacy.

One of the seminal authors regarding interaction privacy is Altman (1975), who regards interaction privacy as the ability to control and regulate the accessibility of oneself. Privacy can be achieved without isolation by being able to select when you are open or closed to others. Altman makes note that previous definitions of privacy require a withdrawal to achieve full control but that privacy actually involves boundaries that are flexible and fluid (Altman, 1975, 1977). However, these boundaries must be part of some set of established norms so that others know expected limits (Benn, 1971).

Privacy is reduced or invaded when a person loses control over their information or their interaction experiences. A person sets boundaries or limits to themselves or information about themselves, and when those limits are not respected then privacy is lost (Gross, 1971). One of the more obvious boundaries that people place in regards to privacy is that of physical space,

Table 1: Definitions of Privacy

Citation	Definition	Type of Privacy / How Achieved
(Altman, 1975, 1977)	"Selective control of access to the self"	Interaction / Control
(Ball, 1975)	"One's ability to engage in activities without being observed by noninvolved others"	Interaction / Control
(Burgoon, 1982)	"Ability to control and limit physical, interactional, psychological and informational access to the self or one's group"	Interaction / Control
(Foddy and Finighan, 1980)	"Privacy is the possession by an individual of control over information that would interfere with the acceptance of his claims for an identity within a specified role relationship"	Information / Control
(Haag, 1971)	"Privacy is the exclusive access of a person (or other legal entity) to a realm of his own. The right to privacy entitles one to exclude others from watching, utilizing, or invading this private realm"	Interaction / Withdrawal
(Ittelson, Proshansky, and Rivlin, 1970)	"Obtaining freedom of choice or options to achieve goals in order to control what (and to whom) information is communicated about oneself"	Information / Control
(Jourard, 1966)	"The state of privacy is related to the act of concealment. Privacy is an outcome of a person's wish to withhold from others certain knowledge as to his past and present experience and action and his intentions for the future"	Information / Control
(McClemens, 1976)	"That area of a man's life which, in given circumstances, a reasonable man with an understanding of the needs of a community would think it wrong to invade"	Interaction / Control
(Rapoport, 1972)	"The ability to control interaction, to have options, devices, and mechanisms to prevent unwanted interaction, and to achieve desired interaction"	Interaction / Control
(Schwartz, 1968)	"A highly institutionalized mode of withdrawal"	Withdrawal

Table 1: Continued

Cite	Definition	Type of Privacy / How Achieved
(Shils, 1966)	"A 'zero relationship' between two persons or two groups between a group and a person… it is constituted by the absence of interaction or communication or perception."	Interaction / Withdrawal
(Simmell, 1971)	"Privacy is a condition of isolation against outside influence and observation where we are free to do our thing."	Interaction / Withdrawal
(Westin, 1970)	"The right of the individual to decide what information about himself should be communicated to others and under what conditions"	Information / Control

elaborated on further in the privacy mechanisms section. The physical presence of others, physical touch, or other variables that impact the senses (sight, sound, or smell) are enough to invade established boundaries. Privacy can include the ability to control one's environment from the impacts of disturbance from another, whether deliberate or accidental (Altman, 1975; Beardsley, 1971; Burgoon et al., 1989; Haag, 1971). It is the ability to be free from observation and free from intrusion in to one's environment (Altman, 1975; Benn, 1971; Pedersen, 1997). Haag (1971) goes as far as to say that intrusion can come from more than just other humans, but from animals, machines and/or objects in addition to intrusions felt by the senses in a person's environment. Noise and sights can be intrusive if they are undesired as they violate a person's right to be left alone and in turn deteriorate one's preferred environment (Beardsley, 1971). For example, a person's privacy may be violated when they have their window open on a nice day and their neighbor's cigarette smoke enters in. The smoke is an invasion to the person's environment and they cannot control the intrusion without changing their environment.

However, this particular situation does not include the physical presence and interaction of two people and is later referred to in literature as physical privacy (Burgoon et al., 1989). This particular description in literature shows in extreme cases how privacy can be invaded through personal space without a visual element of another person and reiterates the need for privacy examination along different dimensions. This dissertation will look at encroachments involving relational encounters, not the interaction of environments. In addition to personal space, several other established norms exist setting boundaries generally accepted: the right to not be eavesdropped on, to not have details of one's life given without consent, and to not be the subject of public focus. Having adequate levels of privacy can be the difference between happening to be briefly noticed versus close observation by another (Benn, 1971).

Several definitions of interaction privacy state that the mere act of observation or being watched is an intrusion to privacy (Benn, 1971; Haag, 1971), particularly when someone is being watched in their private space. A person being watched is deprived of exclusive access to themselves and may as a result act differently in private in attempts to control their image or to seek approval (Haag, 1971). This violates their autonomy, as the person is now influenced to act a particular way (Beardsley, 1971). One piece of research discusses four types of privacy including physical privacy (ability to keep one’s environment free from intrusion, as discussed above), interaction privacy (the control of relational encounters, the focus of this dissertation), psychological privacy (private thoughts and attitudes), and informational privacy (ability to control information about one’s self) (Burgoon et al, 1989).

These four types of privacy can be violated through five ways. Privacy can be invaded by psychological and informational means (e.g., persuasion or criticism), non-verbal interactions such as being physically close or eye gazing, verbal interactions which are beyond society norms

(e.g., commenting on someone's appearance), physical violations (such as surveillance), and also through impersonal invasions which are not directed at a person but rather happenstance (e.g., traffic noises). Not all of the privacy violation types are applicable to the four privacy types. For example, physical privacy, or the right to keep one's environment free from intrusion, cannot be violated through verbal communication as that by definition changes the privacy type to interactional. These violations can be remedied through a regaining of control regarding the interaction. The invasions of interaction privacy through non-verbal encroachment (as opposed to impersonal invasions like traffic noises or physical violations such as surveillance cameras) will be studied in the retail setting as these are more applicable to interaction privacy. Furthermore, non-verbal violations to privacy are seen as more intense and intimate than verbal invasions are (Burgoon et al., 1989), which should result in a larger effect seen through non-verbal encroachments.

As privacy is defined by an element of control, the more privacy that is obtained is not always better. Each individual has an ideal level that can change as one avoids or seeks social interaction at different levels. The ideal level of privacy lies on a continuously changing continuum. Environment, experience, time and other factors can increase or decrease the desired level of privacy. When the desired level of privacy is equal to the actual level of privacy, then a balance exists and a person is satisfied. However, when the two do not meet, an imbalance occurs, which is unsatisfactory. The imbalance can occur one of two ways. Either the achieved level of privacy is less than desired and feelings of crowding and invasion transpire, or there is too much actual privacy that exceeds desired levels and feelings of isolation arise (Altman, 1975).

Benn (1971) discusses that this balance of privacy can be reached in three ideal aspects of a person's life. The first is that a balance is reached in the relationships of an individual and the

relationship is free from influence of outsiders (personal relationship privacy). The relationship is private and controlled between those involved without inclusion of outsiders. The second is that of privacy reasonably expected by a free citizen (privacy from governmental interference). A person has the freedom to choose how their life is regulated with limits to the degree of influence from others (Benn, 1971) and legal rights to privacy (Margulis, 2003). The last ideal is that of personal autonomy (right to privacy to be alone and an individual). This ideal emphasizes that one's principles guide actions and a person is truly themselves when social roles are cast aside and one is unobserved (Benn, 1971). These three ideals are reiterated by Simmell (1971) who states that privacy is a reasonable expectation of all relationships, is part of values and regulations instituted by a society, and that privacy is necessary for individuals to be able to freely express themselves. Much research discusses privacy in terms of being free from social constraints, leaving a person free to act true to themselves, as discussed further in functions of privacy. This current research will examine privacy most closely resembling Benn's first ideal of personal relationship privacy. Interaction privacy involves the control of deciding whom to have a relationship with and whom to keep as an outsider. In addition to defining privacy, literature has somewhat examined the functions privacy serves to a person, which the next section will review.

Functions of Privacy

Altman (1975) helped to distinguish three functions of privacy: managing social interactions, planning how to act in social situations, and securing a self identity. He proposed that we as individuals function better when we successfully manage our interaction privacy levels (Altman, 1975). When interaction privacy is regulated, it adds to an individual's self worth by controlling established limits and boundaries. Having an ideal state of privacy helps a person

determine who they are in social interactions as well as where and when those interactions occur (Altman, 1975; Westin, 1970). A person can control interactions by limiting communication or understanding what relationships offer more protection for privacy (Westin, 1970). When privacy is at an ideal level, it maximizes the amount of options a person has in regards to choice and behavior, allowing them more control to manage interactions (Proshansky, Ittelson, and Rivlin, 1972).

Closely related to managing social interactions is privacy's function for planning how to socially interact. We compare ourselves to others and create labels for individuals and groups. Privacy assists social comparisons by allowing time to think, plan, apply meaning, and decide how to act (Altman, 1975). When we are unobserved, we have the opportunity to plan future behaviors according to associated roles and identities (Burgoon et al., 1989). Privacy can also support plans and actions that are illegal and require no or little interaction from others (Margulis, 2003; Warren and Laslett, 1977).

The most researched and developed function of privacy is that of identity security. Identity is described as the general idea a person wants to establish as the type of person he/she is as perceived by others (Foddy and Finighan, 1980). Simmell (1971) notes that privacy is necessary as our true selves may be too much for social standards and society to handle. We may wish to indulge in socially inappropriate behavior that is only acceptable when we are alone. Privacy is necessary for us to express ourselves un-judged and uninhibited as individuals (Burgoon, 1982; Burgoon et al., 1989; Simmell, 1971) and to violate norms associated with current identities. It allows for the disregard of social standards without fear of reprimand or social blacklisting and also for the practice of appropriate conduct when privacy is not available (Burgoon et al., 1989; Warren and Laslett, 1977). When we are in private, social roles can be

cast aside and true self expression and evaluation can occur (Altman, 1975). Identities can be damaged if a person loses control over information that is mismatched to a claimed identity or role. Privacy and interaction control are necessary requirements for the maintaining of an established identity (Foddy and Finighan, 1980).

Westin (1970) focuses on the identity function of privacy by splitting it into further categories of personal autonomy, where a person can define themselves as a person and their place in the world; emotional release, where a person can act as their true self without worry of social roles; and self-evaluation, where a person contemplates past social interactions, experiments and makes plans for future interactions. Further, privacy can lend to a person's spiritual growth, an increased understanding of nature, culture, and society (Westin, 1970).

Pedersen (1997) added additional functions of privacy. Similar to previously identified functions are functions of contemplation and having time to think as well as autonomy and the ability to try new things. However, several additional aspects were reported. Privacy allows for rejuvenation and healing from past interactions that may have caused some kind of damage. This aspect overlaps previous functions of planning for future interactions as well as identity functions. Privacy is also a means for confiding, concealing, reserving and keeping information from others, and can be cathartic or allow for recovery. Similar to identity security, privacy can also allow for the use of disapproved consumptions (Pedersen, 1997).

The functions of privacy generally fall into categories of planning how to act, managing interactions, and identity security. Planning how to act and identity building are functions found mostly in isolation and away from interactions. A person desires privacy so he/she has time to think about future interactions or to be free from observation and keep his/her identity secure. Managing social interactions as a function of privacy is most relevant to the current study and

interaction privacy. Shoppers desire to control how and when they will interact with other shoppers, their own established boundaries and limits, and how much access other people have to them. This managing of social interactions helps shoppers determine who they are in these social interactions (Altman, 1975), which is closely aligned to social identity theory (discussed further in following sections). Privacy serves many functions, and the next section discusses different ways in which people try to obtain privacy.

Mechanisms of Privacy

As technology continues to advance, encroachments (known and unknown to the target) to privacy will increase. Similarly, as the human population continues to grow, the opportunities for interaction privacy will decrease. The more people there are, the less control a person has over when, how and with whom interactions will occur (Haag, 1971). As opportunities for privacy decrease, people will use different mechanisms to try to regain control over their interactions. There are several ways listed in literature that people will try to control and regain interaction privacy: verbal, nonverbal, culture, and use of the environment (Altman, 1975; Burgoon et al., 1989; Foddy and Finighan, 1980; Haag, 1971). The use of mechanisms helps to define the self by setting limits and boundaries that create individuality. The ability to regulate interaction controls one's identity to others and expresses how one defines him/herself (Altman, 1975).

Verbal mechanisms take into account the content and structure of what is being communicated. The content includes aspects of conveying differences between the ideal state and achieved state of privacy, verbally stating where the boundaries need to be (Altman, 1975). The structure of what is being said further communicates boundaries through the style, use of tense, word selection and amount, speech speed, pitch, volume, and other aspects of verbal

communication (Altman, 1975; Mahl and Schultze, 1964). The verbal mechanism for achieving privacy can be confrontational (Burgoon et al., 1989) or passive through simply asking to be left alone (Foddy and Finighan, 1980). Nonverbal mechanisms do not use words and include actions to distance or block invaders of privacy (Burgoon et al., 1989). Body language such as limb placement or gestures such as turning one's back signals when privacy boundaries have been crossed and attempt to regain control (Altman, 1975; Foddy and Finighan, 1980).

The use of one's environment, from clothing that signals approachability to using physical barriers, is a major mechanism used in regaining privacy (Altman, 1975; Burgoon et al., 1989; Foddy and Finighan, 1980; Haag, 1971). People can manipulate their environments through physical barriers such as doors to create more privacy against interactions. Altman (1975) states that personal space and territoriality are both part of environmental mechanisms used to reach the ideal state of social interaction. He defines personal space as the area immediately around a person creating an invisible boundary. It is a combination of physical distance and the angle of orientation (face to face, face to side, etc.) a person is to another that can result in withdrawal from a situation or protective reactions (Altman, 1975). Physical space is further defined in the dimensions of privacy section.

Territory, however, is very different from personal space. Territory involves the use or possession of a geographic area that is personalized by the owner. Where personal space follows a person where ever they go, territory is typically defined as a fixed location that does not move. A person has a set claim to the area which if aggressively invaded usually results in defending the space (as opposed to personal space invasion which usually results in fleeing the space). Territory research typically involves gangs who expect a fight if territories are invaded. Passing

through a territory is only allowed if it is done submissively without intent to invade (Altman, 1975). Other definitions of territory are similar and contain elements of possession and defense:

"Desire to possess and occupy a space and will defend against intrusion" (Stea, 1965).

"A space that a person/group uses and defends" (Pastalan, 1970).

"Geographical areas that are personalized or marked and defended from encroachment" (Sommer, 1969).

"Mutually exclusive use of areas" (Altman and Haythron, 1967).

As these definitions of territory involve possession and defense of a space, they do not make sense with a retail shopper. Personal space and invasion of a person's physical boundary fits with how shoppers treat an area in a store. As such, the model proposed later examines physical encroachment and uses theories involving invasion of personal space as opposed to theories of territoriality.

Culture is also used as a mechanism which creates rules and expectations. Privacy and other mechanisms used to create privacy vary by culture. How one culture uses doors as a physical barrier differs from other cultures' environmental manipulations. Similarly, cultures have different meaning for the same type of body language. For example, while brief eye contact in the U.S. is acceptable between strangers, in other cultures it can be highly inappropriate (particularly between opposite genders) or uncomfortable. Cultures also use space differently and have differing norms for acceptable personal space, eye contact, space usage, and other customs (Altman, 1975). These norms and expectations are built over time in culture, and general interaction privacy ideals vary according to these cultural definitions (Foddy and Finighan, 1980).

Privacy norms vary by culture, which creates expectations for people to follow. Environmental cues signal the openness or closedness of individuals. While shoppers can use

environmental factors in a store to regain privacy, they cannot necessarily manipulate the environment (e.g., they can hide behind a wall, but not put a wall up). As this study focuses on non-verbal encroachments to privacy, the outcomes tested will also be nonverbal. Nonverbal privacy invasions are seen as more intimate (Burgoon et al., 1989), so it could be assumed that nonverbal reactions are more intense than verbal. Also, retailers might be more concerned with actual action (nonverbal responses) as opposed to verbal responses to privacy encroachment.

Literature discusses different types of privacy such as information privacy, interaction privacy, physical privacy, and psychological privacy (Burgoon et al., 1989). These different types of privacy help to categorize the different functions privacy serves. Privacy can serve many functions including planning how to act, self identity purposes, and managing social interactions. These functions of interaction privacy mainly serve the purpose of helping a person determine who they are in social interactions (Altman, 1975). People can attempt to achieve their ideal level of privacy through several mechanisms: verbal, nonverbal, one's environment, and culture (Altman, 1975; Burgoon et al., 1989; Foddy and Finighan, 1980; Haag, 1971).

However, while literature has examined these aspects of general privacy, very little has focused on these aspects of interaction privacy specifically. Furthermore, a major limitation is the setting of past work. Privacy has not been examined in a retail setting, and the functions and mechanisms of privacy would be different in a retail setting than places previous researched. While consequences to privacy invasion in other settings would most likely be consequences to the invaded party, invasion of privacy in a retail setting could have consequences to the retailer. The privacy norms and amount of control over managing interactions in a retail setting is different than in other settings. For example, employees are assigned sections in stores to be of service to shoppers but could come across as invading privacy if they watch shoppers too much.

As literature about the functions and mechanisms of interaction privacy is scarce, a qualitative pilot study was conducted to better understand what nonverbal actions encroach upon privacy and the nonverbal ways in which people respond. The qualitative study was intended to set further focus to the study and determine shoppers' interpretations of privacy while in the store, reasons why it was important, what their resulting actions were, and implications to retailers.

Qualitative Pilot Study and Conceptual Model

For this study, twenty four formal qualitative interviews (participant demographics given in Table 2), three focus groups, and a review of the literature were conducted to identify specific variables as suggested by reactance theory (Brehm, 1966). While reactance theory suggests threats, control and reactance as elements in the model, specific variables applicable to interaction privacy needed to be determined. Interviews were semi-structured with an interview guide, but left open ended to further understanding what the participant described as privacy. The interviews were held at a place convenient and acceptable to the participants. Grounded theory interviewing techniques and an interview guide were implemented. The interview guide focused the study on the phenomena of interest, but remained flexible to generate data that allowed theory to develop. The interviews were recorded for their whole duration and fully transcribed for constant comparison analysis and coding for analysis purposes. Examination of the interviews began after the first interview was conducted, as in line with grounded theory analysis (Glaser, 1978). The interviews were exploratory in nature to help determine themes and commonalities and were used as a supplement to extant literature and theory.

The purpose of the interviews was to uncover what privacy means to shoppers in a retail setting, how important privacy is and why it is important, as well as what shoppers do when they cannot achieve adequate levels of privacy. The interviews helped guide the dissertation process

to what aspects of privacy are more important in a retail setting, as well as provided justification of the importance of the topic. The constructs that emerged from this phase of the research are detailed below. Some of the variables can be found in extant literature; thus, following this qualitative section the existing literature is reviewed for each variable/construct where applicable.

Table 2: Qualitative Pilot Study Demographics for Participants

Participant	Name	Age	Gender	Occupation
1	Becky	23	Female	Marketing Coordinator
2	Keni	51	Female	Homemaker
3	Brie	69	Female	Secretary
4	James	48	Male	Auto Technician
5	Lou	51	Male	Simulation Consultant
6	Mike	22	Male	Student
7	Kelly	19	Female	Student
8	Rebecca	21	Female	Student
9	Jim	22	Male	Student
10	Joe	22	Male	Student
11	Al	30	Male	Manager
12	Sally	25	Female	Administrative assistant
13	Tina	30	Female	Sales and Marketing Associate
14	Sam	29	Male	Commercial Liaison
15	Hazel	54	Female	Accountant
16	Leigh	21	Female	Student
17	Elaine	78	Female	Retired
18	Alan	55	Male	Accountant
19	Susan	20	Female	Student
20	Keith	21	Male	Student
21	Reed	50	Male	College Professor
22	Jolene	20	Female	Student
23	Henry	20	Male	Student
24	Katie	19	Female	Student

Intrusions on Privacy

When asked what privacy meant to them while shopping, participants in interviews stated privacy mostly meant not being watched or followed. Shopping in private includes a visual aspect as well as a physical aspect regarding others in the store. There were many examples of this in the interviews; several are below.

> *"I think of privacy with shopping as being able to look at products and compare products and the values without being watched and having the feeling that someone is watching me do my shopping." (10)*

> *"My privacy has been compromised somewhat just because they are actually seeing what I am purchasing." (15)*

> *"I'll go to the smallest store possible where I don't think I'm going to be seen." (19)*

> *"[Privacy to me is…] Not having other people like employees follow you around." (7)*

> *"I don't like people in my personal space." (5)*

According to the interviews, interaction privacy has two main components that can be invaded in a shopping context: physical distance and visibility. These two elements fall under nonverbal invasions as outlined by Burgoon and colleagues, which are more intimate than verbal

invasions and should have a larger effect size (Burgoon et al., 1989). These two aspects of privacy have not been split out before to examine their differences and consequences when invaded. The shopper must be aware of visual and/or physical facets of privacy for them to have an impact, and they must be encroached upon to cause reactance. Invasion of privacy is therefore split in to "physical encroachment" and "visual encroachment" (how much other shoppers/employees can visually see) as depicted by Figure 3 below.

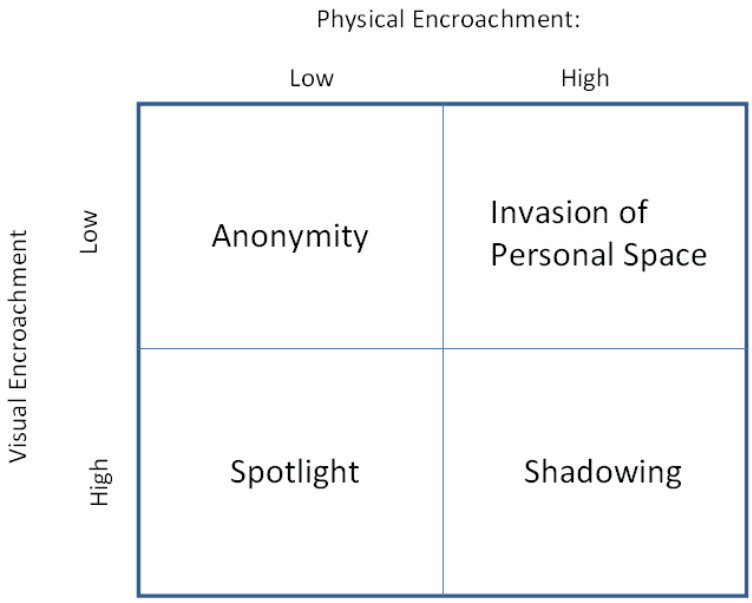


Figure 3: Intrusions on Privacy (repeat)

Interaction privacy can be affected either by the physical presence of another or by the perception of being visually watched by another. When both are low, this is when the shopper feels anonymous. When physical encroachment is high, this is when customers feel their personal space is invaded. When visual encroachment is high, this is similar to the spotlight

effect where people overestimate the degree of attention others are paying to their actions and appearance (Gilovich et al., 2000). When both physical and visual encroachment are high, this can be deemed as shadowing.

Outcomes of Privacy Encroachment

Reactance theory is used to explore the phenomenon of consequences to privacy invasion, of which the theory states a person will react to a threat to behavior in ways to regain lost freedom (Brehm and Brehm, 1981). According to interviews, when privacy is at suboptimal levels, shoppers may try to gain back privacy with such actions as leaving the area, leaving the store, or not buying the intended purchase. Participants of interviews stated they have done all these actions when privacy is at inadequate levels as well as bought smaller package sizes (which are easier to hide), bought items they did not want (like three sizes of the same item of clothing to try on at home and return the two unwanted items), or expressed different feelings of discomfort, anxiety, and dissatisfaction. Quotes illustrating some outcomes are provided below:

"I will walk out of the store. I've done it many times." (5)

"I will just leave- drop the box and I will get out." (11)

"I don't spend as much time looking at the products as I would if I were to have privacy." (13)

"I wouldn't feel comfortable and I would go somewhere else." (16)

While there are many more consequences to privacy invasion than listed in the model (satisfaction, self esteem changes, etc), abandonment and purchase size are focused on in this study due to their importance and relevance to practitioners.

Threats and Pressure

Several mechanisms are at play resulting in consequences to the store when privacy is threatened. Shoppers expressed threats to their identity or feelings of purchase pressure (e.g., feeling pressured to buy an item because of an invasive salesperson). These threats and pressures can result in a loss of control that causes a desire to abandon (e.g., wanting to leave the area or store to regain privacy), smaller purchase size (or no purchase), and higher product returns as a person loses cognitive abilities when privacy is invaded. These consequences to interaction privacy could be explained by reactance theory. When identities are threatened, a person will attempt to reduce the loss and reclaim the threatened identity. The more important identity is to a shopper, the stronger the reactance and attempts to regain what is at stake (Devine, 1989). The interviews further clarified what identities were constrained and the resulting reactance. The constraints most frequently mentioned were those of social identity threat and purchase pressure, as demonstrated by the following quotes:

<u>*Social Identity Threat*</u>*:*

"I think people make the biggest judgments of other people when they are shopping for clothes, so I don't like shopping with people, and I don't like shopping where there's people that I might know, so I prefer to do that. I don't like being watched when I shop." (10)

"We were worried about the cashier judging us" (11)

"I hate to say it, but I'll admit it, worried about what other people would think." (21)

Social identity theory (Major and Sawyer, 2009; Steele, 1997; Steele and Aronson, 1995) helps explain the social identity threats mentioned in interviews. A shopper will want to protect their identity and act in a way causing others to perceive them accordingly. Two kinds of identity threats are discussed further and focused on in this dissertation. Categorization threat is the fear of being mislabeled, and acceptance threat is the fear of being rejected (Branscombe et al., 1999). These two identity threats can be seen by the following quotes:

Categorization Threat:

"You don't want them to have some misconception about you or something." (8)

"Our need to be private and kind of control the way other people see us and we don't want them to have certain impressions about us." (7)

Acceptance Threat:

"There's this sort of community to it…. Everybody seems to be nicer than they would be at a Wal-mart, which is kind of the exact opposite." (21)

"I guess because it's more comfortable. It's like, "they'll understand." (22)

Additionally, participants of the interviews discussed felt purchase pressure when they felt privacy was an issue while shopping:

Purchase Pressure:

"I don't like it. I don't like people trying to talk me into buying something just because I guess I'm easily persuaded into buying things I don't want to buy. I just want to look around and not have somebody in my ear telling me about all these deals."(8)

"Because usually they're trying to, if it's an employee, they're usually trying to sell me something else." (13)

"An employee that their salary is based on a commission on sales and they're trying to push you into buying something. Adding to your purchase for their benefit." (4)

"I like to have my space and I don't like to feel like I have to grab the last shirt off the rack or whatever it is." (16)

"Whereas online you can pick something out, but then come back to it later. You're not pressured to buy it right then." (24)

Each of these identity threats as well as social identity theory will be reviewed later in this chapter as they relate to privacy and purchase pressure.

Legitimacy of Threat

Several moderators can impact the path of interaction privacy to consequences. Participants mentioned in interviews that who (customer versus employee) is encroaching upon their privacy makes a difference. When asked how important privacy is while shopping on a scale of 1-10, participants rated it fairly high. However, employees and other shoppers were distinguished from each other as having differing levels of expected privacy (most shoppers expect more privacy from other customers) as shown in the following quote:

> *"I guess on a scale of 1 to 10 for just a shopper to shopper, I think privacy should be around an 8 or a 9… even employees, it should still be probably about a 6 or a 7."(6)*

Shoppers expect more privacy from customers as they have less reason to interact with each other or see each others' purchases. An employee is seen as providing a service in the store, and part of that job is encroaching upon privacy a little more than other shoppers should. This means when another customer encroaches on their privacy, the person will react more strongly than when an employee encroaches in some way. Reactance theory can help explain the difference between customer and employee invasions of privacy as reactance can be reduced if a legitimate reason justifies the threatening of a behavior (like airport security) (Devine, 1989). However, it could also be argued that other shoppers have legitimate reasons for encroaching on privacy as they have to get to certain items, use shoppers as comparison, or have just as much right to be in the store as any other shopper. Therefore, this dissertation will examine legitimacy of threat in the model for an employee only. Using only the employee will focus legitimacy to be either a justified reason or not, rather than decrease control and effects of legitimacy by having mixed opinions from shoppers as to who is more legitimate: a shopper or an employee.

Participants could have differing views on who is more legitimate, and effects of legitimacy might be lost. Additionally, an employee can be trained by a manager to give optimal levels of privacy and therefore has more marketing implications than another shopper.

Conceptual Model

These variables taken from interviews and literature can be seen in relationship together in the proposed model (Figure 4) as follows:

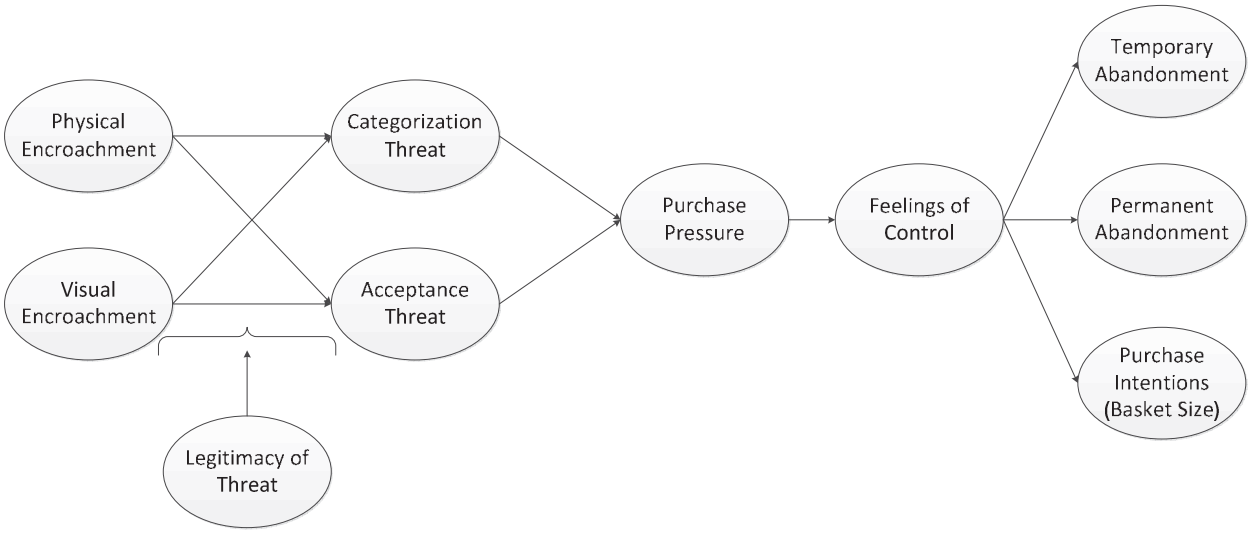


Figure 4: Conceptual Model (repeat)

Privacy encroachments along visual and physical dimensions lead to threats to the identity. These threats then impact purchase pressure, which causes an individual to realize control has been lost, resulting in reactance. The reactions examined in this dissertation are that

of abandonment (temporary or permanent) and purchase intentions. The reason for encroaching (the legitimacy of the threat) is expected to change the strength of these relationships.

Literature Review

The qualitative pilot study helped to focus the features of privacy most relevant to interaction privacy in a retail context. Interviews were analyzed to determine categories important to the model as additionally guided by reactance theory. The following sections discuss the theories used to build the model and form hypotheses and examine the categories and constructs listed in the model as discussed in extant literature.

Theoretical Foundations

A couple of theories help to set the basis for the hypotheses. Reactance theory best explains the entire model and is the primary theory used for this research. However, social identity theory helps to support how privacy impacts threats, guiding individual hypotheses more fully as well as directionality. Social identity theory is reviewed after reactance theory.

Reactance Theory

Psychological reactance is a motivational state that is aroused by the threatening of a behavioral freedom. The reactance is directed in attempts to reduce the loss of and reclaim the threatened behavior. An individual must know that the threatened behavior is a feasible option to them if it weren't being threatened in order for reactance to occur (Brehm, 1966; Brehm and Brehm, 1981). For example, reactance theory has been used to explain how a consumer might be more motivated to obtain a product that is out of stock, no longer produced, or that requires a long line to obtain (Brehm and Brehm, 1981; Clee and Wicklund, 1980). Research also shows

that customers react more strongly in a negative way to hard sells as opposed to a soft sell (Brehm and Brehm, 1981).

Reactance theory starts with the basis of specific freedoms and behaviors. A person must know that an action is a possibility to them. Freedoms include an action itself, how the act is carried out, when the act occurs, or even control of the outcomes. Freedoms vary in importance depending upon the value a freedom holds to an individual or the ability to satisfy a need. The importance of the freedom determines the level and type of reactance. If a person feels forced to give up a freedom of low importance, they will most likely react with over compliance. However, more important freedoms will garner strong resistance and possibly even boomerang effects of attitudes and actions opposite of the threat's intent (Brehm and Brehm, 1981).

A threat to a freedom is any event that causes a behavior to be more difficult to carry out. Threats are usually external from a social pressure or reduction in option choice, but can be an internal force requiring a choice as well. Many factors can increase the perceptions of a threat coming from a person, such as social power, prestige, and expertness of a person who is threatening a behavior. Power figures have the ability to punish or reward behavior or cause reactance through statements. Threats can come from impersonal sources and can be implied by observing others who have their own freedom threatened and believing that the same threat could happen to oneself (Brehm and Brehm, 1981).

Once a threat to freedom is realized, reactance will occur. The reactance is a motivational state set about to regain the lost or threatened behavior. The magnitude of the reactance depends on how important the threatened behavior is, how much of the behavior(s) is being threatened, and how great the threat. The greater the threat to a behavior, the more important regaining that behavior becomes. Reactance may also increase if a person feels that a current threat implies

future threats to the freedom. If a particular threat is too small on its own to garner reactance, it may cause reactance if combined with other events or threats. The magnitude of reactance can also be increased if many freedoms are threatened at the same time, causing an overwhelming feeling of threats which magnifies reactance (Brehm and Brehm, 1981).

A person other than the one whose freedom was threatened can restore the freedom for another. An external party can act in such a way that the threatened individual regains their freedom. This could be directly or through the person regaining their own threatened freedom, implying restoration for another threatened individual. This restoration may occur with or without the knowledge of the source of the threat (Brehm and Brehm, 1981).

People not only want to regain lost or threatened behaviors, but often times threats cause a less attractive option to be more attractive (Brehm and Brehm, 1981). For example, if an individual has the options of actions A and B, but B is somehow threatened and now less of a choice, the individual will attempt to regain and act out option B, even if A is the preferred action (Devine, 1989). In terms of attitudes, if an attempt is being made to sway an individual in to a particular attitude (reducing free choice of attitude), the individual will most likely form the opposite attitude (the attitude choice that was most threatened) and influence is reduced. An individual may even harbor hostile and aggressive feelings or antisocial behavior as a form of reactance to threatened behavior. However, reactance may be reduced if a legitimate reason justifies the threatening of a behavior (like airport security) (Brehm, 1966; Devine, 1989).

Control is taken in to consideration in different parts of reactance theory. On one end, control is seen as a freedom, and the reactance would be to regain control. On the other end, it is a person's perception of their controllability on the outcomes. If a person believes that they cannot control an outcome, reactance decreases. Some threats are so great or a person realizes

they cannot regain the behavior that helplessness sets in and reactance is reduced (Brehm and Brehm, 1981).

In terms of retail shopping privacy, when privacy impacts identity threats, shoppers are likely to react in a way to lessen threats to identity. The more important identity is to an individual and the greater the threat, the stronger the reactance and attempts to regain it. Many freedoms are threatened when privacy is threatened, and shoppers are likely to react in several ways to regain freedoms they deem important. Consumers want ALL actions available to them: wanting the employee available if needed, but not overstepping boundaries; wanting consumers around if they want to be social, but keeping control on how interactions occur.

Social Identity Theory

Social identity theory originates from social psychology and helps to explain group and intergroup processes and behavior (Hogg et al., 1995). A person adopts a certain identity associated with a group so that when the identity becomes salient, the person behaves in a way stereotypical to group norms associated with that identity (Hogg, 2003; Hogg et al., 1995; Turner et al., 1979). A person will adopt stereotypical group behaviors and thoughts in attempts to be accepted by a group that a person feels defines who, or part of who, they are (Hogg et al., 1995). The more a person identifies with a particular group, then the more likely that person's behaviors will match stereotypical group norms (Hogg, 2003). Therefore, the more important an identity is to a person, the more important it will be for members of that group to see the person acting in accordance to the identity. A person will ensure control over their identity by adopting acceptable group behavior even if it conflicts with personally defining values (Devine, 1989). People have multiple social identities and groups with which they identify. An identity becomes

salient depending upon situation and context. Therefore, behavior of an individual is dependent upon the interaction of the person and their current environment (Turner et al., 1979).

In regards to shopping, identities are created and refined in retail settings. Centers take on a personification of an identity that becomes a collective assertion for those who shop there (Miller, Jackson, Thrift, Holbrook, and Rowlands, 1998). Therefore, shoppers will see themselves as similar to other shoppers at the same store.

One facet driving privacy that may come into play in a retail setting is embarrassment caused by others being aware (real or imagined) of one's selections and purchases (Dahl, Manchanda, and Argo, 2001) and perceiving those purchases to not align with a desired social identity (Miller and Leary, 1992). However, the more familiar a person is with a purchase that could cause embarrassment, the less embarrassed they will be (Dahl et al., 2001), but the triggering of embarrassment as an emotion could affect customer satisfaction (Babin and Darden, 1996) and repatronage intentions (Grace, 2009). Different causes for embarrassment (self, others, or retailer) create a difference in the level and reaction to the embarrassment. Consumers embarrassed by the retailer will not re-patronize the store, and one of the most embarrassing stimuli is the violation of privacy (Grace, 2009).

Shoppers will be concerned with their identity being misrepresented based on what they are buying. Privacy becomes an important aspect of the shopping trip as different roles are invoked and the shopper makes attempts to protect those identities. Shoppers use the store image to select a store that matches their preferences (Martineau, 1958), causing shoppers in a single store to likely be from the same community and share similarities and social groups. Therefore, patrons will want to conform to the perceived normal behaviors of shoppers in a particular store, attempting to control their image as perceived by others (Jenkins, 2000).

Social identity theory also lists several identity threats. As social identity threats are a construct in the model, this portion of social identity theory will be discussed later as a freedom constraint included in the model.

Intrusions on Privacy

Many of the definitions, functions, and mechanisms of privacy refer to aspects of visual and physical space, as supported by the qualitative research. The qualitative interviews separated the two aspects as different parts of privacy that act separately and have different consequences. Therefore, the current research will examine both encroachments to physical space as well as visual invasions. Studies will examine the pieces when both are low (anonymity), when physical encroachment is high and visual is low (personal space), when physical encroachment is low and visual is high (spotlight), as well as when both are high (shadowing). Figure 1 shows visual and physical encroachment on low/high intrusions, creating the four quadrants to interaction privacy studied in this dissertation.

Anonymity

Anonymity is being in a public place without another person encroaching visually upon someone or upon their physical space. It is when a person can get lost in a crowd or be in public without being recognized (Westin, 1970). Figure 2 shows intrusions to interaction privacy along two aspects: physical space and visual encroachment. Anonymity is in the low physical and low visual quadrant. It is here that one is expected to have the greatest control of interaction privacy. Environmental psychology defines several different types of privacy, all of which fall in to the anonymity category. These types of privacy are solitude, intimacy, reserve, and isolation (Pedersen, 1997; Westin, 1970).

The first four privacy types were established by Westin (1970). Solitude is the most extreme privacy situation where a person is completely alone and unobservable to others. Intimacy allows for others to be present in small groups and separate from groups. Reserve is a barrier created psychologically to prohibit invasion (Westin, 1970). Isolation was an additional factor added later by Pedersen (1997) which deals with a person using space and distance to create privacy by removing themself from others. In these definitions of privacy, the person does not feel their physical space is invaded nor do they feel that visual privacy has been violated.

Literature examines several definitions of anonymity, all revolving around being among others and not being identifiable (Pfitzmann and Kohntopp, 2009). Studies have shown that anonymity is useful in protecting one's identity, and being anonymous does increase feelings of privacy (Reicher, 1984). Research also shows that as anonymity increases, so does the likelihood of group behavior. Social identities become more salient when a person becomes anonymous in a crowd and behavior regulation increases as does compliance with group behavior (Neal, 1993; Reicher, 1984).

Invasion of personal space

Personal space is defined several ways in literature, but all regard it as an invisible boundary different than territory. Where territory is a fixed location, personal space is seen as a part of a person that goes with them wherever they go. The boundaries of personal space can be flexible according to situation and context (Altman, 1975). Personal space definitions include an unseen boundary around a person restricted from outsiders (Sommer, 1969); invisible area directly surrounding a person that combines aspects of distance and angle of body orientation (Altman, 1975); and the area around a person that if invaded causes feelings of encroachment that leads to discomfort (Goffman, 1971). Intrusion to personal space has sometimes included

invasion through visual contact seen as an intrusive look (Altman, 1975), and there can be several kinds of reactions to personal space invasion. However, this research splits visual invasion out from physical invasion as there are differences in reactions from the two.

Unpleasant reactions are experienced when personal space is invaded, leading to overall feelings of displeasure (Evans and Wener, 2007; Goffman, 1971). One of the more common reactions to personal space invasion is for the person who feels invaded to leave the area or situation and regain their space (Altman, 1975; Barash, 1973; Felipe and Sommer, 1966; Goffman, 1971; McDowell, 1972; Patterson, Mullens, and Romano, 1971) and avoid possible intrusions in the future (Dean, Willis, and La Rocco, 1976). Animals even maintain a regular distance between themselves that if encroached upon results in escape. However, if escape is not possible, animals will fight back (Hediger, 1950). Humans too will show signs of aggression if their personal space is invaded, although that is a less likely reaction than escape (Altman, 1975; Dean et al., 1976). Invasion also causes anxiety and stress (Altman, 1975; Bergman, 1971) as evident through palm sweat (Bergman, 1971) and higher galvanic skin responses (GSR) revealing higher arousal and discomfort to the encroachment (McBride, King, and James, 1965).

Several factors about the invader or invaded impact the resulting reaction, such as the intruder's social status, sex, age (Altman, 1975), race (Dean et al., 1976), religious perceptions (Young and Guile, 1987) and angle of encroachment (front versus side) (McBride et al., 1965). Studies show that the age of a person invading a space is a more important factor than sex and race, with a child of 10 years old eliciting the same response as an adult would (Dean et al., 1976; Fry and Willis, 1971). Several studies say a female will leave an invaded space quicker than a male (Ahmed, 1979; Ahmed and d'Astour, 2008; Polit and Lafrance, 1977) and a male invader causes quicker flight than a female invader (Ahmed, 1979; SAhmed and d'Astour, 2008;

Rustemli, 1988). However, other studies have found contradicting results that sex of the invader (Polit and Lafrance, 1977) or invaded does not affect the response (Dean et al., 1976). A frontal space encroachment causes a greater response than encroachments from the side (McBride et al., 1965) as it is more a more obvious invasion, similar to greater reactions of invasion when verbal communication is part of the physical encroachment (Polit and Lafrance, 1977). Personal space research deems physical distance invasion as a more prominent invasion than the number of others around (Evans and Wener, 2007).

Much research examining the invasion of personal space took place in a library setting and timed how long it would take for a person whose space was invaded to leave. The closer an outsider got to another person's space, the quicker they would leave their seat in the library (Barash, 1973; Felipe and Sommer, 1966; McDowell, 1972; Patterson et al., 1971). Middlemist and colleagues (1976) examined personal space invasion in the context of a bathroom. Confederates were assigned to stand next to a subject at a urinal without looking at them or assigned to be absent from the situation. Participants who had the confederate present had delayed and decreased consistency in urination. The study takes the change in the physiological process as a sign of induced arousal as one must be relaxed for normal urination. This suggests that a mediator between personal space and reactions is that of emotional arousal (Middlemist, Knowles, and Matter, 1976).

A different experiment with 53 subjects tested three conditions: no spatial manipulation, a one-time, set-distance invasion of personal space, and a condition where the confederate moved once toward the subject and then a second time even closer. The results demonstrate that subjects showed increased signs of stress the closer and more times a confederate moved towards them (Kanaga, 1981). A field experiment of 480 adults showed that a religious confederate

(dressed as a clergy) nulls reactions to personal space invasion, but a low status invader will cause a quicker exit, particularly from women (Young and Guile, 1987).

Invasions can change the way a person feels about the invader. A lab experiment of those invaded said they felt discomfort, but also a great majority of them said something bothered them about the invader (mostly being that the invader was too close). Interestingly, participants who were invaded in this study listed more ways in which the confederate invader differed from them (as opposed to fewer ways listed by a confederate who did not invade personal space). A significant amount of differences listed dealt with nonphysical aspects, such as the invader being extroverted and confident while increasing feelings of discomfort for the invaded participant. This study also showed that a person whose personal space is invaded will give a smaller distance for their personal space preference than a person whose space was not invaded (Schneiderman and Ewens, 1971).

Spotlight

Interaction privacy can also be invaded when a person feels watched (Benn, 1971). The spotlight effect is a phenomenon in which a person perceives being watched more than is actually occurring (Gilovich et al., 2000). Studies show that people also overestimate how much of their internal state is detectable by others when watched (Gilovich and Savitsky, 1999), as well as the extent to which their failures and accomplishments are noted by others and variability in actions. This overestimation is attributed to feelings of social anxiety and regrets to act other ways for fear of being noticed (Gilovich, Kruger, and Medvec, 2002).

Gazing serves several functions such as providing information about others regulating interaction, expressing feelings such as liking and intimacy, the facilitation of goal completion, and exertion of social control through persuasion, dominance, deception, and expressing threats

(Harper, Wiens, and Matarazoo, 1978; Kleinke, 1986). In group conversations, a long gaze indicates an invitation for another speaker signaling the yielding of the current speaker (Kalma, 1992). Visual contact is one of the most important methods for gauging another person's reactions (Argyle and Dean, 1965).

There are several types of eye contact and gazing. There is one-way gazing at a person's eyes or face and mutual gazing at both the face and eyes. There can be an avoidance of visual contact with or without intention (Harper et al., 1978) and staring where a person continues to look regardless of the target's behavior (Ellsworth, Carlsmith, and Henson, 1972). Most research, however, does not distinguish between the different types of visual contact (Harper et al., 1978).

Different types of visual contact result in different responses depending upon the motive of the source (Harper et al., 1978). For example, a steady and direct gaze usually leads up to some sort of attack in apes. The target of such a gaze usually escapes or submits to the gaze source, only resorting to aggression if necessary. Aggression also seems to be signaled when a direct gaze is shared between humans (Ellsworth et al., 1972), but typically leaving or complying is the common response (Harper et al., 1978). Less direct visual contact can facilitate cooperation and communication (Harper et al., 1978). When communication is positive, more eye contact causes positive evaluations of the communication. Oppositely, when communication between parties is negative in nature, frequent eye contact causes further negative evaluations (Ellsworth and Carlsmith, 1968). A study examining the impact of visual encroachment by Ellsworth and colleagues (1972) had confederates stare with a direct gaze at participants' faces for certain lengths of time. Confederates kept expressionless faces (Ellsworth et al., 1972). This type of gaze was used for manipulations by confederates for Study 2 as outlined in Chapter 3.

The target of a gaze is more tolerant of visual contact when the source is considered attractive, and a person will gaze more at a person who has the ability to provide approval. Gazing frequency and duration also depends upon the emotional state of the source. Gazing occurs less when people are anxious, depressed or embarrassed (particularly when revealing personal information) and more when a person is excited (Harper et al., 1978).

Studies examining eye contact have not been around that long, as eye contact did not appear in psychology references until 1966 (Kleinke, 1986). However, a majority of research regarding visual contact examines one of three categories: animals (particularly apes and dogs) (Hare and Tomasello, 2005; Kaplan and Rogers, 2002; Ledbetter and Basen, 1982), babies and infant development (*Early Social Cognition*, 1999; McGehee, 1983; Nadel, Carchon, Kervella, Marcelli, and Reserbat-Plantley, 1999), and romantic relations and intimacy (Glasgow and Arkowitz, 1975; Kleinke and Taylor, 1991; Theyer and Schiff, 1977). Research not included in these three categories typically examines gazing through one-way mirrors with experimenters recording gaze duration and frequency. While it is not easy for experimenters to determine if gaze is to the eyes or face, there is usually high reliability among them when the gaze isn't too short or the subjects are not too far away (Harper et al., 1978).

One study manipulated gazing by having the experimenter stare or not stare at participants waiting to cross an intersection. The researcher then recorded how fast a person crossed the intersection when the light changed. In line with research, subjects crossed the intersection quicker if they had been stared at. The study did not show a main effect of sex or duration of the stare (Ellsworth et al., 1972). Another study showed the power of the spotlight effect. Subjects were asked to wear a shirt with either an embarrassing or flattering image, and they overestimated how many other observers could recall the image. Similarly, participants

overestimated how many group participants would note an error or positive comment made during a group setting. This study illustrates how people are self-involved with their own behavior and therefore cannot adequately estimate how much others notice their own behavior, both positive and negative (Gilovich et al., 2000).

When physical encroachment is low, as in the case of low density of others, consumers can feel a heightened awareness of visual encroachment. Employees, and other consumers, can more easily see a consumer when there are fewer others around (Uhrich and Luck, 2012), making the consumer an easier visual target in low crowding situations. Consumers can also experience apprehension when evaluating purchases (Buss, 1980) and a reduction in cognitive resources, making retail decisions more difficult (Uhrich and Luck, 2012), possibly as consequences to being self conscious (Fenigstein and Vanable, 1992; Keller and Pfattheicher, 2011) and nervous (Ballantine, Jack, and Parsons, 2010) when being watched. These reactions can be explained through social identity theory, as shoppers become aware of the visual encroachment of others and the desire to protect their identity.

Shadowing

To date, little research specifically examines the impact of visual and physical encroachment together. Most of the research discussed previously regarding physical and visual encroachment did not take into account the other dimension. One exception shows that as physical distance decreases, so does visual contact. A person will make less eye contact in frequency and duration the closer they are to another, especially if the people are of opposite sex. In this particular study, the researchers found people were more likely to stand closer to a person whose eyes were shut rather than open and able to make visual contact (Argyle and Dean, 1965).

Another study found similar results showing that visual encroachment decreased over length of time and as participants became closer to another person (Coutts and Schneider, 1975).

Privacy can be regulated by shielding oneself from physical and visual invasion to regain control and reduce negative effects of privacy invasion (Robson, 2008). A study regarding seating arrangements showed that when in a circle, those physically closest to the speaker are least likely to respond where those furthest away with better eye contact are more likely to respond. The other members of the circle who are closest to the speaker are not fully facing the speaker and therefore less likely to feel pressure to respond, also suggesting that visual encroachment has a stronger impact for response than physical. Therefore, people chose seats with the intent of engaging in interaction or withdrawing, giving themselves more control over interaction privacy (Koneya, 1977).

However, one study showed conflicting results of spatial location being unrelated to looking behavior when the participants were conversing. This article states based on their findings that gazing behavior is not related to physical location. However, this study examines participants who are actively engaged in conversation. Visual contact is a social norm when listening and/or speaking (Slagter, 1997). Most literature regarding physical and visual encroachment suggests that as people get physically closer together, the normal reaction is to decrease visual contact. However, this literature does not examine the impact of when that norm is violated and visual and physical privacy are both encroached. For the majority of extant literature, physical space research does not typically control for visual encroachment and visual encroachment research does not control for physical space. As such, literature regarding one aspect of privacy may be capturing aspects of the other dimension. The current proposed study will greatly contribute to what is known regarding interaction privacy by splitting the physical

aspect from the visual aspect to examine each as its own phenomena as well as examining the interaction of the two.

Threats and Pressure

According to reactance theory, as encroachments to privacy occur, constraints to freedom are felt. Qualitative interviews show threats to identity constrain a person's freedom to behave how they normally would and feelings of pressure to buy. The interviews and literature lead to privacy impacting social identity threats and purchase pressure.

Social Identity Threat

Identity threats can come in two forms: first as personal identity threat, which is a threat to a person's character or ability, and second as social identity threat, which is a threat to group membership (Major and Sawyer, 2009). Social identities are more likely than personal identities to influence behavior (Turner et al., 2006). Social identity threat is further defined as occurring when a person perceives an unflattering (individual or group) status that is confirmed by their actions and results in psychological discomfort (Steele, 1997; Steele and Aronson, 1995).

According to social identity theory, threats to identity can cause a person to escape the situation, submit, or can lead to aggression, although the tendency is withdrawal (Crocker and Garcia, 2009; Stephan, Ybarra, and Morrison, 2009). Research tends to focus on the flight response rather the aggressive reaction (Crocker and Garcia, 2009). Other responses to identity threat include, but are not limited to, negotiation, deceptive acts (lying, cheating, stealing), and retaliation (Stephan et al., 2009). Social identity threat can result in cognitive consequences as well, such as performance concerns, disengagement (Aronson and McGlone, 2009), disruptions to thinking and behavior, and also self-regulation (Crocker and Garcia, 2009).

Social identity theory lists four types of threats: categorization, distinctiveness, threats to value, and social acceptance. Categorization threat is when a person is worried about being prejudged based on membership to a group and will resist being categorized or have defensive reactions (Branscombe et al., 1999). This suggests that a consumer may act in resistance to avoid being judged, which could include smaller purchases that can be hidden or no purchases at all. Distinctiveness threat involves not having a distinct identity which provides a basis for action. People are less willing to identify with a majority group than with the minority (Branscombe et al., 1999). Threats to the value of social identity happen when a person feels they are being discriminated against based on their associated identity. A person may then either embrace the identity that is being discriminated against (i.e. yes, I'm buying this because I belong to this group and you're wrong to judge) or the person might react with other actions opposite the identity (yes, I'm buying this, but it doesn't mean I'm bad because look at all this other good stuff I'm buying). The last threat to social identity is acceptance threat. A person in this type of threat will feel a fear of not receiving respect or of being rejected (Branscombe et al., 1999). Identity conflict occurs in this type of social identity threat, and a person will act in accordance to the preferred identity as a form of impression management (Branscombe et al., 1999; Turner et al., 1987). A person who feels identity conflict with a purchase may not make a purchase or feel post-purchase cognitive dissonance. Also, disloyalty can occur if a person feels disrespected or rejected (Branscombe et al., 1999), which may transfer to disloyalty to the store.

This dissertation will focus on categorization and acceptance threat. As the qualitative pilot study showed, these two types of threats are more prominent in a retail setting as compared to distinctiveness and value of social identity threats. Additionally, by definition, distinctiveness and value of social identity are more macro level threats to the group as a whole. Categorization

and acceptance threats are more individual threats to the relationship between one person and their group identity (Branscombe et al., 1999). Categorization and acceptance threats are more common in a retail setting and more personally felt.

Most studies that research social identity threat manipulate the construct rather than measure felt threat. These studies manipulate threat to a social identity and then measure feelings of social identity through a scale and compare feelings across groups (the threatened group and the not threatened group), as opposed to measuring feelings of felt threat (Branscombe and Wann, 1994; Jetten, Postmes, and McAuliffe, 2002; Ojala and Nesdale, 2004; Scheepers and Ellemers, 2005; Voci, 2006). Literature that does measure perceived threat measures a very specific aspect, such as feelings of threat towards their ethnic group (Ethier and Deaux, 1990), rather than general feelings of identity threat.

Purchase Pressure

Purchase pressure is an increase in feelings to buy a product or particular brand (Warshaw, 1980). This felt need can come from one's own desire or can be felt as pressure from others in the form of employees or other shoppers (Warshaw, 1980). Pressure can also come from other marketing forces as it is a function of promotion and advertising, distribution share, and price advantages of a product (Whitaker, 1978). One article suggests that purchase pressure can only come from others as it is not felt when browsing and shopping online (Coupland, Tekchandaney, Rangaswamy, and Simpson, 2003). This decline in purchase pressure can be seen online in the high level of cart abandonment rates. Online shoppers do not feel the pressure to purchase what is in their online cart as there are no employees regulating shopping behavior. While purchasing in a physical environment happens immediately after salesperson influence and pressure, there is less cost felt when delaying an online purchase partially due to employee

absence (Kucuk and Maddux, 2010). Purchase pressure can also come from group identity in the form of conforming to norms. Employees typically apply purchase pressure to either buy a particular brand (Warshaw, 1980; Whitaker, 1978) or an unintended product, whereas other shoppers typically lead to pressure of a particular brand (Warshaw, 1980).

Purchasing pressure depends on situation and context and can change over time from purchase to purchase (Whitaker, 1978). Warshaw (1980) revised Fishbein's model of intent to purchase which states that attitude leads to behavioral intent that without interference will lead to action of purchase (Fishbein and Ajzen, 1975). Warshaw's model examines intent with aspects of relative purchasability, ability for product use to satisfy needs, and the felt pressure resulting from the presence of others to buy a particular brand over other options. The three antecedents in the updated model account for 63% of variance in intention as compared to 38% explained variance in Fishbein's model. The model stayed relatively stable across product differences in price, frequency of purchase, and motivation to buy (Warshaw, 1980). The large variance explained when purchase pressure is accounted for in the model shows the importance of purchase pressure on behavioral intentions.

Feelings of Control

Reactance theory describes control as an equivalent of freedom (Brehm and Brehm, 1981) or the belief that a person has influence over outcomes (Brehm, 1993). In the Worhman and Brehm model of reactance theory, freedom is stated to be the same as control expectations (Brehm and Brehm, 1981). Threatening a specific freedom is reducing control for that person to behave however they desire (Brehm, 1993). Attempts to regain control are seen as reactance to threats against control. As feelings of control continue to decrease, reactance to regain it will

increase (unless a person believes control is completely lost and becomes helpless instead). Helplessness occurs when a person believes a threat to be too great for freedom and control to be regained. If uncontrollability is habitually reinforced (as in the case of a child never being able to get out cleaning their room), then helplessness will continue to increase as reactance is reduced (Brehm and Brehm, 1981).

Whenever a person believes their freedom has been threatened or the potential for a future threat exists, the person will react to regain control of their freedom (Engs and Hanson, 1989). The person must realize control has been lost before they can make attempts to recover it. As a freedom is threatened, the loss of control is realized, and reactance occurs (Brehm and Brehm, 1981). As freedom constraints increase, general feelings of control decrease.

Consumers can react in several ways to undesired influence from employees resulting in less feelings of control. Consumers worry that they will be "pounced upon" and observed by sales personnel (Uhrich and Luck, 2012), which is high encroachment. This may be problematic to consumers as they want to be in control of their environment; one way of feeling in control is by showing competence over the environment. However, employees who engage in contact with the consumer also desire to be in control, resulting in a discrepancy between employee and consumer regarding control of the situation (Bateson, 2000). If a customer feels that they might be losing control, they will at first attempt to regain it (Chang, 2006), possibly by retaliating with actions opposite to the employee's goals (Szlemko, Benfield, Bell, Deffenbacher, and Troup, 2008) such as not purchasing a product or being slow. If the attempt to regain control fails, consumers may then feel helpless (Chang, 2006) and could possibly yield to the employee who has invaded their privacy (Szlemko et al., 2008). Yielding to the employee could include the consumer purchasing an item they don't want due to feelings of obligation (Uhrich and Luck,

2012). Invasion of a consumer's space might also result in the abandoning of the area and possibly avoiding the area in the future (Szlemko et al., 2008).

Reactance

Once a threat causes a behavior to be limited, lost feelings of control are realized and then reactance occurs. A person will attempt to limit the threat and regain freedom and control (Brehm and Brehm, 1981). According to qualitative interviews and extant literature, there are many ways in which a shopper will react against threats to privacy, such as decreased satisfaction and trust in the store. Three reactance options are discussed for this study as they have higher impact to the store: temporary or permanent abandonment of an area or store, and purchase intentions.

Abandonment

Literature streams regarding personal space, being watched, and identities all suggest that when a person is encroached upon, one of the most common reactions is for the person to flee. In personal space literature, an invasion causes anxiety and stress in response to which a person most often flees the situation to regain privacy (Altman, 1975). A person will become self-conscious and nervous while looking at and interacting with products in a store if they feel they are being watched by employees (Ballantine et al., 2010; Buss, 1980). Being watched interferes with cognitive skills and abilities (Conty, Gimmig, Belletier, George, and Huguet, 2010) as well as increases feelings of self consciousness (Fenigstein and Vanable, 1992), which could impact identities and roles. In identity literature, identities are threatened when two people with different identities interact. The interaction threatens the image of both participants, with the threat increasing as differences increase. Threats to identity result in a flight or fight reaction, with the

tendency being towards flight (Crocker and Garcia, 2009). A shopper can flee the shopping zone or store with temporary or permanent abandonment. If a shopper temporarily abandons the zone to return later, they might actually increase their purchase intentions as they spend time in other parts of the store waiting for a particular zone to increase in privacy. However, permanent abandonment of the zone will be shown through reduced purchase intentions, and permanent abandonment of the store will result in no purchases.

These reactions are in line with reactance theory. The easiest and quickest way for a shopper to recover freedoms and control is to leave the situation to regain physical and visual space. It is human nature to want to have some sort of control over personal area (Cohen, 1976) that when encroached upon could cause the shopper to leave (Brown and Altman, 1983). By leaving the area of store, a person is eliminating the threat and therefore regaining behavioral freedom and control.

Purchase Intentions

Threats can also cause a refusal to purchase a product at all. Personal selling and mass media attempts to sway shopper opinions and actions can result in opposite attitudes of the influencing communication and result in smaller basket size (Clee and Wicklund, 1980). A study using reactance theory to test the impact of purchase pressure on sales found strong support for the boomerang effect. The boomerang effect occurs when a person does an action opposite or not aligned with what the threat is attempting to control (Clee and Wicklund, 1980). In the study, a female experimenter acted the part of a sales representative manipulating purchase pressure. She either told participants that she did receive a commission on sales or she did not and made positive comments to the participants regarding the look of the sunglasses. If participants believed her to have a vested interest in the sale (she made commission), then the positive

comments were seen with higher purchase pressure, sunglasses were rated less favorably, and a purchase was less likely to be made (Wicklund, Slattum, and Solomon, 1970). Similar results were seen in a study using hard sell and soft sell tactics. Participants rated two glassware patterns and then were persuaded with either hard selling or soft selling tactics to buy the less preferred pattern. Soft selling tactics were seen as less threatening and resulted in less reactance with significantly many more people switching preferences in the soft sell than in the hard sell. However, this only remained true if the preferences of the patterns were close (low preference/importance). When there was a larger difference between ratings of the two patterns (high preference), then neither selling tactic changed the preference (Reizenstein, 1970).

Moderator: Legitimacy of Threat

Qualitative interviews and extant literature suggest that there are differences in encroachment depending upon who is doing the encroaching. Reactance theory discusses aspects of legitimacy of threat diminishing reactance. This section further reviews the literature on legitimacy of threat.

Reactance theory states that if a threat to behavior has a legitimate or justified reason, then reactance will be reduced (Brehm, 1966; Devine, 1989). For example, recent threats to privacy in airport security have been justified by raised concern over terrorism and unsafe flying conditions. This legitimization has reduced, but not eliminated, reactance to invasive screenings. When a threat comes with a logical reason, then a person will also believe that future threats will not happen for illegitimate reasons. If a person believes that a threat has no substantial reason to occur, reactance will be greater because of the implication of threats to a larger set of behaviors since no reason is necessary for a threat to occur (Brehm, 1966). The reaction and restoration of behavior (boomerang effect, leaving the situation, etc.) in response to a threat will also vary

according to offered reasons for the threat to exist (Brehm, 1966; Brehm and Brehm, 1981; Quick and Kim, 2009).

Several studies have looked at how justifiable reasons for threats can reduce reactance. The quality of an argument can offer legitimate reasons and alleviate reactance because the target has reduced perceptions of the threat's intrusiveness. A weak argument, however, will cause greater reactance because a person can contest it. Marketing communications have also seen the impact of illegitimate reasons for using a person's personal information. If a company can offer sound reasoning for personal information being used to customize offerings, than reactance will be reduced. However, reactance to collection and utilization of information will increase if the company poorly justifies why and how information is used (Dillard and Shen, 2005; Rains and Turner, 2007). The recipients of marketing communication will have negative responses in direct correlation with justification of reasons for the message (Brehm, 1966; Janis and Mann, 1977). Firms that can show the appropriateness of offers by justifying use of distinctive and personal information reduce reactance and encourage further relationships with the company (Barnett White, Zahay, Thorgjornsen, and Shavitt, 2008).

Research Hypotheses

Physical Encroachment → Categorization Threat

Using the literature and applicable theories, eleven hypotheses are proposed (see Table 3 for a summary). Social identity theory in combination with reactance theory lead to the first four hypotheses. There are four identity threats listed in literature. In terms of a retail setting, categorization and acceptance threat will be the most prominent threats felt when privacy is encroached. Distinctiveness and value of social identity are more macro level threats to the group as a whole. Categorization and acceptance threats are more individual threats to the relationship

between one person and their group identity. Categorization threat occurs when a person is placed into a category where he/she does not belong or when the act of categorization is irrelevant (e.g., being categorized as a woman in a business setting) (Branscombe et al,, 1999). The closer another person is, the more information is available, and they are less likely to miscategorize the target. It also becomes more relevant to place someone into a category the closer they are. Physical markers, which are more easily identified when two people are physically closer together, affirm categorizations. Therefore, it is proposed that the closer a person is physically, the more information available to that person and the more likely they are to accurately categorize (Elsbach, 2003), or more formally hypothesis 1a:

H1a: Higher levels of physical encroachment have a negative relationship to categorization threat.[1]

Physical Encroachment → Acceptance Threat

Acceptance threat deals with the fear of being rejected (Branscombe et al., 1999). Social identity theory helps to explain the influence of physical encroachment on feelings of threat. According to social identity theory, as people get closer (physical encroachment increases), feelings of acceptance will increase (acceptance threat decreases). Shoppers select a store because it matches their preferences, so other shoppers and employees will be like minded (Martineau 1958); a person will feel employees are similar to other group members (or part of their "in-group"), decreasing acceptance threat as a person gets physically closer. Research has shown people will get physically closer to a person whose eyes are shut and cannot make visual contact to compensate for intimacy lost from eye contact (Argyle and Dean, 1965), suggesting higher levels of social acceptance as expressed through increased intimacy when people get

[1] Hypotheses 1a, 2a, 2b, and 3 were originally in a positive direction. After study 1 was conducted, it become apparent the relationships were all negative. The extant literature here was referenced to justify the negative relationships for the hypotheses as they are now before collecting data for study 2.

physically close. Additionally, closer physical distance signals an intimacy (Vine, 1982), further suggesting decreased acceptance threat. Where people place themselves in relation to each other communicates how they feel about one another (Stillman, 1978), thus hypothesis 1b:

H1b: Higher levels of physical encroachment have a negative relationship to acceptance threat.

Visual Encroachment → Categorization Threat

Just as physical markers are more easily seen as physical distance is decreased, information to help categorization is more available as visual contact increases. As visual encroachment increases, miscategorization is less likely to occur as more information is taken in that affirms categorization (Elsbach, 2003). Further supporting this hypothesis is social impact theory which suggests people will feel more of an immediate target to influence as visual contact is made. This perception of being watched will encourage cooperation to identity behaviors as a person attempts to protect their reputation (Bateson, Nettle, and Roberts 2006), causing more accurate categorization based on category-specific behaviors, leading to hypothesis 2a:

H2a: Higher levels of visual encroachment have a negative relationship to categorization threat.

Visual Encroachment → Acceptance Threat

Similar to physical encroachment leading to more acceptance, visual encroachment also leads to more feelings of acceptance. The more a person makes visual contact, the more accepting they are as opposed to them not looking or ignoring an object, which is seen as rejection. Also similar to increased physical distance, an increase in visual encroachment also signals a closeness that causes the intruded party to feel they have been accepted (Vine, 1982).

The desire to be seen is interpreted as being loved and recognized as a person (Argyle and Dean, 1965), forming hypothesis 2b:

H2b: Higher levels of visual encroachment have a negative relationship to acceptance threat.

Interaction → Threat

According to reactance theory, more threats presented at once will result in greater reactance (Brehm, 1966). This would suggest an interaction of physical and visual encroachment on both categorization and acceptance threat. Reactance theory alone would say when encroachment is low for both physical and visual dimensions, the felt threat would be greatest, followed by the low/high combinations of encroachment, and the high physical/ high visual encroachment level being the least threatening. However, social impact theory, which discusses influence by means of quantity and space, states that a change in number of influencers from zero to one is a greater change on influence than any other singular addition (Latante, 1981). In other words, going from zero people influencing a person to one has a greater change in influence than going from 50 influencers to 51. Using this logic, the difference between low levels of both physical and visual encroachment should be significantly different from all three other levels. The other three levels (low/high; high/low; high/high) should not be significantly different from each other. This leads to both hypothesis 3a and 3b:

H3a: There will be an interaction of physical and visual encroachment such that there will be a significant difference of categorization threat in low physical encroachment across levels of visual encroachment, but there will not be a

significant difference of categorization threat in high physical encroachment across levels of visual encroachment.

H3b: There will be an interaction of physical and visual encroachment such that there will be a significant difference of acceptance threat in low physical encroachment across levels of visual encroachment, but there will not be a significant difference of acceptance threat in high physical encroachment across levels of visual encroachment.

Threat → Purchase Pressure

Reactance theory states that a threat to behavior will result in reactance, and the greater a threat, the greater the reactance (Brehm, 1966). According to the qualitative interviews, many shoppers felt purchase pressure in certain situations regarding privacy invasions. Purchase pressure is an increase in feelings to buy a certain product or to buy a particular brand (Warshaw, 1980). According to reactance theory, as threats increase, so should the purchase pressure reactance. As a person feels more categorization threat, they will also feel an increased pressure to buy certain products or brands. Likewise, as a person feels more acceptance threat, they will similarly feel an increase in purchase pressure as reaction to the threat. Thus, reactance theory leads to hypothesis 4a and 4b:

H4a: Categorization threat has a positive relationship to purchase pressure.

H4b: Acceptance threat has a positive relationship to purchase pressure.

Threats as Mediators

As reactance theory states that a threat must occur before reactance, it is formally hypothesized that categorization threat and acceptance threat both mediate the relationship between encroachments and purchase pressure:

H5a: Categorization threat mediates physical encroachment and purchase pressure.

H5b: Acceptance threat mediates physical encroachment and purchase pressure.

H6a: Categorization threat mediates visual encroachment and purchase pressure.

H6b: Acceptance threat mediates visual encroachment and purchase pressure.

Moderator: Legitimacy of Threat

Reactance theory states that a legitimate reason for a threat will lessen, but not eliminate, reactance. In the relationship between encroachment and social identity threats, reactance theory suggests that shoppers should react less to legitimate invasions of privacy as opposed to illegitimate. An invasion of physical and visual encroachment causes a reaction of less threats, therefore the threats should remain fairly stable in high legitimate situations across low and high invasions of privacy. In other words, it is expected that while high legitimate situations will still see a slight negative relationship between encroachment and felt threats, it is low legitimate situations that will have a greater difference. The negative relationship to both categorization and acceptance threat will be more prominent in lower legitimacy as an illegitimate reason for

encroachment will cause greater reaction. The high legitimacy situation should be a flatter line. Formally stated, this is hypothesis 7:

H7a: There will be an interaction between physical encroachment and legitimacy such that high legitimacy will have an insignificant change in categorization threat across low and high levels of physical encroachment but low legitimacy will have a significant change in categorization threat across physical encroachment.

H7b: There will be an interaction between physical encroachment and legitimacy such that high legitimacy will have an insignificant change in acceptance threat across low and high levels of physical encroachment but low legitimacy will have a significant change in acceptance threat across physical encroachment.

H7c: There will be an interaction between visual encroachment and legitimacy such that high legitimacy will have an insignificant change in categorization threat across low and high levels of visual encroachment but low legitimacy will have a significant change in categorization threat across visual encroachment.

H7d: There will be an interaction between visual encroachment and legitimacy such that high legitimacy will have an insignificant change in acceptance threat across low

and high levels of visual encroachment but low legitimacy will have a significant change in acceptance threat across visual encroachment.

Purchase Pressure → Control

In the theory of psychological reactance, it is stated that reactance is directed in attempts to reduce the loss of and reclaim threatened behavior. According to reactance theory, behavioral freedoms are equivalent to control (Brehm ,1966). Once behavior is threatened, a person will realize the threat to behavior and their loss of control. As purchase pressure constrains behavior, it will be followed by feelings of loss of control. More formally as stated by hypothesis 8:

H8: Purchase pressure has a negative relationship to feelings of control.

Feelings of Control → Reactance Outcomes

As stated above, as a person realizes a threat to behavior, reactance will occur. Reactance theory suggests that as shoppers realize lost feelings of control, they will react in ways to regain control and privacy (Brehm, 1966). Literature suggests that shoppers will react with increased abandonment and smaller purchase intentions. Abandoning the area will help the shopper regain elements of privacy and feel in control of the situation again. This could include a permanent abandonment of the store or a temporary abandonment of the shopping area. A person may leave an area with the intent to return later when privacy is at an adequate level. A shopper may also chose to permanently abandon the shopping area without making a purchase, which will be reflected in purchase intentions. The greater the threat and loss of control, the greater the

reactance will be in the form of these outcomes. The theory and literature lead to hypothesis 9, 10 and 11:

H9: Feelings of control have a negative relationship to temporary abandonment of area.

H10: Feelings of control have a negative relationship to permanent abandonment of area.

H11: Feelings of control have a positive relationship to purchase intentions (basket size).

Chapter Summary

This chapter described the theoretical background and extant literature used to form the hypotheses examined in this dissertation. Specifically, the definitions, functions and mechanisms of privacy were discussed to come up with a fuller understanding of interaction privacy. Additionally, two aspects of privacy, physical and visual, were split apart to create a 2 x 2 characterization of privacy encroachment. These aspects were first explained through a qualitative pilot study that helped guide the model development. Reactance theory was reviewed as the main theory which supports the model, along with social identity theory further supporting the hypotheses direction. Lastly, variables in the model were defined and hypotheses proposed for the relationships between them. The theoretical model was described as such: privacy encroachments lead to threats to the identity, which causes purchase pressure. This pressure then causes an individual to realize control has been lost, and reactance occurs. The next chapter will explain the methods used to answer the research questions and hypotheses previously discussed.

Table 3: Summary of Hypotheses

Hypothesis	Description
H1a	Higher levels of physical encroachment have a negative relationship to categorization threat.
H1b	Higher levels of physical encroachment have a negative relationship to acceptance threat.
H2a	Higher levels of visual encroachment have a negative relationship to categorization threat.
H2b	Higher levels of visual encroachment have a negative relationship to acceptance threat.
H3a	There will be an interaction of physical and visual encroachment such that there will be a significant difference of categorization threat in low physical encroachment across levels of visual encroachment, but there will not be a significant difference of categorization threat in high physical encroachment across levels of visual encroachment.
H3b	There will be an interaction of physical and visual encroachment such that there will be a significant difference of acceptance threat in low physical encroachment across levels of visual encroachment, but there will not be a significant difference of acceptance threat in high physical encroachment across levels of visual encroachment.
H4a	Categorization threat has a positive relationship to purchase pressure.
H4b	Acceptance threat has a positive relationship to purchase pressure.
H5a	Categorization threat mediates physical encroachment and purchase pressure.
H5b	Acceptance threat mediates physical encroachment and purchase pressure.
H6a	Categorization threat mediates visual encroachment and purchase pressure.
H6b	Acceptance threat mediates visual encroachment and purchase pressure.
H7a	There will be an interaction between physical encroachment and legitimacy such that high legitimacy will have an insignificant change in categorization threat across low and high levels of physical encroachment but low legitimacy will have a significant change in categorization threat across physical encroachment.

Table 3: Continued

Hypothesis	Description
H7b	There will be an interaction between physical encroachment and legitimacy such that high legitimacy will have an insignificant change in acceptance threat across low and high levels of physical encroachment but low legitimacy will have a significant change in acceptance threat across physical encroachment.
H7c	There will be an interaction between visual encroachment and legitimacy such that high legitimacy will have an insignificant change in categorization threat across low and high levels of visual encroachment but low legitimacy will have a significant change in categorization threat across visual encroachment.
H7d	There will be an interaction between visual encroachment and legitimacy such that high legitimacy will have an insignificant change in acceptance threat across low and high levels of visual encroachment but low legitimacy will have a significant change in acceptance threat across visual encroachment.
H8	Purchase pressure has a negative relationship to feelings of control.
H9	Feelings of control have a negative relationship to temporary abandonment of area.
H10	Feelings of control have a negative relationship to permanent abandonment of area.
H11	Feelings of control have a positive relationship to purchase intentions (basket size).

CHAPTER 3: METHODOLOGY

Introduction

Chapter three explains in detail the methodology used to collect quantitative data to test the proposed hypotheses. The research design was structured using experiments to not only answer the research questions but also to control variance so that the results could be attributed as much as possible to the independent variables (Kerlinger and Lee, 2000). The methods chosen in this dissertation are a reflection of the research questions, the phenomena under investigation, and control considerations (Frankel, Naslund, and Bolumole, 2005). A multi-method approach was discussed across three studies to ensure that each method's weaknesses would be addressed by the strengths of another method. Specifically, a written scenario experiment accompanied by a survey first tests the main model followed by a written second scenario study which replicates study 1 and adds a moderator. Study 3 extends the model to include the final dependent variables and uses video, rather than written, scenarios. The conceptual model set forth in chapter 2 is tested using regression and ANCOVA techniques for all studies.

This chapter will explain the sampling, design, and scales used to measure the items for the studies. The chapter will end with a summary of the methods employed.

Quantitative Research Overview

Experimental Design

Experimental designs were used for all studies. One group was a control group which receives no treatment, which for this study would be the low physical/ low visual encroachment cell. While laboratory experiments do have high internal validity, they lack external validity. A

video scenario experiment is conducted as study 3 to collect data with more realism than the written scenarios. The independent variables were manipulated with as much control as the situation allows.

Scale Design

Scales to measure the constructs in the model were adapted from available scales when available to avoid scale proliferation (Bruner, 2003). At least three items (Anderson and Gerbing, 1982) were used per construct as multi item scales increase reliability (Anderson and Gerbing, 1982; Churchill, 1979), decrease error in measurement, increase validity, and ensure that there is greater variability between the participants (Churchill, 1979). A measurement model was constructed in AMOS for each data set, and this in particular required three items per construct to ensure effective measurement (Anderson and Gerbing, 1982). Scales were written to be easy to understand, easy to answer, clear and concise (Dillman, 2000). Scales were not double barreled or biased as to increase likelihood that the items would be read with only one meaning (Converse and Presser, 1986; Hocking, Stacks, and McDermott, 2003; Kerlinger and Lee, 2000; MacKenzie and Podsakoff, 2012). The items are specific enough to relay one meaning to the participants, but the survey was kept to a reasonable length to increase response rates (Bean and Roszkowski, 1995; Converse and Presser, 1986). The items and survey are not complex or abstract as to not increase difficulty to the participants (MacKenzie and Podsakoff, 2012).

Regression and ANCOVA Analysis

Regression and ANCOVA (analysis of covariance) analyses were the main tools used to purify test the hypotheses summarized in Table 3. AMOS software was also be used to purify the items through a measurement model. The measurement model (confirmatory factor analysis)

evaluates how well the observed items measured the latent construct, signaling the usefulness of the measurement instrument. The measurement model was tested for construct validity (reliability, convergent and discriminant validity, and predictive validity) as well (Garver and Mentzer, 1999).

Regression and ANCOVA were used to test the actual relationships between variables. Regression techniques are used when the independent variable (IV) is continuous and the dependent variable (DV) is also continuous (e.g., to test the individual relationship between purchase pressure and feelings of control). Multiple regression was used when examining two or more IVs on one DV. ANCOVA is used when the IV is categorical and the DC is continuous (e.g., to test the relationship between physical encroachment and purchase pressure). ANOVA is used when the IV has two or more categories on one DV. ANCOVA is best suited for situations where the IV has two or more categories and one DV, similar to ANOVA, but where covariates are additionally examined to add control. MANOVA is similar to ANOVA, except MANOVA examines two or more DVs and controls for the DV correlation. MANCOVA examines two or more DVs and their correlation and adds control for covariation. The Preacher and Hayes (2008; Zhao, Lynch, and Chen, 2010) Bootstrap method was used to test the mediation hypotheses.

Measurement Reliability and Validity

Estimates in the CFA model were checked to ensure no negative error terms, standardized coefficients close to 1.0, and no excessively small or large standard errors. For satisfactory measurement, all items must have an estimation preferably above .7, but a minimum of .5, with their intended variable (Hair, Anderson, Tatham, and Black, 1998). Any items with a modification index (MI) greater than ten were examined for possible deletion as the items may have been loading on multiple factors (Fassinger, 1987).

Reliability refers to the stability, consistency, and dependability of the measurement tool. A reliable measure will yield results that are not random but rather are meaningful (Lanier and Saini, 2008). Reliability was assessed using composite reliability, with scores of .70 or above indicating acceptable correlation (Churchill, 1979). Reliability will also be determined by an average variance extracted measure of .50 or greater (Garver and Mentzer, 1999). Any items not meeting the criteria for reliability were either reassessed after the pretest or deleted as applicable.

Both convergent and discriminant validity were examined to assess construct validity. Convergent validity was determined by the measurement model fit with parameter estimates of preferably.70 or higher (Garver and Mentzer, 1999), but at .50 as a minimum (Hair et al., 1998). Additionally, the average variance extracted (AVE) should be above .50 for all constructs. Discriminant validity was examined by the AVE for constructs being greater than their squared correlation (Fornell and Larcker, 1981). Also, items should load highest on the construct they were intended to measure.

Common Method Bias

As with any measuring instrument or method, the methods used in this dissertation were not without risk of error. Any measuring instrument has systematic or construct variance, systematic error variance due to the method, and random error variance (Campbell and Fiske, 1959). The survey item scales do not all use the same anchor (i.e., very strongly disagree-strongly agree) to reduce common method bias as using the same anchor repeatedly reduces cognitive processing resulting in straight line answers (Podsakoff, MacKenzie, Lee, and Podsakoff, 2003). Common method bias was reduced by organizing the survey so that the predictor and criterion items were separate as to reduce demand cues (Hocking et al., 2003; Podsakoff et al., 2003). Participants were assured that their responses would be kept anonymous

or confidential as applicable (Podsakoff et al., 2003). Social desirability effects (a potential cause for method bias (Podsakoff et al., 2003)) were also reduced by organization of the survey, and the survey was self-administered so participants would not be able to pick up on cues from the researcher or other participants (Nederhof, 1985). Self-administered and Internet surveys also reduced context effects. Furthermore, the difficulty of the survey and tasks required of the participants did not exceed their capabilities. Participants must not only have the capability of answering the survey, but have the experience required of to answer adequately (MacKenzie and Podsakoff, 2012). Previous research and academic experts were consulted throughout the process of research design to ensure reduction of common method bias.

Common method bias was tested through Harman's single factor test. All of the variables were loaded into an exploratory factor analysis (EFA) in SPSS software to examine the number of factors that emerged to account for variance. If only one factor emerges or one factor accounts for the majority of variance, then common method bias is present (Podsakoff et al., 2003).

Common method bias was additionally tested in AMOS through a common method variance (CMV) factor in the model. All items were loaded onto their related construct as well as the CMV. All the paths from the items to the CMV were constrained to equal to get a single number for the CMV regression weight. This number was squared, and the amount of variance for common method was determined a problem if this number was above .5 (Gaskin, 2011). Common method bias was never a problem, but if it were, common method variance would have been partialled out in AMOS software to be saved and used in SPSS for regression and ANCOVA analysis (Podsakoff et al., 2003).

Study 1: Examination of the Base Model

The purpose of study 1 was to test the direct effects and interaction of encroachment on categorization threat and acceptance threat as well as the threats' relationship to purchase pressure using an experimental design. The study design was a 2 (low/high visual encroachment) by 2 (low/high physical encroachment) experiment across 2 products (as outlined in pretest 1) with written manipulated scenarios. This lab experiment was paired with another lab experiment of written scenarios in study 2 and a video scenario experiment in study 3 to increase levels of control and also add realism with the videos, while showing replication across methodologies and products.

Each participant received one of eight scenarios (available in Table 4) manipulating the independent variables of physical and visual encroachment across high and low levels and across two product categories. Consistent patterns of results were expected across the two products. After reading a scenario, participants answered survey items (available in Table 6). The purpose of study 1 was to test the direct effects and interaction of encroachment on the social identity threats and the threats relationship to purchase pressure. The advantages to this lab experiment accompanied by a survey were ease of use for the participants, high levels of control, internal validity, and the testing of the direct effects and interaction.

Sampling

The sampling procedure was a convenience sample, with participants randomized into conditions getting only one of the manipulated scenarios. The population was solicited from a consumer panel so that respondents' behaviors and intentions were more generalizable than a purely younger college student sample. This consumer panel was a service available online through Amazon's Mechanical Turk (M-turk) where requesters (e.g., researchers) can post

surveys for members of the panel to respond to. The members can browse available surveys and tasks and respond to any they desire. Research has examined M-turk as a data source and shown that it is a suitable means for gathering reliable data and that it exhibits responses similar to traditional data sources (Paolacci, Chandler, and Panagiotis, 2010; Rand, 2012).

Participants were given a nominal fee of $0.75 for incentive. Parameters were set so that respondents to the survey are based in the U.S., can only complete the survey once, and have a 90% approval rating from past surveys taken through M-turk. As the nature of the survey is about shopping behavior, further filtering of participants was not set. Every user on the panel should have had personal experience with shopping and could realistically imagine the scenarios set forth in the manipulations. An attention filter question was employed in the body of the survey to increase the probability that any one user is actually reading the survey (Oppenheimer, Meyvis, and Davidenko, 2009). 280 participants were needed for study 1 (35 participants per cell, four scenarios, and two products) (Sawyer and Ball, 1981).

Pretest 1

A primary pretest was conducted to gather a list of products that participants listed as desiring the most amounts of privacy when shopping for. A brief survey was placed on M-turk (to ensure consistency across samples for the pretest and main test) asking participants "To please list the top 3 products you purchase in which you desire the most privacy when purchasing." After the participant listed a product, they were asked how often they bought the product as well as a series of affect items (available in Table 5). A total of 50 participants (given a $0.50 fee for participation) were used for this pretest, and products listed most frequently were used for the next pre-test for a final selection of two for the main data collection. The items listed in Table 5 were asked for each of the three products to determine why privacy was desired and if

there were significant differences across these products regarding embarrassment of the product and anxiety while shopping for the product, along with several other affective items. The products named in the pretest were analyzed for frequency mentioned (in general and across gender for an even split), and the most effective items and scales were used for the survey.

Pretest 2

A second two-part pretest was conducted before the main test. First, academics and managers were asked to review the scenarios and survey for realism and any concerns they might see regarding the survey. Feedback was gathered and corrections made accordingly.

The second part was to ensure correct perception of the manipulation checks. The manipulations for high/low visual and physical encroachment were placed on M-turk with the manipulation checks (listed in Table 6) to ensure readers perceived the manipulations. The majority of scales used for measurement were adapted from pre-established scales; therefore, a full pretest on those items was not conducted. The most listed items from pretest 1 were listed with items from the four strongest scales (as listed in Table 6) to test for similarities and differences across the scales on the products. Additional items were also listed as control products to ensure that a comparison item was available for post hoc analysis if needed. Each product also had a question regarding importance of privacy while shopping for that product. Store type was assessed to determine what type of store (e.g., pharmacy, grocery store, or super center) a shopper most desires privacy for with an open-ended question to determine why. These thoughts were coded, and the dominant store type was used in the main data collection. A thought listing ended the pretest to collect any additional information participants wanted to share. The pretest was conducted on M-turk for a nominal fee of $0.50. 50 participants were used for the second pretest data collection.

Main Test

The main test was placed on M-turk, offering participants $0.75 for participation. 280 participants were needed for adequate power in analyzing the data with regression and ANCOVA techniques. The main test was a 2 (physical encroachment: low/high) x 2 (visual encroachment: low/high) across two products design resulting in eight scenarios (four different manipulations, available in Table 4, with two different products listed as indicated by the initial pretest) that was available online. Two different products were listed (foot fungal cream and hemorrhoid cream as determined by the pretests) to examine for generalizability of the results and for a consistent pattern of results across the products. The purpose of the two products was not to test for significant differences between the two products (e.g., are threats higher with hemorrhoid cream than with foot fungal cream), but rather to ensure that the paths lie in the same direction for each product (e.g., higher physical encroachment has a positive effect on categorization threat in both hemorrhoid cream and foot fungal data). To examine the possibility for product differences regarding need for privacy, several items were included in the survey to test for product expressiveness, personal nature of the product, nervousness in buying product, and embarrassment in purchasing the product. These items were used as controls in the data analysis, but post hoc analysis will also test these variables as moderators on the relationship between encroachments and threats to check for product differences.

Participants who chose to respond read one scenario randomly assigned to them and then answered the survey. The scenario and accompanying survey were available through the Qualtrics platform and a link available on M-turk that allowed participants to take the survey. Collected data was analyzed using AMOS and SPSS software, as previously described.

After participants read their randomly assigned scenario, they were then instructed to answer the survey. Table 6 lists the items for each scale included in the survey. The survey with items was listed in the following order (with items in each main bulleted category mixed together) to ensure reduction of demand artifacts:

- Thought listing
- Purchase pressure
- Social identity threats
- Manipulation checks
    - Physical encroachment
    - Visual encroachment
- Product type controls
    - Identification with item
    - Expressiveness of item
    - Embarrassment purchasing item
    - Anxiety purchasing item
- Anonymity control
- Additional Survey Items
    - General feelings of privacy
    - Importance of in-group
    - Social Acceptance
    - Self-monitoring
    - Compulsive buying
    - Fear of disapproval
    - Satisfaction
    - Trust
    - Loyalty to the store
- Demographics
    - Frequency of purchase
    - Gender
    - Age
    - Race
    - Income
    - Education
- Pretest questions regarding clarity of survey

Controls

Several items were collected to create control variables. The product type variables (expressiveness, identification, embarrassment, and anxiety) were controlled for to ensure that

the differences found in the analysis came from privacy differences and not from how the product makes the shopper feel. Characteristics of products and the resulting emotions can influence shopping behavior (Menon and Kahn, 2002) and judgments (Dube and Morgan,1996). Further, physical encroachment can cause anxiety, discomfort and stress (Altman, 1975; Bergman, 1971), and the spotlight effect can be attributed to feelings of social anxiety and fear (Gilovich et al., 2002). This previous research suggests emotions tied to the products will have an impact in the tested relationships. The four product emotion variables noted above rated highest in the pretest over other variables. Therefore, those four were chosen as possible controls in data analysis. Anonymity was also collected and controlled for to ensure that feelings of being anonymous don't conflict with feelings of privacy, particularly in the low physical/low visual manipulation. Proximity is a component of anonymity, and it can reduce a person's fear of social disapproval or valuation (Pinsonneault and Heppel, 1998). Anonymity was used as a control so the effect of privacy on the threats could be seen without the impact of anonymity.

Table 4: Manipulated Scenarios for Study 1

Manipulation	Scenarios
Low physical / Low visual	Imagine that you have run out of a few items and need to make a shopping trip to a local store. You go to a pharmacy (e.g., a Walgreens, CVS, Rite-Aid, etc.) that you frequent with a list of items to purchase. You start to walk around the store to find and select your items. As you get to the first item on your list, foot fungal cream/hemorrhoid cream, no employee is watching you or can see what you are doing and no employee is physically close to you. As you continue looking for your item, you check and are still alone in the area and shopping unobserved.
High physical / Low visual	Imagine that you have run out of a few items and need to make a shopping trip to a local store. You go to a pharmacy (e.g., a Walgreens, CVS, Rite-Aid, etc.) that you frequent with a list of items to purchase. You start to walk around the store to find and select your items. As you get to the first item on your list, foot fungal cream/hemorrhoid cream, an employee has come to look at the same product you are at and is standing very close to you. They are not watching you or seeing what you are doing. As you continue looking for your item, you check and the employee is still very close to you but not observing what you are doing.
Low physical / High visual	Imagine that you have run out of a few items and need to make a shopping trip to a local store. You go to a pharmacy (e.g., a Walgreens, CVS, Rite-Aid, etc.) that you frequent with a list of items to purchase. You start to walk around the store to find and select your items. As you get to the first item on your list, foot fungal cream/hemorrhoid cream, no one is physically close to you but an employee not in the area is watching you. As you continue looking for your item, you check and are still alone in the area but the employee is still observing you from a distance.
High physical / High visual	Imagine that you have run out of a few items and need to make a shopping trip to a local store. You go to a pharmacy (e.g., a Walgreens, CVS, Rite-Aid, etc.) that you frequent with a list of items to purchase. You start to walk around the store to find and select your items. As you get to the first item on your list, foot fungal cream/hemorrhoid cream, an employee has come to look at the same product you are at and is standing very close to you. The employee is watching you. As you continue looking for your item, you check and the employee is still very close to you and observing you.

Table 5: Pretest 1 Definitions and Scales

CONSTRUCT	DEFINITION	ORIGINAL SCALE	SCALE ITEMS FOR SURVEY	SOURCE(S)
Identification with purchase	Perceptions of oneself in relation to the stereotypical image of the product user and the congruence of each to each other	• people who (use focal brand) are much more like me than people who (use referent brand) • I can identify with those people who prefer a (focal brand) over a (referent brand) • I am very much like the typical person who prefers to (use focal brand) rather than a (referent brand) • The image of the (user of focal brand) is highly consistent with how I see myself	7-point Likert scale • People who buy this item are much more like me than people who don't • I can identify with those people who prefer this item • I am very much like the typical person who prefers to use this item • The image of this item is highly consistent with how I see myself	(Sirgey et al., 1997)
Attitude toward the product (value-expressive function)	Degree to which a person feels the product expresses the self	• _____ reflect the kind of person I see myself to be. • My _____ helps ascertain my self-identity. • My _____ makes me feel good about myself.	7-point Likert scale • This product reflects the kind of person I see myself to be • This product helps ascertain my self identity • This product makes me feel good about myself	(Grewal, Mehta, and Kardes, 2004)

Table 5: Continued

CONSTRUCT	DEFINITION	ORIGINAL SCALE	SCALE ITEMS FOR SURVEY	SOURCE(S)
		• My _____ is an instrument of my self-expression. • My _____ plays a critical role in defining my self-concept. • My _____ helps me to establish the kind of person I see myself to be.	• This product is an instrument of my self-expression. • This product plays a critical role in defining my self-concept. • This product helps me to establish the kind of person I see myself to be. • This product says a lot about who I am	
Embarrassment from product	How much embarrassment the person feels regarding the product	• Not embarrassed at all/ very embarrassed • Not uncomfortable at all/ very uncomfortable • Not awkward at all/ very awkward	7-point Likert scale • Not embarrassed at all/ very embarrassed • Not uncomfortable at all/ very uncomfortable • Not awkward at all/ very awkward	(Dahl et al., 2001)
Embarrassment about purchase	How much embarrassment the person feels about the act of purchasing the product	• It is very embarrassing to buy condoms • When I need condoms I often dread having to get them • I don't think that buying condoms is awkward • It would be embarrassing to be seen buying condoms in a store	• It is very embarrassing to buy this product • When I need this product I often dread having to get it • I think that buying this product is awkward • It would be embarrassing to be seen buying this product in a store	(Helweg-Larsen and Collins, 1994)

Table 5: Continued

CONSTRUCT	DEFINITION	ORIGINAL SCALE	SCALE ITEMS FOR SURVEY	SOURCE(S)
		• I always feel really uncomfortable when I buy condoms	• I always feel really uncomfortable when I buy this product	
Affective Response (Negative)		• scared • afraid • upset • distressed • jittery • nervous • ashamed • guilty • irritable • hostile • panicky • troubled • sad • worried • regretful • remorseful • angry • edgy • depressed • uncomfortable • uneasy • tense	Please rate your overall emotional reaction to the shopping situation (5 point, not at all to very much) • scared • afraid • upset • distressed • jittery • nervous • ashamed • guilty • irritable • hostile • panicky • troubled • sad • worried • regretful • remorseful • angry • edgy • depressed • uncomfortable • uneasy • tense	(Dube and Morgan, 1996; Luce, 1998)

Table 5: Continued

CONSTRUCT	DEFINITION	ORIGINAL SCALE	SCALE ITEMS FOR SURVEY	SOURCE(S)
Anxiety	A feeling of discomfort associated with worry	• Anxious • Nervous • Uncertain	Please rate how the overall shopping trip made you feel (1-5) • Anxious • Nervous • Uncertain	(Lau-Gesk and Meyers-Levy, 2009)
Privacy Desire	The amount of privacy a person wishes to have		5-point scale • How much privacy would you want when shopping for ____ product?	

Table 6: Study 1 and 2 Definitions and Scales for Survey Items

CONSTRUCT	DEFINITION	ORIGINAL SCALE	SCALE ITEMS FOR SURVEY	SOURCE(S)
Open Thought Listing			Having read your shopping trip situation, what are the first <u>two thoughts</u> that come to your mind about that experience?	
Purchase Pressure	Increased feeling to buy a product or a particular brand (Warshaw, 1980).	• I believe I had some choice about selecting this particular _____. • I selected this particular _____ because I wanted to. • I selected this particular _____ because I had to. • I selected this particular _____ because I had no choice.	• There was some pressure to select this particular item • I selected this particular item because I felt others wanted me to • I selected this particular item because I felt I had to • I felt pressure to buy the item I was looking at • I felt persuaded to purchase this item	First three items adapted from Mogilner, Rudnick, and Iyengar, 2008
Social Identity Threat (general) *Not used in the survey- used for general definition purposes and	A personal threat to a person's character, image or ability, or a social identity threat regarding group membership (Major and Sawyer, 2009).	• I felt that the event reflected poorly on me • I felt that people would make judgments about the type of person I am based on the event • I was afraid that this person's behavior	• I felt that the item reflected poorly on me • I felt that people would make incorrect judgments about the type of person I am based on the item • I was afraid that this	(Lickel, Schmader, Curtis, Scarnier, and Ames, 2005).

Table 6: Continued

CONSTRUCT	DEFINITION	ORIGINAL SCALE	SCALE ITEMS FOR SURVEY	SOURCE(S)
guidance for categorization threat and acceptance threat		would be viewed as indicating something about the person I am	item would wrongly indicate something about the person I am • I felt that someone could form the wrong opinion of me based on this item	
Categorization Threat	Specific threat of categorization threat (being prejudged regarding membership to a group) (Branscombe et al., 1999).		• I felt that other people would place me in to a social group that I did not belong based on my product choice • I felt the item I was buying could place me into a social group I do not identify with • I felt that others could use the item to place me into a social group I do not fit • I thought the item might make people think I am different than who I think I am • I was afraid someone would place me into a social group I would not like	Adapted from definition by Branscombe et al., 1999

Table 6: Continued

CONSTRUCT	DEFINITION	ORIGINAL SCALE	SCALE ITEMS FOR SURVEY	SOURCE(S)
Acceptance Threat	Specific threat of acceptance threat (fear of being disrespected or rejected) (Branscombe et al., 1999).		• I felt I might be rejected because of my item choice • I felt that others might not accept me based on this item • I thought others might not admit me as one of their own because of this item choice	Adapted from definition by Branscombe et al., 1999
Physical encroachment	The invasion of personal space, or the invisible boundary surrounding a person that results in feelings of discomfort (Altman, 1975).		**Manipulation check:** Extent of: -Please rate how physically close another person was to you in the scenario, with 1 being not very close/obvious and 7* being very close/obvious. • Very distant / very close • Very far away / very near • Not close / very close by	
Visual encroachment	The invasion of visual boundaries, or the estimation in which a person believes they are being watched by others		**Manipulation check:** Extent of: -Please rate the extent that another person was watching	

Table 6: Continued

CONSTRUCT	DEFINITION	ORIGINAL SCALE	SCALE ITEMS FOR SURVEY	SOURCE(S)
	(Gilovich et al., 2000).		you in the scenario, with 1 being not watched/ obvious and 7 being very watched /obvious. • Not watched / very watched • Not observed / very observed • Not paid attention to / very paid attention to • Not looked at / very looked at	
Product Type Controls:				
Identification with purchase	Perceptions of oneself in relation to the stereotypical image of the product user and the congruence of each to each other	• people who (use focal brand) are much more like me than people who (use referent brand) • I can identify with those people who prefer a (focal brand) over a (referent brand) • I am very much like the typical person who prefers to (use focal brand) rather than a (referent brand) • The image of the (user	7-point Likert scale • People who buy this item are much more like me than people who don't • I can identify with those people who prefer this item • I am very much like the typical person who prefers to use this item	(Sirgey et al., 1997)

Table 6: Continued

CONSTRUCT	DEFINITION	ORIGINAL SCALE	SCALE ITEMS FOR SURVEY	SOURCE(S)
		of focal brand) is highly consistent with how I see myself		
Attitude toward the product (value-expressive function)	Degree to which a person feels the product expresses the self	• _____ reflect the kind of person I see myself to be. • My _____ helps ascertain my self-identity. • My _____ makes me feel good about myself. • My _____ is an instrument of my self-expression. • My _____ plays a critical role in defining my self-concept. • My _____ helps me to establish the kind of person I see myself to be.	7-point Likert scale • This product is an instrument of my self-expression. • This product plays a critical role in defining my self-concept. • This product helps me to establish the kind of person I see myself to be.	(Grewal et al., 2004)
Embarrassment from product	How much embarrassment the person feels regarding the product	• Not embarrassed at all/ very embarrassed • Not uncomfortable at all/ very uncomfortable • Not awkward at all/ very awkward	7-point Likert scale • I think that buying this product is awkward • It would be embarrassing to be seen buying this product in a	(Dahl et al., 2001)

Table 6: Continued

CONSTRUCT	DEFINITION	ORIGINAL SCALE	SCALE ITEMS FOR SURVEY	SOURCE(S)
Embarrassment about purchase	How much embarrassment the person feels about the act of purchasing the product	• It is very embarrassing to buy condoms • When I need condoms I often dread having to get them • I don't think that buying condoms is awkward • It would be embarrassing to be seen buying condoms in a store • I always feel really uncomfortable when I buy condoms	store • I always feel really uncomfortable when I buy this product	(Helweg-Larsen and Collins, 1994)
Anxiety	A feeling of discomfort associated with worry	• Anxious • Nervous • Uncertain	Please rate how the overall shopping trip made you feel (1-7) • Anxious • Nervous • Tense	(Lau-Gesk and Meyers-Levy, 2009; Dube and Morgan, 1996; Luce, 1998)
Anonymity	Being unrecognizable and unobserved in a public space	• I believed others could identify me (r) • I felt anonymous • I felt that I was unnoticed • I felt that I was not	7-point Likert scale • I felt anonymous	(Pinsonneault and Heppel, 1998)

Table 6: Continued

CONSTRUCT	DEFINITION	ORIGINAL SCALE	SCALE ITEMS FOR SURVEY	SOURCE(S)
		being evaluated		
Additional Survey items:				
General Feelings of Privacy	Assessment of desired and achieved levels of general privacy.	• How much privacy would you like to have in the city park? (Likert scale) • How much privacy did you actually have in the city park • I am satisfied in my ability to control the types of personal information that my organization collects on me • I have little reason to be concerned about my privacy here in my organization • I control how my personal information is used by my organization	7-point Likert scale • Using the scale below, please rate how much privacy you would have liked to have in the scenario described • Using the scale below, please rate how much privacy you felt you actually had in the scenario described • (Can create difference score for post hoc analysis as well) • Using the scale below, please rate how much privacy you expect to have while shopping for the item listed in the scenario • I was completely satisfied in my ability to control the level of privacy I had in the store	(Gharaei, Rafieian, and Jalalkamali, 2012; Alge, Ballinger, Tangirala, and Oakley, 2006)

Table 6: Continued

CONSTRUCT	DEFINITION	ORIGINAL SCALE	SCALE ITEMS FOR SURVEY	SOURCE(S)
			• I had little reason to be concerned about my privacy in this store • I controlled my level of privacy within the store • I had control over who I dealt with	
Importance of In-group	Extent to which a person's identification with a group makes up their own self image	• Overall, my group memberships have very little to do with how I feel about myself (r) • The social groups I belong to are an important reflection of who I am • The social groups I belong to are unimportant to my sense of what kind of person I am (r) • In general, belonging to social groups is an important part of my self image	7-point Likert scale • Overall, the groups I belong to have a lot to do with how I feel about myself • The social groups I belong to are an important reflection of who I am • The social groups I belong to are important to my sense of the kind of person I am • In general, belonging to social groups is an important part of my self image	(Luhtanen and Crocker, 1992)
Social acceptance	How important it is for a person to be accepted by others	• How important is it for you to look attractive to others? • How important is it for	7-point Likert scale • It is important for me to look attractive to others	(Pechmann, Zhao, Goldberg, and Reibling,

Table 6: Continued

CONSTRUCT	DEFINITION	ORIGINAL SCALE	SCALE ITEMS FOR SURVEY	SOURCE(S)
		you to look attractive to dates or potential dates? • How important is it for you to fit in with kids your age? • How important is it for you to fit in at parties?		2003)
Self-monitoring	Degree to which a person is aware of the meaning of their actions expressing how they perceive themselves to be High self-monitors will choose either true or false as indicated, where as low self-monitors will pick the opposite	• 1. I find it hard to imitate the behavior of other people. (F) • 2. My behavior is usually an expression of my true inner feelings, attitudes, and beliefs. (F) • 3. At parties and social gatherings, I do not attempt to do or say things that others will like. (F) • 4. I can only argue for ideas which I already believe. (F) • 5. I can make impromptu speeches even on topics about which I have almost no information. (T)	7-point Likert scale • My behavior is usually an expression of my true inner feelings, attitudes, and beliefs	(Snyder, 1974)

Table 6: Continued

CONSTRUCT	DEFINITION	ORIGINAL SCALE	SCALE ITEMS FOR SURVEY	SOURCE(S)
		• 6. I guess I put on a show to impress or entertain people. (T) • 7. When I am uncertain how to act in a social situation, I look to the behavior of others for cues. (T) • 8. I would probably make a good actor. (T) • 9. I rarely need the advice of my friends to choose movies, books, or music. (F) • 10. I sometimes appear to others to be experiencing deeper • emotions than I actually am. (T) • 11. I laugh more when I watch a comedy with others than when alone. (T) • 12. In a group of people I am rarely the center of attention. (F) • 13. In different situations and with different people, I often		

Table 6: Continued

CONSTRUCT	DEFINITION	ORIGINAL SCALE	SCALE ITEMS FOR SURVEY	SOURCE(S)
		act like very different persons. (T) • 14. I am not particularly good at making other people like me. (F) • 15. Even if I am not enjoying myself, I often pretend to be having a good time. (T) • 16. I'm not always the person I appear to be. (T) • 17. I would not change my opinions (or the way I do things) in order to please someone else or win their favor. (F) • 18. I have considered being an entertainer. (T) • 19. In order to get along and be liked, I tend to be what people • expect me to be rather than anything else. (T) • 20. I have never been good at games like		

Table 6: Continued

CONSTRUCT	DEFINITION	ORIGINAL SCALE	SCALE ITEMS FOR SURVEY	SOURCE(S)
		charades or improvisational acting. (F) • 21. I have trouble changing my behavior to suit different people and different situations. (F) • 22. At a party I let others keep the jokes and stories going. (F) • 23. I feel a bit awkward in company and do not show up quite so well as I should. (F) • 24. I can look anyone in the eye and tell a lie with a straight face (if for a right end). (T) • 25. I may deceive people by being friendly when I really dislike them. (T)		
Compulsive Buying	An irresistible urge to buy	• When I have money, I cannot help but spend part or all of it. • I often buy something I see in a store without planning, just because	7-point Likert scale • I often buy something I see in a store without planning, just because I've got to have it	(d'Astous, Maltais, and Roberge, 1990)

Table 6: Continued

CONSTRUCT	DEFINITION	ORIGINAL SCALE	SCALE ITEMS FOR SURVEY	SOURCE(S)
		I've got to have it. • Shopping is a way of relaxing and forgetting my problems. • I sometimes feel that something inside pushes me to go shopping. • There are times when I have a strong urge to buy (clothing, music, jewelry). • At times, I have felt somewhat guilty after buying because it seemed unreasonable.		
Fear of disapproval	The worry of one's actions being wrong and rejected	• I used the risk information because I worry what others may think of me. • What others thought of me did not influence the way I used the risk information. (r) • I was afraid people would find fault with me if I didn't use the risk information. • The disapproval of	• If someone is evaluating me, I tend to expect the worst.	(Watson and Friend, 1969)

Table 6: Continued

CONSTRUCT	DEFINITION	ORIGINAL SCALE	SCALE ITEMS FOR SURVEY	SOURCE(S)
		others would have little effect on whether I used the risk information. (r) • If someone is evaluating me, I tend to expect the worst. • I am usually confident that others will have a favorable impression of me even if I disagree with them. (r)		
Satisfaction	How much a person finds the shopping trip to match or exceed expectations	• Overall, I am satisfied with my shopping trip today • This shopping experience was very satisfactory.	7-point Likert scale • Overall, I am satisfied with my shopping trip today • This shopping experience was very satisfactory. • I felt good about my shopping trip • I was happy with my shopping trip	(Hausknecht, 1990; Swan, Trawick, and Carroll, 1981)
Trust	Belief in the integrity of the other	I feel that I can trust my _____ completely	7-point Likert scale • I feel that I can trust this store completely	(Larzelere and Huston, 1980)
Loyalty to the store	An action and behavioral intention to shop again at a store in the future	• How likely are you to do most of your future shopping at this store?	7-point Likert scale • I would do future shopping at this store	(Sirdeshmukh, Singh, and Sabol, 2002)

Table 6: Continued

CONSTRUCT	DEFINITION	ORIGINAL SCALE	SCALE ITEMS FOR SURVEY	SOURCE(S)
		• How likely are you to recommend this store to friends, neighbors, and relatives • How likely are you to Use this store the very next time you need to shop for a ____ item • How likely are you to spend more than 50% of your ___ budget at this store?		
• Frequency of Purchase • Gender • Age • Race • Income • Education			• How often do you purchase the product listed in the scenario: never; rarely; sometimes; often; all of the time • Please indicate your gender • Please select which age range you fall into • Please indicate which race you identify with • Please select your annual income • Please indicate the highest level of education you have	

Table 6: Continued

CONSTRUCT	DEFINITION	ORIGINAL SCALE	SCALE ITEMS FOR SURVEY	SOURCE(S)
Filter question			attained • Please select 5 for this item	
Pretest questions only regarding clarity of survey			On a scale of 1-7, with 1 being the least clear/realistic and 7 being the most clear/realistic, please rate the survey on the following: • The scenarios described were clear • The scenarios described were realistic • The questions in the survey were clear • The instructions for the survey were clear • Please enter any comments regarding the clarity or other aspects of the survey design here _____	

* All items on a 1-7 very strongly disagree/ very strongly agree scale, unless endpoints noted otherwise.

Study 2: Examination of the Moderator

Study 2 used the same framework as study 1, replicating the findings and adding the examination of the moderator, legitimacy, to test hypothesis 7. Two products were used in study 2 (foot fungal and hemorrhoid cream, the same as in study 1 to show consistency) with an additional manipulation of legitimacy of threat (as operationalized by appropriateness of encroachment. The manipulation of legitimacy of threat was pretested.). Study 2 was a 2 (high/low visual encroachment) x 2 (high/low physical encroachment) x 2 (legitimacy of threat: low/high) design across 2 products resulting in 16 scenarios.

Pretest

A pretest was conducted to ensure successful manipulation of legitimacy of threat. Physical and visual manipulations were also checked to ensure those were successful with the addition of legitimacy. Participants of the pretest were also asked to list what they perceived to be legitimate reasons for an employee of a store to invade their privacy (physically and visually). The top two reasons listed (theft and assistance purposes) were collected to be used as possible controls for the main test.

Sampling

The sample for study 2 included an online consumer panel using Amazon's Mechanical Turk (M-turk). Similar to study 2, the survey was posted on M-turk for a fee of $0.75 and a link to the survey on Qualtrics. Participants were randomly given one scenario to read followed by the survey items. A filter question eliminated any participants not fully reading the scenario and items (Oppeheimer et al., 2009). 560 participants were needed (16 scenarios and 35 participants per scenario). A pretest was conducted with the scenarios to ensure the legitimacy of threat

manipulation was perceived correctly as well as the physical and visual encroachment manipulations. The final survey was laid out in the following order:

- Purchase pressure
- Social identity threats
- Product type controls
    - Identification with item
    - Expressiveness of item
    - Embarrassment purchasing item
    - Anxiety purchasing item
- Manipulation checks
    - Legitimacy of threat
    - Physical encroachment
    - Visual encroachment
- Anonymity control
- Motive control
- Additional Survey Items (Control Variables)
    - General feelings of privacy
    - Importance of in-group
    - Social Acceptance
    - Self-monitoring
    - Compulsive buying
    - Fear of disapproval
    - Satisfaction
    - Trust
    - Loyalty to the store
- Demographics
    - Frequency of purchase
    - Gender
    - Age
    - Race

Controls

The product type controls (expressiveness and anxiety) and anonymity that were successfully used in study 1 were also used in study 2. As study 2 extends study 1, additional controls were also collected for possible addition. Study 2 adds a moderator of legitimacy of threat which captures how justifiable a shopper feels the encroacher on privacy is. The legitimacy of an entity is often linked with elements of trust (Everard and Galletta, 2006; Skanker, Urban, and Sultan, 2002). Trust in a retail store is closely connected to satisfaction and

loyalty intentions (Ball, Coelho, and Machas, 2004; Flavian and Guinaliu, 2006). Therefore, study 2 collected items on satisfaction, trust, and loyalty intentions as possible controls in data analysis.

Table 7: Manipulations for Study 2 with Legitimacy Moderator

Manipulation	Scenarios
Low physical / Low visual / legitimate	Imagine that you have run out of a few items and need to make a shopping trip to a local store. You go to a shopping center (e.g., a drug store, grocery store, or super center) that you frequent with a list of items to purchase. You start to walk around the store to find and select your items. As you get to the first item on your list, foot fungal cream/ hemorrhoid cream, no employee is watching you or can see what you are doing and no employee is physically close to you, and that seems appropriate and normal. As you continue looking for your item, you check and an employee is still not close to you or observing you and that still feels acceptable.
Low physical / Low visual / illegitimate	Imagine that you have run out of a few items and need to make a shopping trip to a local store. You go to a shopping center (e.g., a drug store, grocery store, or super center) that you frequent with a list of items to purchase. You start to walk around the store to find and select your items. As you get to the first item on your list, foot fungal cream/ hemorrhoid cream, no employee is watching you or can see what you are doing and no employee is physically close to you, and that seems inappropriate and abnormal. As you continue looking for your item, you check and an employee is still not close to you or observing you and that still feels unacceptable.
High physical / Low visual / legitimate	Imagine that you have run out of a few items and need to make a shopping trip to a local store. You go to a shopping center (e.g., a drug store, grocery store, or super center) that you frequent with a list of items to purchase. You start to walk around the store to find and select your items. As you get to the first item on your list, foot fungal cream/ hemorrhoid cream, an employee has come to the same product you are and is standing very close to you. They are not watching you or seeing what you are doing and their behavior seems appropriate and normal. As you continue looking for your item, you check and the employee is still very close to you but not observing what you are doing and that still feels acceptable.
High physical / Low visual / illegitimate	Imagine that you have run out of a few items and need to make a shopping trip to a local store. You go to a shopping center (e.g., a drug store, grocery store, or super center) that you frequent with a list of items to purchase. You start to walk around the store to find and select your items. As you get to the first item on your list, foot fungal cream/ hemorrhoid cream, an employee has come to the same product you are and is standing very close to you. They are not watching you or seeing what you are doing and their behavior seems inappropriate and abnormal. As you continue looking for your item, you check and the employee is still very close to you but not observing what you are doing and that still feels unacceptable.
Low physical / High visual / legitimate	Imagine that you have run out of a few items and need to make a shopping trip to a local store. You go to a shopping center (e.g., a drug store, grocery store, or super center) that you frequent with a list of items to purchase. You start to walk around the store to find and select your items. As you get to the first item on

Table 7: Continued

Manipulation	Scenarios
	your list, foot fungal cream/ hemorrhoid cream, no one is physically close to you but an employee not in the area is watching you and their behavior seems appropriate and normal. As you continue looking for your item, you check and are still alone in the area but the employee is still observing you from a distance and that still feels acceptable.
Low physical / High visual / illegitimate	Imagine that you have run out of a few items and need to make a shopping trip to a local store. You go to a shopping center (e.g., a drug store, grocery store, or super center) that you frequent with a list of items to purchase. You start to walk around the store to find and select your items. As you get to the first item on your list, foot fungal cream/ hemorrhoid cream, no one is physically close to you but an employee not in the area is watching you and their behavior seems inappropriate and abnormal. As you continue looking for your item, you check and are still alone in the area but the employee is still observing you from a distance and that still feels unacceptable.
High physical / High visual / legitimate	Imagine that you have run out of a few items and need to make a shopping trip to a local store. You go to a shopping center (e.g., a drug store, grocery store, or super center) that you frequent with a list of items to purchase. You start to walk around the store to find and select your items. As you get to the first item on your list, foot fungal cream/ hemorrhoid cream, an employee has come to the same product you are and is standing very close to you. The employee is watching you and their behavior seems appropriate and normal. As you continue looking for your item, you check and the employee is still very close to you and observing you and that still feels acceptable.
High physical / High visual / illegitimate	Imagine that you have run out of a few items and need to make a shopping trip to a local store. You go to a shopping center (e.g., a drug store, grocery store, or super center) that you frequent with a list of items to purchase. You start to walk around the store to find and select your items. As you get to the first item on your list, foot fungal cream/ hemorrhoid cream, an employee has come to the same product you are and is standing very close to you. The employee is watching you and their behavior seems inappropriate and abnormal. As you continue looking for your item, you check and the employee is still very close to you and observing you and that still feels unacceptable.

Table 8: Legitimacy of Threat Items for Studies 2 and 3

CONSTRUCT	DEFINITION	ORIGINAL SCALE	SCALE ITEMS FOR SURVEY	SOURCE(S)
Legitimacy	A justifiable reason for the encroachment		• The employee's behavior was acceptable • The employee's behavior was normal • The employee's behavior was legitimate • The employee's behavior was desirable • The employee's behavior was proper • The employee's behavior was appropriate • The employee's behavior was fair • An employee was watching me because it was their duty • An employee was obligated to watch me • An employee had the right to watch me • An employee got close to me because it was their duty • An employee was obligated to get close to	Adapted from definitions in literature (Ellemers, Wilke, and Knippenberg, 1993; Humphreys, 2010; Humphreys and Latour, 2013; Suchman, 1995) (Gaski, 1986; George, 1984)

Table 8: Continued

CONSTRUCT	DEFINITION	ORIGINAL SCALE	SCALE ITEMS FOR SURVEY	SOURCE(S)
			me • An employee had the right to get close to me	
Additional items for motive	Possible reasons for encroachment		• An employee was looking at you for theft purposes • An employee was near you for theft purposes • An employee was looking at your for assistance purposes • An employee was near you for assistance purposes	Top reasons listed in pretest for legitimate reasons for privacy to be invaded

Study 3: Examination of the Model Expansion

Study 3 was a 2 (visual encroachment: low/high) x 2 (physical encroachment: low/high) x 2 (legitimacy of threat: low/high) video scenario experiment design of the full model including the moderator, feelings of control, and abandonment/basket intentions. Study 3 replicates and extends the prior two studies. The model was extended to include feelings of control, temporary abandonment of area, permanent abandonment of area/store, and purchase intentions (basket size), thus testing hypotheses 8-11. Sixteen video scenarios (low/high visual and low/high physical across two products for two actors) were created to add realism to the shopping situation while keeping high levels of control. Participants received one video scenario and answered a survey about their shopping experience. Legitimacy of threat was measured, not manipulated, in the video scenarios and used as a continuous variable for analysis.

Sampling

The sample for study 3 also came from an online consumer panel. Participants were given a randomly chosen video scenario and asked to complete a survey following the video. A sample size of 280 was needed (35 participants per cell with four cells for two products) (Sawyer and Ball, 1981). Videos for each product were split between a male and female actor.

Overview of Study

Participants of the study watched a video from first-person perspective where an actor encroached upon their privacy at one of four levels: low physical / low visual; high physical / low visual; low physical / high visual; and high physical / high visual. Participants viewed the video scenario from their viewpoint and saw that they were shopping for a particular item (either foot fungal cream or hemorrhoid cream). Actors were roughly the same age (age differed by

approximately 4 months), but alternated between a male and female and were dressed in similar clothes to look like a store employee. As research has shown differences in responses to male and female confederates, the gender of the actors was collected to use as a control variable, but most actor characteristics were kept as similar as possible. A pretest was conducted to ensure that the confederates used were similar in physical attractiveness and physical characteristics.

Manipulations were taken from previous studies of physical and visual invasions. Aiello and Aiello (1974) found that a distance of 12-18 inches would sufficiently invade personal space and cause discomfort, and over 10 feet was enough to not be in question of personal space. Ellsworth and Carlsmith (1968) found significant results of eye engagement using 5 second duration stares 20 times during a 10-15 minute interview. Ellsworth et al. (1972) used gazing times ranging from 3-27.5 seconds across two studies and found that time is not correlated to effects but rather the recognition of being stared at causes effects. Therefore, the video showed confederates for one second to be more realistic as the glance of the confederate was enough time for viewers to recognize their behavior (Ellsworth et al., 1972). A five second stare time of the confederate in the video was unrealistic and not used for final scenarios. Participants were asked to answer survey questions based on their situation while shopping.

A survey after the participants watch the video will follow and be in the following order:

- Dependent Variables
    - Abandonment (temporary and permanent)
    - Purchase intentions
- Feelings of Control
- Purchase pressure
- Social identity threats
- Legitimacy
- Manipulation checks
    - Physical encroachment
    - Visual encroachment
- Attractiveness of actor
- Crowding

- Product type controls
    - Identification with item
    - Expressiveness of item
    - Embarrassment purchasing item
    - Anxiety purchasing item
- Additional Survey Items (Control Variables)
    - General feelings of privacy
    - Anonymity
    - Importance of in-group
    - Social Acceptance
    - Self-monitoring
    - Compulsive buying
    - Fear of disapproval
    - Satisfaction
    - Trust
    - Loyalty to the store
    - Attitude regarding safety
    - Realism
    - Risk aversion
    - Arousal seeking
- Demographics
    - Frequency of purchase
    - Gender
    - Race
    - Age
    - Income
    - Education

Controls

As in studies 1 and 2, controls were used for study 3. In addition to the anxiety, expressiveness, and anonymity controls used for the two previous studies, study 3 added controls of crowding, gender of the actor in the video, frequency of purchase, and arousal seeking. Altman (1975) stated that invasions of privacy were an antecedent to a person feeling crowded. Items for a crowding variable were collected so feelings of crowding could be controlled for and so results reflected invasions of privacy and not the impact of crowding perceptions. Articles using confederates for experimental research often use at least one male and one female confederate (Gueguen and Jacob, 2006; Pruitt, Carnevale, Forcey, and Van Slyck ,1986) as there

can be differences in reactions to the different genders when involved in personal encounters (Aiello and Thompson, 1980; Altman, 1975). Additionally, visual encroachment is tolerated more coming from an attractive person (Harper et al., 1978). Therefore, the actor variable was also used as a control for study 3 to account for differences in the actors' gender and attractiveness. Research has noted that familiarity with a purchase can reduce embarrassment associated with making that purchase (Dahl et al., 2001), and the same might be true for effects on the felt threats and legitimacy. How often a person purchases a product would not only change their perceptions of the situation in the written scenario, but would cause them to be more familiar with the purchase and possibly change their resulting feelings. As such, the frequency with which a participant buys the product (either foot fungal cream or hemorrhoid cream) was used as a control. Research has also shown that social cues can impact shopper's arousal (Baker, Levy, and Grewal, 1992; Hu and Jasper, 2006). Arousal seeking items were collected for study 3 that dealt with the participant's desire for arousal (Mehrabian and Russell, 1974), which could or could not be satiated with the encroachment of a store employee. One participant may prefer and like arousal from social encounters more than another. Additionally, physical encroachment can cause higher arousal, so the tendency to seek and desire arousal as an individual trait was controlled for in study 3.

Table 9: Study 3 Definitions and Scales for Video Experiment

CONSTRUCT	DEFINITION	ORIGINAL SCALE	SCALE ITEMS FOR SURVEY	SOURCE(S)
Temporary Abandonment	To physically leave the shopping area temporarily with the intention to return later during the same shopping trip	Intentions scale: • Not at all likely / very likely • Non-existent / existent • Improbable / probable • Impossible / possible • Uncertain / certain • Probably not / probably	In the scenario described above, please rate how likely you would be to physically *leave the area with the intent to return later* during the same shopping trip (7-point Likert scale): • Not at all likely / very likely • Non-existent / existent • Not probable / very probable • Not possible / very possible • Not certain / very certain • Probably not / probably	(Oliver and Swan, 1989)
Permanent Abandonment	To physically leave the shopping area and not return	Intentions scale: • Not at all likely / very likely • Non-existent / existent • Improbable / probable • Impossible / possible • Uncertain / certain • Probably not / probably	In the scenario described above, please rate how likely you would be to physically *leave the store* without making a purchase. • Not at all likely / very likely • Non-existent / existent	(Oliver and Swan, 1989)

Table 9: Continued

CONSTRUCT	DEFINITION	ORIGINAL SCALE	SCALE ITEMS FOR SURVEY	SOURCE(S)
			• Not probable / very probable • Not possible / very possible • Not certain / very certain • Probably not / probably	
Purchase intentions	The likelihood of the person purchasing the product	Intentions scale: • Not at all likely / very likely • Non-existent / existent • Improbable / probable • Impossible / possible • Uncertain / certain • Probably not / probably	Imagining that the product is something you do use, please rate how likely you would be to buy the product during the shopping situation shown in the video: • Not at all likely / very likely • Non-existent / existent • Not probable / very probable • Not possible / very possible • Not certain / very certain • Probably not / probably	(Oliver and Swan, 1989)
Feelings of control	Realization that freedom to behave as desired is restricted in the purchasing situation (Brehm, 1993).	• not at all controllable / definitely controllable • not at all preventable /	Please rate how much you agree with each of the following statements regarding your control over	First three items from Hess, Ganesan, and Klein, 2007 and

Table 9: Continued

CONSTRUCT	DEFINITION	ORIGINAL SCALE	SCALE ITEMS FOR SURVEY	SOURCE(S)
		definitely preventable • not at all avoidable / definitely avoidable	<u>the shopping situation</u> while shopping for _____: • not at all controllable / definitely controllable • not at all preventable / definitely preventable • not at all avoidable / definitely avoidable • I did not have control over the shopping situation (r) • I felt uneasy in the shopping situation because I did not feel in control (r) • I did not feel comfortable in the shopping situation because I did not have control over how others viewed me (r) • Due to a lack of control over the shopping situation, I did not feel comfortable (r)	Russell, 1982

Table 9: Continued

CONSTRUCT	DEFINITION	ORIGINAL SCALE	SCALE ITEMS FOR SURVEY	SOURCE(S)
			• I could not act how I normally would have • I could not behave how I wanted to	
Attractiveness of Actor			On a scale of 1 to 10, please rate how physically attractive you found the person in the video to be	
Crowding	Psychological state resulting from actual density of people in an area	• cramped-uncramped • stuffy-not stuffy • crowded-uncrowded • Free to move-restricted • Spacious-confined	Please rate how crowded you felt the shopping area was while you were shopping for _____: • Uncramped-cramped • Not stuffy- stuffy • Uncrowded-crowded • Free to move-restricted • Spacious-confined	(Kaplan, 1982)
Attitude Regarding Safety		• I feel like my privacy is protected at this site. • I feel safe in my transactions with this website. • The website has adequate security features.	• I feel like my privacy was protected at this store • I felt safe in my transactions with this store • The store had adequate security features	(Wolfinbarger and Gilly, 2003)

Table 9: Continued

CONSTRUCT	DEFINITION	ORIGINAL SCALE	SCALE ITEMS FOR SURVEY	SOURCE(S)
Realism		• This advertisement is believable. • This advertisement is credible. • This advertisement is realistic.	• The scenario was believable • The scenario was credible • The scenario was realistic	(Williams and Drolet, 2005)
Risk aversion		• I would rather be safe than sorry. • I want to be sure before I purchase anything. • I avoid risky things.	• I would rather be safe than sorry • I want to be sure before I purchase anything • I avoid risky things	(Donthu and Gilliland, 1996)
Arousal Seeking		• Designs or patterns should be bold and exciting. • I feel best when I am safe and secure.(r) • I would like the job of a foreign correspondent for a newspaper. • I don't pay much attention to my surroundings.(r) • I don't like the feeling of wind in my hair. • I prefer an unpredictable life that	• I feel best when I am safe and secure • I don't pay much attention to my surroundings	(Mehrabian and Russell, 1974)

Table 9: Continued

CONSTRUCT	DEFINITION	ORIGINAL SCALE	SCALE ITEMS FOR SURVEY	SOURCE(S)
		is full of change to a more routine one. • I wouldn't like to try the new group-therapy techniques involving strange body sensations.(r) • Sometimes I really stir up excitement. • I never notice textures.(r) • I like surprises.		

** All items on a 1-7 very strongly disagree/ very strongly agree scale, unless endpoints noted otherwise.

Chapter Summary

This chapter outlined the methods for data collection and analysis to be used across two studies. Study 1 consisted of a scenario-based experiment accompanied by a survey. The experiment and survey was available online through Amazon's M-turk. Study 2 was a field experiment manipulating shopping trips of shoppers and intercepting them upon exit of the store to answer a survey. The use of multiple methods (laboratory experiment and field experiment) increased the validity, reliability, generalizability and overall strength of the results. The collected data was analyzed using regression and ANCOVA.

CHAPTER FOUR: RESULTS

This chapter presents the results from data analysis for each of the three studies. For each study, an overview is given of the purpose and what each study will examine. Pretests are discussed first followed by the procedure, design, subjects, and measure of the main test. The measurement analysis will include a discussion of the measurement model, common method bias, manipulation checks, and confound checks. Finally, the results will be given in order of hypothesis and will be discussed for both products. A summary of findings will conclude each study before the next study is discussed. An overall summary of findings for all three studies combined will be presented at the end of the chapter. A discussion of the results follows in chapter five.

Study 1: Examination of the Base Model

Overview

The purpose of study 1 was to test the direct effects and interaction of physical and visual encroachment on categorization threat and acceptance threat as well as the threats' relationship to purchase pressure using an experimental design. The study design was a 2 (low/high visual encroachment) by 2 (low/high physical encroachment) experiment across 2 products (foot fungal cream and hemorrhoid cream) with written manipulated scenarios. Each participant received one of the eight scenarios (available in Table 4) manipulating the independent variables of physical and visual encroachment across high and low levels for two products. This section will first explain two pretests followed by results for the main test. Procedure, subjects and study design will be discussed before results are given for measurement, common method bias, manipulation

checks, confound checks, and hypotheses results. A summary of the findings for study 1 will conclude the presentation of results for the first study.

Pretest 1

The purpose of pretest 1 was to select two products shoppers most desire privacy for to use in the main test and examine what affective responses were most highly triggered by those products. Fifty participants were asked on M-turk to list three items they most desired privacy for while shopping and to rate those items on six established affective scales (see Table 5 for original and adapted items). The scales were collected to rate the items listed on affective response to examine which emotions were related to a product a shopper desired privacy for. These scales were used to pick products shoppers desired privacy for based on the emotions triggered, as well as variables that could be used for controls and examination in post hoc analysis.

An identification with the purchase scale rated perceptions of how the stereotypical image of the product user related in congruence to the shoppers' perception of themselves and included adapted items of: people who buy this item are much more like me than people who don't; I can identify with those people who prefer this item; I am very much like the typical person who prefers to use this item; and the image of this item is highly consistent with how I see myself (Sirgey et al., 1997). An attitude toward the product scale rated the degree to which the shopper feels the product expresses themselves and included items of: this product reflects the kind of person I see myself to be; this product helps ascertain my self identity; this product makes me feel good about myself; this product is an instrument of my self-expression; this product plays a critical role in defining my self-concept; this product helps me to establish the

kind of person I see myself to be; and this product says a lot about who I am (Grewal et al., 2004).

Two embarrassment scales rated how much embarrassment the shopper feels regarding the product (not embarrassed at all/ very embarrassed; not uncomfortable at all/ very uncomfortable; not awkward at all; very awkward (Dahl et al., 2001)) and how much embarrassment the shopper feels about the act of purchasing the product, which included items of : it is very embarrassing to buy this product; when I need this product I often dread having to get it; I think that buying this product is awkward; it would be embarrassing to be seen buying this product in a store; and I always feel really uncomfortable when I buy this product (Helweg-Larsen and Collins, 1994).

A negative affective response scale included many possible affective responses a personal could feel from the shopping situation that the shopper rated from not at all feeling to feeling very much and included: scared; afraid; upset; distressed; jittery; nervous; ashamed; guilty; irritable; hostile; panicky; troubled; sad; worried; regretful; remorseful; angry; edgy; depressed; uncomfortable; uneasy; and tense (Dube and Morgan, 1996; Luce, 1998). Lastly, an anxiety scale (anxious; nervous; and uncertain) rated how much discomfort the shopper felt associated with worry about the shopping situation (Lau-Gesk and Meyers-Levy, 2009).

An exploratory factor analysis (EFA) was conducted with a Varimax rotation. Loading Eigenvalues greater than 1, the EFA showed that 5 factors emerged: identification with product (3 items), expressiveness of product (8 items), embarrassment (10 items), anxiety (3 items), and a general negative affective response (17 items). The means were examined for each item to determine why people most desired privacy for the products listed. The goal was to find the highest rating items and scales to determine which products listed were most likely to be

associated with the desire for privacy. Simultaneously, scales were to be shortened to three items. Only three items were used per scale to cut down the number of items from 43 in the initial pretest to 12 in all following tests. Questionnaires should appear to be short and easy to decrease the mental cost to participants and increase the quality of responses through response rate (Dillman, 2000).

The general negative affective response scale (e.g., scared, afraid, upset, etc.) did not have any items with high means in comparison to items for identification, expressiveness, anxiety, and embarrassment. Therefore, the items with the top three highest means for each of the four scales were chosen for use in following pretests and main tests (see Table 6 for the final items). As mentioned previously in chapter 3, these scales were used as controls as people have different emotional responses to products (as further confirmed by the pretest).

Table 10: Product Frequency of Mention for Pretest 1

Product category	Males	Females
Acne products	1	6
Condoms*	15	10
Diet related items	2	1
Lubricants*	4	5
Medical (ointments)*	9	4
Medicine (general)	4	3
Misc.	7	9
Pregnancy tests	0	3
Tampons/pads*	3	21
Toilet paper	5	1
Underwear*	13	11
Vaginal products/creams	3	10

* Used in pretest 2

The 150 products listed by participants as those they desire privacy for were coded along 12 categories (see Table 10 for categories and male/female split) to determine which products were mentioned most (a miscellaneous category was created for items that were mentioned only once). The six highest ranking items were then used in pretest 2 for further analysis along the shortened affective scales (i.e., identification, expressiveness, anxiety, and embarrassment). These products included hemorrhoid cream and foot fungal cream (categorized as medical ointments and the two most frequently mentioned of the category), personal lubricant, condoms, feminine products, and underwear.

Pretest 2

The purpose of pretest 2 was to further examine the products from pretest 1 as well as pretest the experimental scenarios and manipulation checks. The first stage of pretest 2 was to gather feedback from managers and academics regarding the scenarios that were to be used in the main study. The scenarios were deemed acceptable with minor changes and put on Qualtrics without a product specified for purchase to test the manipulations independent of the product as the main study would test two products. Manipulation checks followed the scenarios, and the varying levels of physical and visual encroachment were found to be perceived as different (see results below). One hundred M-turk users were randomly given a scenario and asked to imagine themselves in the given situation (see Table 11 for scenarios and manipulation check items). They were then to answer the manipulation check questions that followed. The physical manipulation check items had good reliability ($\alpha = .97$) and were combined to create an average score. The low physical manipulation had a mean of 2.26 and the high of 6.45, $F(2, 38) = 5.84$, $p < .001$. The visual manipulation check items also had good reliability ($\alpha = .99$) and were

averaged to created a mean score. The low visual manipulation had a mean of 1.56 and the high had a mean of 6.09, $F(2, 38)= .16$, $p<.001$.

Table 11: Manipulation Check Scenarios and Items for Pretest 2 for Study 1

Manipulation	Scenario	Manipulation Check Items
Low Visual	Imagine that you have run out of a few items and need to make a shopping trip to a local store. You go to a store that you frequent with a list of items to purchase. You start to walk around the store to find and select your items. As you get to the first item on your list, no one is watching you or can see what you are doing. As you continue looking for your item, you check and are shopping unobserved.	Please rate how physically close another person was to you in the scenario: • Very distant/ very close • Very far away/ very near • Not close/ very close by
High visual	Imagine that you have run out of a few items and need to make a shopping trip to a local store. You go to a store that you frequent with a list of items to purchase. You start to walk around the store to find and select your items. As you get to the first item on your list, you notice an employee is watching you. As you continue looking for your item, you check and the employee is still observing you.	
Low Physical	Imagine that you have run out of a few items and need to make a shopping trip to a local store. You go to a store that you frequent with a list of items to purchase. You start to walk around the store to find and select your items. As you get to the first item on your list, no one is physically close to you. As you continue looking for your item, you check and are still alone in the area.	Please rate the extent that another person was watching you in the scenario: • Not watched/ very watched • Not observed/ very observed • Not paid attention to/ very paid attention to • Not looked at/ very looked at
High Physical	Imagine that you have run out of a few items and need to make a shopping trip to a local store. You go to a store that you frequent with a list of items to purchase. You start to walk around the store to find and select your items. As you get to the first item on your list, an employee has come to the same product you are and is standing very close to you. As you continue looking for your item, you check and the employee is still very close to you.	

Products from pretest 1 (condoms, underwear, hemorrhoid cream, foot fungal medication, personal lubricant, and feminine products) were placed after the manipulation checks with scales of anxiety, embarrassment, identification, and expressiveness for each product. For each product, a question asked if the participant had ever bought the listed product and how important privacy was for that product. This information was used to decide what products to choose for the main test. A final question was asked at the end of the pretest requesting that participants choose at which type of store they most desire privacy (grocery store, super center, or a pharmacy) with an open ended question asking why.

As the twelve effective items (see **Table 12**) were pretested previously as constructs with more items, an exploratory factor analysis (EFA) was against conducted to test the item measurement. For pretest 2, embarrassment and anxiety did not show discriminant validity but converged onto one factor with a Varimax rotation with Eigenvalues loading greater than 1 (α=.97). Therefore, a discomfort scale was created from the six embarrassment and anxiety items. The identification items all loaded onto one factor and showed good reliability (α= .93) as did the expressiveness items (α= .93). However, the discomfort scale (embarrassment and anxiety combined) accounted for 76.48% of the variance, which suggested it be used to determine which products to choose.

Products for the main test were chosen based on the highest mean for discomfort (see Table 13), the highest mean for desired privacy, and also for being able to locate in a pharmacy. Close to seventy-four percent of participants said that they most desired privacy in a pharmacy store (18.2% said super center and 8.1% said grocery store). The location of a pharmacy was used in scenarios to further ensure participants would imagine a scenario in which they most wanted privacy. However, age, gender, and usage considerations were also given to products,

Table 12: Product Affective Scales and Items

Scale	Items
Identification (Sirgey et al., 1997)	• People who buy this item are much more like me than people who don't • I can identify with those people who prefer this item • I am very much like the typical person who prefers to use this item
Expressiveness (Grewal et al., 2004)	• This product is an instrument of my self-expression. • This product plays a critical role in defining my self-concept. • This product helps me to establish the kind of person I see myself to be.
Embarrassment * (Helweg-Larsen and Collins, 1994)	• I think that buying this product is awkward • It would be embarrassing to be seen buying this product in a store • I always feel really uncomfortable when I buy this product
Anxiety * (Lau-Gesk and Meyers-Levy, 2009; Dube and Morgan, 1996; Luce, 1998)	• Anxious • Nervous • Tense

*EFA combined these to one factor for pretest 2 only

thus eliminating condoms (typically bought by majority male) and feminine products (typically bought by majority female) from selection. As hemorrhoid was the first item choice based on discomfort, privacy, age, and gender, foot fungal cream was chosen as the second product to be consistent with pharmacy location and product type (i.e., foot fungal cream is closer in product type to hemorrhoid cream than personal lubricant is). A survey of M-turk users also showed that 17 out of 27 (63%) believed foot fungal cream to be closer to hemorrhoid cream in terms of how the products are used (the next closest product in similarly was personal lubricant, which 7 (26%) believed to be most similar to hemorrhoid cream. Additionally, previous research has

suggested that personal care items are found to be most embarrassing (Lau-Gesk and Drolet, 2008), and these were the two highest rated personal care items. Two products were chosen to test the generalizability of the results. However, both products should be ones consumers desire privacy for to test the theories and ideas set forth in this dissertation.

Table 13: Means of Discomfort and Privacy for Pretest 2 Products

Product	Mean of Discomfort (5 point scale) / standard deviation	Mean of Privacy Importance (5 point scale) / standard deviation
Hemorrhoid Cream	3.25 / 1.43	3.98 / 1.25
Personal Lubricant	3.20 / 1.45	3.94 / 1.30
Condoms	2.90 / 1.39	3.54 / 1.37
Foot Fungal Medication	2.62 / 1.31	3.18 / 1.26
Feminine Products	2.51 / 1.27	3.06 / 1.36
Underwear	2.05 / 1.90	2.76 / 1.14

Main Test

Procedure

The survey was placed on Qualtrics and linked to Amazon's Mechanical Turk (M-turk). Participants were asked if they were 18 years or older and only those who said "yes" were allowed to continue. Participants were then asked to give their consent by reading and agreeing to the following:

> Thank you for your willingness to help with this survey. This survey should take approximately 10 minutes to complete. Your responses will be completely anonymous. Your participation will help us understand more about retail shopping. Your participation in this study is voluntary and if at any point you

wish to discontinue, you may quit the survey and will not receive the compensation. If you agree to these terms and give your consent for your responses to be used in the study, please click I agree.

Once participants gave their consent, they were then given instructions that told them, "On the next page is a scenario about a shopping trip. Please imagine yourself in the scenario purchasing the product as described. Following the scenario is a series of questions regarding your imagined shopping trip. Please answer the questions as accurately as possible as if you really had a shopping experience as described. The survey will not allow you to go backwards and re-read the scenario once you proceed to the question, so please remember your shopping situation and the product you are purchasing to answer the questions following the scenario."

Following the instructions were the written scenarios (Table 4). Participants were randomly given one of the scenarios. They were then given the survey items (Table 6). A filter question was asked (i.e., if you are reading this, please select "Strongly Agree") to ensure participants were reading instructions and survey items. Participants who did not correctly answer the filter question were not used in data analysis. Participants who did not pass the filter question were kicked out of the survey and did not receive compensation. Similarly, participants who did not complete the survey did not receive compensation.

Design

Study 1 collected data with a 2 x 2 design. The first factor was physical encroachment (low versus high). The second factor was visual encroachment (low versus high). This design yielded four scenarios including: low physical encroachment and low visual encroachment; high physical encroachment and low visual encroachment; low physical encroachment and high visual encroachment; high physical encroachment and low visual encroachment. These four scenarios

were given using either foot fungal cream or hemorrhoid cream as chosen from the pretests (scenarios available in Table 4). The data was cleaned so that extreme incorrect perceptions of the manipulations were dropped (i.e., for the high manipulation, any responders who answered below “2” were dropped. For the low manipulation, any responders who answered above “6” were dropped). Eight responses were deleted from the high physical manipulation for rating it low and 13 were deleted from low physical for perceiving the encroachment as high. Likewise, four were deleted from high visual for perceiving the manipulation as low and 55 were deleted from low visual for misperceiving the manipulation as highly encroaching. The high number of misperceptions in the low visual manipulation is likely due to the spotlight effect (Gilovich et al., 2000). As the variables of interest were encroachments, missed perceptions were deleted as outliers of the manipulations and manipulation check failures (Soman, 2003; Wolfe and Loraas, 2008; Rosette and Livingston, 2012; Burman and Biswas, 2007). Two outliers were also removed from the data as their standardized z-score for any of the dependent variables was greater than three (Balota et al., 2007).

A filter question was included in the survey (e.g., if you are reading this please select "Strongly Agree") to ensure the data being analyzed came from participants who read the survey items (Oppenheimer et al., 2009). Participants who did not correctly answer the filter question were not allowed to complete the survey and their results were not used (n=27). The data collection process resulted in 128 complete surveys useable for foot fungal cream and 140 useable surveys for hemorrhoid cream. The first three hypotheses used ANCOVA analysis with anxiety, expressiveness, and anonymity as controls (items available in Table 6; anxiety and embarrassment showed discriminant validity for the main test like they did in pretest 1 and were used as separate constructs for the remainder of the studies). Anxiety and expressiveness were

used as controls as these product-related emotions can influence shopping behavior (Menon and Kahn, 2002) and judgments about the situation (Dube and Morgan, 1996). As proximity is a component of anonymity and it can reduce a person's fear of social disapproval or valuation (Pinsonneault and Heppel, 1998). One item for anonymity was used as a control so the effect of privacy on the threats could be seen without the impact of anonymity.

Subjects

A total of 360 participants were given a fee of $0.75 for completion of the survey. After data purification, data included 128 complete surveys useable for foot fungal cream and 140 useable surveys for hemorrhoid cream. For foot fungal cream, 47.1% of respondents were male and 67.4% were between the ages of 21-40. With the second product, hemorrhoid cream, 43.6% were male and 65% were between the ages of 21-40.

Measurement Reliability and Validity

Each item was loaded onto its intended construct in AMOS in a measurement model for analysis. Study 1's measurement model included categorization threat (5 items), acceptance threat (3 items), purchase pressure (5 items), anxiety (3 items; used as a control), and expressiveness (3 items; used as a control). Anonymity was not included in the measurement model as it only consisted of one item for use as a control and a construct should consist of three items for measurement (Anderson and garbing, 1982). All items for study 1 are available in Table 6. Additional items and constructs were collected but not used in the measurement model as the variables were not used for the ANCOVA and regression analyses. These additional items were collected for use as possible controls and for post hoc analysis should product differences be found.

Foot Fungal

There were no negative error terms and all standardized coefficients were above .7 with the exception of two items for purchase pressure which had coefficients of .695 and .60 and one item for expressiveness that had a coefficient of .65. For satisfactory measurement, all items must have an estimation preferably above .7, but a minimum of .5, with their intended variable (Hair et al., 1998). Additionally, these items were all from previously established scales. Therefore the items were deemed satisfactory as they were above .5 and showed discriminant validity with other constructs. Standard errors ranged between .04 and .14. Modification indices greater than 10 only involved errors terms; therefore, it is not concerning that items loaded onto multiple factors (Fassinger, 1987). There were no unsatisfactory modification indices between an item and a construct. The composite reliability was above .70 for all constructs (ranging from .85 to .97) (Churchill, 1979) and the average variance extracted was above .50 (ranging from .62 to .89) (Garver and Mentzer, 1999). Additionally, according to Fornell and Larcker (1981), the average variance extracted (AVE) for all the constructs must be greater than their squared correlation in order to conclude that the latent variable explains more variance in the items than measurement error or other variables in the model (see Table 14 for loadings, reliabilities, and AVE). As the AVE for all constructs were higher in the measurement model than the squared correlation (see Table 15 for correlations), all items were deemed satisfactory in measuring the construct they intended to and not measuring more than one construct.

In pretest 2, anxiety and discomfort did not show discriminant validity. However, these two items did show discriminant validity for the main test (which is consistent with pretest 1). The two constructs were then kept separate for the main test results of study 1 as well as additional studies thereafter.

Table 14: Measurement Statistics for Foot Fungal Cream for Study 1

	Standardized Loadings	Composite Reliability	Average Variance Extracted
Purchase Pressure (1)	0.80	0.85	0.62
2	0.70		
3	0.60		
4	0.80		
5	0.76		
Categorization threat (1)	0.97	0.97	0.89
2	0.95		
3	0.95		
4	0.89		
5	0.95		
Acceptance threat (1)	0.95	0.95	0.86
2	0.94		
3	0.89		
Expressiveness (1)	0.81	0.85	0.66
2	0.96		
3	0.65		
Anxiety (1)	0.96	0.95	0.86
2	0.91		
3	0.92		

Table 15: Correlation Table for Foot Fungal Cream for Study 1

Construct	1	2	3	4	5	6
Purchase Pressure (1)	1					
Categorization Threat (2)	.47	1				
Acceptance Threat (3)	.44	.85	1			
Expressiveness (4)	.32	-.02	-.07	1		
Anxiety (5)	.40	.56	.60	.03	1	
Anonymity (6)*	-.12	-.13	-.08	-.07	-.32	1

*Single item

Hemorrhoid Cream

There were no negative error terms and all standardized coefficients were above .7 with the exception of two items for purchase pressure which had coefficients of .57 and .51. For satisfactory measurement, all items must have an estimation preferably above .7, but a minimum of .5, with their intended variable (Hair et al., 1998). Additionally, these items were all from previously established scales. Therefore, the items were deemed satisfactory as they were above .5 and showed discriminant validity with other constructs. Standard errors ranged between .05 and .15. Modification indices greater than 10 only involved errors terms; therefore, it is not concerning that items loaded onto multiple factors (Fassinger, 1987). There were no unsatisfactory modification indices between an item and a construct. The composite reliability was above .70 for all constructs (ranging from .80 to .97) (Churchill, 1979) and the average variance extracted was above .50 (ranging from .51 to .89) (Garver and Mentzer, 1999). Additionally, according to Fornell and Larcker (1981), the average variance extracted (AVE) for all the constructs must be greater than their squared correlation in order to conclude that the latent variable explains more variance in the items than measurement error or other variables in the model (see Table 16 for loadings, reliabilities, and AVE). As the AVE for all constructs were higher in the measurement model than the squared correlation (see Table 17 for correlations), all items were deemed satisfactory in measuring the construct they intended to and not measuring more than one construct.

Common Method Bias

Several tests were conducted to ensure common method bias (CMB) was not a factor in the data. Harman's single factor test (Podsakoff et al., 2003; Podsakoff and Organ, 1986)

Table 16: Measurement Statistics for Hemorrhoid Cream for Study 1

	Standardized Loadings	Composite Reliability	Average Variance Extracted
Purchase Pressure (1)	0.76	0.80	0.51
2	0.57		
3	0.51		
4	0.76		
5	0.73		
Categorization threat (1)	0.93	0.97	0.86
2	0.97		
3	0.98		
4	0.87		
5	0.89		
Acceptance threat (1)	0.95	0.96	0.89
2	0.98		
3	0.90		
Expressiveness (1)	0.95	0.91	0.77
2	0.87		
3	0.81		
Anxiety (1)	0.96	0.91	0.77
2	0.84		
3	0.82		

Table 17: Correlation Table for Hemorrhoid Cream for Study 1

Construct	1	2	3	4	5	
Purchase Pressure (1)	1					
Categorization Threat (2)	.40	1				
Acceptance Threat (3)	.41	.75	1			
Expressiveness (4)	.08	.02	-.06	1		
Anxiety (5)	.29	.56	.53	.08	1	
Anonymity (6)*	-.09	-.26	-.22	.01	-.34	1

*Single item

suggests running an exploratory factor analysis (EFA) to ensure that the top loaded factor does not exceed 50% of all variance.

A Varimax rotation was used with Eigenvalues loading at greater than 1. The five variables (categorization threat, acceptance threat, purchase pressure, anxiety, and expressiveness) were used for this test. For foot fungal the factors that emerged each accounted for more than 5% variance (Hatcher, 1994). The first component accounted for 46.31% of variance, and the second component accounted for 16.06%. For hemorrhoid cream each factor also accounted for more than 5% variance (Hatcher, 1994). The first factor accounted for 42.78% of variance, and the second factor accounted for 14.64%. Common method bias is not a problem for either product according to Harman's single factor test.

The second test conducted was a common latent factor test. A common method variable (CMV) was created in the measurement model in AMOS, all items were linked to the CMV as well as their original intended construct, and all paths were constrained to be equal. Therefore, the regression path would result in the same number for all paths from the CMV to all items, allowing for a single number that accounts for common method bias. This test is to show how much variance for all the items can be accounted to a single factor (the CMV; see Figure 5 for illustrative example) (Gaskin, 2011). For foot fungal data, the resulting regression weight for the CMV to each item was .119 (the weight was .119 for each path from the CMV to item as the path was constrained to be equal), which equals .0142 when squared. The common variance accounted for by this test is 1.42%, which does not suggest a problem of CMB (Gaskin, 2011). According to the Harman's single factor test, common method bias should account for less than the majority (50%) of variance (Podsakoff and Organ, 1986; Gaskin, 2011). For hemorrhoid cream, the regression weight for the CMV to the items was .363 which is .1318 when squared.

The common variance for hemorrhoid cream was 13.18%, which again does not suggest a problem of common method bias.

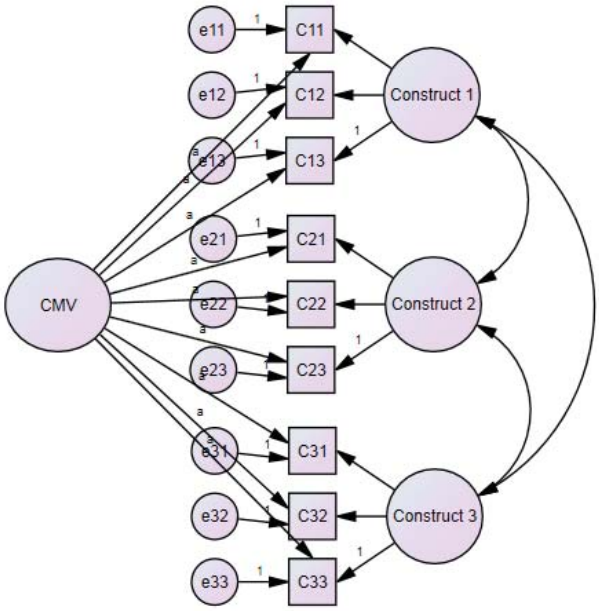


Figure 5: Illustrative Example of Testing for Common Method Bias in AMOS

Manipulation Checks

Foot Fungal Cream

Manipulation checks were conducted on the data to ensure the manipulations were adequately perceived. Manipulation checks for physical encroachment included three items of very distant/very close, very far away/ very near, and not close/ very close by, which had good reliability (α= .99) and were combined to create a mean score. In the physical manipulation, low physical encroachment (e.g., no employee is physically close to you) had a mean of 2.41 and high physical encroachment (e.g., an employee has come to look at the same product you are at and is standing very close to you) had a mean of 6.43, significant at $p<.001$.

Manipulation checks for visual encroachment include four items of not watched/ very watched, not observed/ very observed, not paid attention to/ very paid attention to, and not looked at/ very looked at. These items also had good reliability (α= .99) and were combined to create a mean score. Low visual encroachment (e.g., no employee is watching you or can see what you are doing) had a mean of 1.82, and high visual encroachment (e.g., an employee is watching you) had a mean of 6.20, significantly different at p<.001. Both physical and visual manipulations were successful in the main test data collection.

Hemorrhoid Cream

Manipulation checks for physical encroachment included the same three items as used for foot fungal cream with good reliability (α= .99), and a mean score was created. In the physical manipulation, low physical encroachment had a mean of 2.06 and high physical encroachment had a mean of 6.30, significant at p<.001.

The same items used for foot fungal cream were also used for hemorrhoid cream. The items had good reliability (α= .99) and were combined to create a mean score. Low visual encroachment had a mean of 1.86, and high visual encroachment had a mean of 6.23, significantly different at p<.001. Both physical and visual manipulations were successful in the main test data collection for hemorrhoid cream as well.

Confound Checks

To ensure that one manipulation was not confounding the other, a test was conducted according to Perdue and Summers (1986). In this analysis, an ANOVA is run with both manipulations and their interaction as independent variables and the manipulations check of the manipulation in question as the dependent variable. Only the manipulation related to the manipulation check should be significant. Any other significant manipulations must have a

relatively small partial eta squared value to suggest the confounding manipulation is not overpowering the manipulation in question (Perdue and Summers, 1986).

Foot Fungal Cream

For the physical encroachment confounding check, the physical manipulation is significant at p<.001 with a partial eta squared of .85 (see Table 18 for results). However, both the visual manipulation (p<.001) and interaction (p<.001) were significant as well. The partial eta squared of visual was .23 and partial eta squared of the interaction was .16, which are both relatively small compared to the partial eta squared of physical, suggesting that confounding manipulations are not largely impacting the results.

The independent variable of visual encroachment was a significant predictor of the visual manipulation check with p<.001 and a partial eta squared of .82. Physical encroachment was significant at p<.001 and a partial eta squared of .17. The interaction was not significant at p=.19. The partial eta squared of the physical manipulation was relatively small compared to the partial eta squared of visual, suggesting that the visual manipulation was not largely confounded by the physical manipulation.

Table 18: Confounding Check Results for Foot Fungal Cream for Study 1

Manipulation	Physical MC	Visual MC
Physical	**p<.001, η=.85**	p<.001, η=.17
Visual	p<.001, η=.23	**p<.001, η=.82**
Physical * visual	p<.001, η=.16	P=.19

Hemorrhoid Cream

For the physical encroachment confounding check, the physical manipulation is significant at p<.001 with a partial eta squared of .83 (see Table 19). However, again both the visual manipulation (p<.01) and interaction (p<.001) were significant as well. The partial eta squared of visual was .08 and partial eta squared of the interaction was .12, which are both relatively small compared to the partial eta squared of physical, suggesting that confounding manipulations are not largely impacting the results.

For the visual confounding check, visual encroachment was a significant independent variable to the visual manipulation check with p<.001 and a partial eta squared of .84. Physical encroachment was significant at p<.01 and a partial eta squared of .06. The interaction was not significant at p=.48. The partial eta squared of the physical manipulation was relatively small compared to the partial eta squared of visual, again suggesting that the visual manipulation was not largely confounded by the physical manipulation.

Table 19: Confounding Check Results for Hemorrhoid Cream for Study 1

Manipulation	Physical MC	Visual MC
Physical	**p<.001, η=.83**	p<.01, η=.06
Visual	p<.01, η=.08	**p<.001, η=.84**
Physical * visual	p<.001, η=.12	P=.48

Results

Analysis for hypotheses 1-3 was conducted using ANCOVA. Both the physical and visual categorical variables (low/high) were placed as fixed factors with either categorization threat or acceptance threat as the dependent variable (DV). This method was used as the

independent variables (IV) were categorical and the DV was continuous. The controls (anxiety, expressiveness, anonymity) were used as covariates. H4 used a regression analysis as the independent variable (IV) was continuous and the dependent variable (DV) was also continuous. H5 and H6 used Preacher and Hayes' (2008) bootstrap method for mediation.

Hypothesis 1a predicts higher levels of physical encroachment will have a negative relationship to categorization threat. Using an ANCOVA with categorization threat as the dependent variable, the foot fungal cream showed a difference between low and high encroachment ($F(1,128)=9.32$, $p<.01$, $mean_{low}= 3.75$; $mean_{high}= 2.88$) which supports hypothesis 1a. The low encroachment had a higher categorization threat mean, showing that categorization threat went down in the higher physical encroachment scenario. For hemorrhoid cream, however, the results were only marginally significant [$F(1,140)=2.77$, $p=.099$, ($mean_{low}= 4.21$; $mean_{high}= 3.75$)], showing that there is only a marginal difference in categorization threat among the two levels of physical encroachment. Therefore, hypothesis 1a is only fully supported with foot fungal cream (summary of hypotheses for study 1 found in Table 22).

Hypothesis 1b suggests that higher levels of physical encroachment will have a negative relationship to acceptance threat. For foot fungal cream, results ($F(1,128)=8.55$ $p<.01$, $mean_{low}= 3.55$; $mean_{high}= 2.75$), support the hypothesis that acceptance threat is lower in higher physical encroachment situations. Hemorrhoid cream showed similar results ($F(1,140)=10.21$, $p<.01$, $mean_{low}= 4.20$; $mean_{high}= 3.29$), thus lending full support to H1b as the results were consistent for both products tested.

Hypothesis 2a says that higher levels of visual encroachment have a negative relationship to categorization threat. This was marginally supported for both products: Foot fungal: ($F(1,128)=3.82$, $p=.053$, $mean_{low}= 3.59$; $mean_{high}= 3.04$); Hemorrhoid cream: ($F(1,140)=2.78$,

p=.098, $mean_{low}$= 4.21; $mean_{high}$= 3.75). For hypothesis 2b, where the prediction was that higher levels of visual encroachment would have a negative relationship to acceptance threat, only hemorrhoid cream showed support: Foot fungal: (F(1,128)=.30, p=.59, $mean_{low}$= 3.22; $mean_{high}$= 3.07); hemorrhoid cream (F(1,140)=4.21, p<.05, $mean_{low}$= 4.04; $mean_{high}$= 3.45). Results marginally supported H2a for both products and only supported H2b for hemorrhoid cream.

Hypotheses 3a and b state that the interaction of visual and physical encroachment will have a negative effect on (a) categorization threat and (b) acceptance threat. For categorization threat, foot fungal cream was not significant (F(1,128)=.45, p=.51), and neither was hemorrhoid cream (F(1,140)=1.62, p=.21), therefore not supporting H3a. For acceptance threat, foot fungal cream was again not significant (F(1,128)=.21, p=.65) as well as hemorrhoid cream (F(1,140)=.84, p=.36), not supporting H3b either.

Hypotheses 4a and 4b both used regression to test the relationships. H4a says that categorization threat has a positive relationship to purchase pressure, which is supported with both foot fungal cream and hemorrhoid cream data sets. The regression was supported for both foot fungal cream (β=.44, t=5.67, p<.001) and hemorrhoid cream (β=.38, t=4.88, p<.001), fully supporting H4a across both products. Hypothesis 4b says that acceptance threat will have a positive relationship to purchase pressure. This hypothesis was significant for foot fungal cream (β=.42, t=5.36, p<.001) and hemorrhoid cream (β=.36, t=4.57, p<.001), thus fully supporting H4b as well.

Hypotheses 5 and 6 both predicted mediation of the threats between encroachments and purchase pressure. H5a specifically said categorization threat mediates physical encroachment and purchase pressure where H5b related to acceptance threat as the mediator between physical encroachment and purchase pressure. Preacher and Hayes' bootstrap method (Preacher and

Hayes, 2008; Zhao, Lynch, and Chen, 2010) was used to test these relationships. It is important to clarify that for the mediation tests, a single path does not have to reach significance at $p<.05$ to indicate mediation. A variable may be a mediator and the indirect effect significant even if an individual path fails to reach full significance. An indirect effect is represented by the product of path "a" x path "b" where path is the independent variable regressed on the mediator and path b is the mediator regressed on the dependent variable (see Figure 6 which is an illustration of mediation paths). It is important, however, for the coefficients to be in the right direction (positive or negative) as predicted (Hayes, 2009).

For H5a, physical encroachment was the independent variable, purchase pressure the dependent variable, and categorization threat as the mediator. Beginning with foot fungal, the path from physical encroachment to purchase pressure as mediated through categorization threat (H5a) had a significant mean indirect effect (i.e., a x b; $\beta= -.20$), with a 95% confidence interval excluding zero (-.40 to -.06). The 95% confidence interval will not include zero if the indirect effect is significant and mediation is suggested. The direct effect of physical encroachment on purchase pressure was not significant ($p=.45$), suggesting indirect-only mediation (Zhao, Lynch, and Chen, 2010). This type of mediation is similar to full mediation as outlined by Baron and Kenny (1986) (Mogilner, Aaker, and Kamvar, 2012). Please see Table 20 for full reporting of the indirect effect (β), 95% confidence interval, the unstandardized regression coefficients for a, b, and c, as well as the product of the three paths and mediation type for foot fungal cream in study 1. When the a x b indirect path is not significant (i.e., the 95% confidence interval includes zero), this suggests non-mediation (if the c-path is significant there is likely an omitted mediator). When the indirect path is significant (i.e., 95% confidence interval does not include zero) this suggests mediation. When mediation is suggested, if the c path is not significant, this suggests

indirect only mediation (similar to Baron and Kenny's full mediation). If the c-path is significant when mediation is suggested this suggests complementary or competitive mediation. Complementary mediation (similar to partial mediation) is determined if the a x b x c product is positive and is called competitive mediation if the product is negative (Zhao, Lunch, & Chen, 2010).

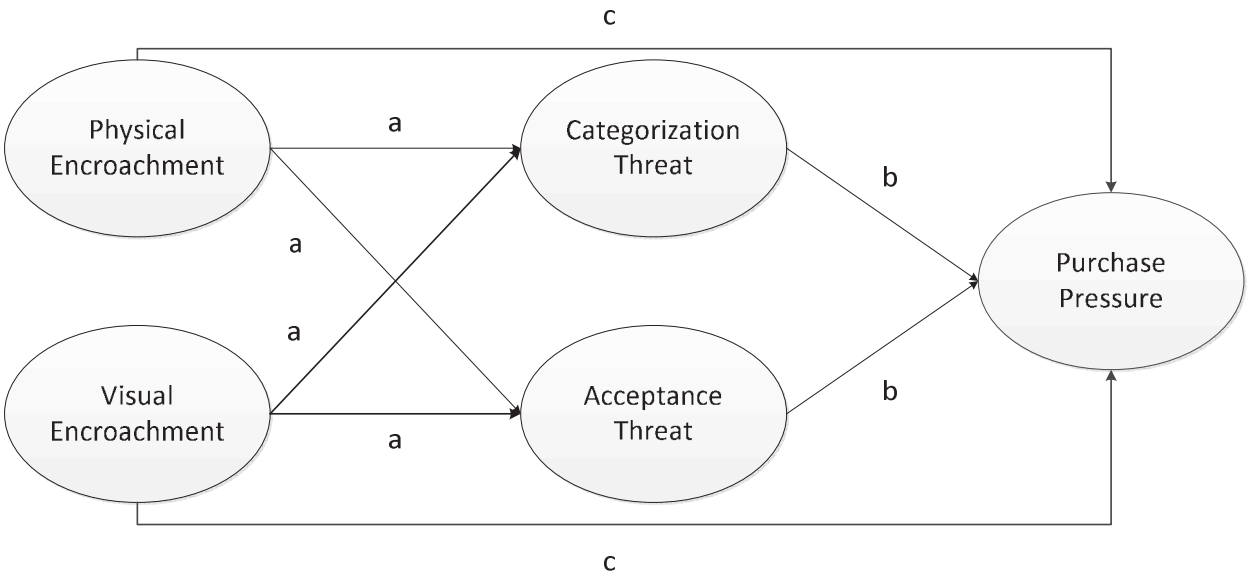


Figure 6: Preacher & Hayes Bootstrap Mediation Illustration

The mediation path from physical encroachment to purchase pressure for foot fungal cream as mediated through acceptance threat (H5b) also had a significant mean indirect effect (β= -20) with a 95% confidence interval excluding zero (-.43 to -.05). The direct effect of physical encroachment on purchase pressure was not significant (p=.49), again indicating indirect-only mediation (Zhao, Lynch, and Chen, 2010). The mediation effects of categorization

threat and acceptance threat for visual's path to purchase pressure (H6a and H6b) in foot fungal cream were not significant, indicating no mediation (see Table 20). These results support H5a and H5b for foot fungal cream, but not H6a or H6b.

Table 20: Mediation Results for Foot Fungal Cream Study 1

Mediation Path	Indirect effect β (a x b)	95% confidence interval	a	b	c	a x b x c	Mediation type?
Physical→ CT	-.20	-.40 to -.06	-.72	.28	-.15 (p=.45)	.03	Indirect only
Physical→ AT	-.20	-.43 to -.05	-.68	.29	-.15 (p=.49)	.03	Indirect only
Visual→ CT	-.1120	-.29 to .03	-.40	.28	-.01 (p=.97)	.001	No effect
Visual→ AT	.0394	-.01 to .20	-.29	.14	.11 (p=.60)	-.004	No effect

Hemorrhoid cream saw flipped results. The mediation of categorization threat and acceptance threat were not significant for physical's relationship with purchase pressure (H5a and H5b; see Table 21). However, the path from visual to purchase pressure as mediated through categorization threat (H6a) for hemorrhoid cream did have a significant mean indirect effect (β= -.12), with a 95% confidence interval excluding zero (-.43 to -.0004). The direct effect of visual encroachment on purchase pressure was not significant (p=.20), suggesting indirect-only mediation (Zhao, Lynch, and Chen, 2010). Likewise, the mediation of path of visual to purchase pressure as mediated through acceptance threat (H6b) had a significant mean indirect effect (β= -.16), with a 95% confidence interval excluding zero (-.38 to -.002). Again, the direct effect was not significant (p=.22), once again suggesting indirect only mediation (Zhao, Lynch, and Chen,

2010), similar to full mediation as outlined by Baron and Kenny (1986). The results for hemorrhoid cream do not support H5a and or H5b, but do support H6a and H6b.

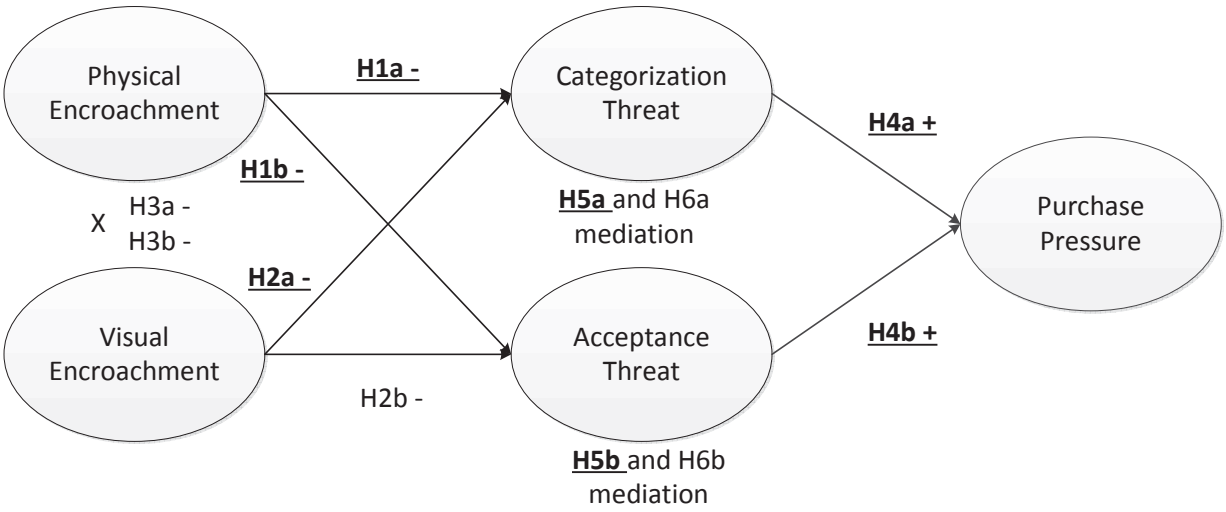
Table 21: Mediation Results for Hemorrhoid Cream Study 1

Mediation Path	Indirect effect β (a x b)	95% confidence interval	a	b	c	a x b x c	Mediation type?
Physical→ CT	-.11	-.31 to .01	-.44	.26	-.50 (p<.05)	.06	Direct (non-mediation)
Physical→ AT	-.04	-.18 to .04	-.50	.09	-.32 (p=.12)	.01	No effect
Visual→ CT	-.12	-.43 to -.0004	-.51	.23	-.31 (p=.20)	.04	Indirect only
Visual→ AT	-.16	-.38 to -.002	-.62	.25	-.29 (p=.22)	.04	Indirect only

Summary of Findings

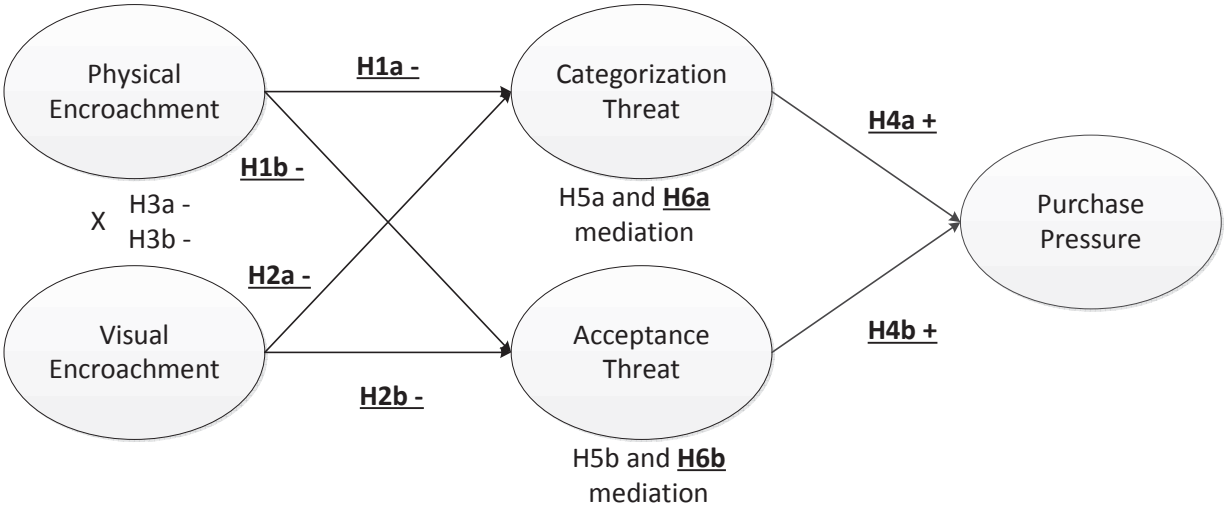
Study 1 tested the front part of the hypothesized model (H1-H6). Overall, the model found support (either marginal or full) except for the interaction results and mixed findings for the mediation analysis. The results for study 1 generally show that an increase in encroachment (physical or visual) does cause less felt threat (categorization and acceptance). An increase in these threats then leads to an increase in purchase pressure. See Figure 7 and Figure 8 for a visual depiction of support in study 1 for each product.

Hypothesis one had high levels of support across both products. Foot fungal cream supported both parts a and b fully, while hemorrhoid cream was marginal for H1a and fully significant for H1b. This suggests that higher levels of physical encroachment have a negative relationship to both categorization threat and acceptance threat as predicted (summary of results



*** Supported hypotheses represented in bold and underlined font**

Figure 7: Significant Findings for Foot Fungal Cream for Study 1



*** Supported hypotheses represented in bold and underlined font**

Figure 8: Significant Findings for Hemorrhoid Cream for Study 1

can be found in Table 22). Hypothesis two found less support. H2a had only marginal results with both products, while H2b only had support with the hemorrhoid cream data and not in foot fungal. This suggests that higher levels of visual encroachment lead to fewer threats, with stronger results for hemorrhoid cream. The significant findings for H1 and H2 are consistent with the threats outlined in social identity theory (Branscombe et al., 1999), showing that physical closeness and visual contact can decrease categorization and acceptance threat as expected.

The inconsistent results can be seen between the two products, due possibly to their differences along emotions associated with the products and frequency of purchase. In study 1, hemorrhoid cream rated higher on both anxiety (meanfoot= 2.77, meanhemorrhoid=3.26, $p<.001$) and embarrassment (meanfoot= 3.13, meanhemorrhoid=3.81, $p<.001$). As characteristics or products can alter emotions that influence shopping behavior (Menon and Kahn, 2002) and judgments (Dube and Morgan, 1996), these differences for anxiety and embarrassment could explain why visual encroachment was only evident in hemorrhoid cream, which was rated higher for both emotions. Additionally, research has noted that familiarity with a purchase can reduce embarrassment associated with making that purchase (Dahl et al., 2001). Foot fungal cream was also different from hemorrhoid on how frequently the item was purchased (meanfoot= 1.53, meanhemorrhoid=1.34, $p<.001$; How often do you purchase the product listed in the scenario: never; rarely; sometimes; often; all of the time) suggesting participants may have been more familiar with purchasing foot fungal cream. This could explain why H2b did not work for foot fungal cream as it was seen as less embarrassing (than hemorrhoid) and the visual encroachment was not a strong enough threat, as reactance theory says it is threats that will cause reactance (Brehm, 1966).

The interactions (H3a and H3b) predicted for physical and visual encroachments were not significant in study 1. This did not match reactance theory, which states that the number of threats increases reactance (Brehm, 1966) or social impact theory (Latante, 1981), which suggested the first threat would have significantly more impact than each additional threat. However, it is expected that the addition of legitimacy of threat in study 2 or the addition of realism in study 3's video scenarios will increase felt threats and should influence the interaction results. A more legitimate threat should lessen reactance (Brehm, 1966), so the manipulated absence of legitimacy in study 2 should show greater reactance to threat that may cause the interaction to be evident.

Hypotheses H4a and H4b were both supported across both products. These results show that both categorization threat and acceptance threat have positive relationships to purchase pressure. This is consistent with reactance theory (Brehm, 1966) and the notion of more threat resulting in more reactance. Hypotheses H5 and H6 stated that the threats would specifically mediate the relationship between encroachments and purchase pressure. H5a and H5b were only supported with foot fungal cream data. This suggests that physical encroachment's relationship to purchase pressure is mediated by both threats, but only for foot fungal cream. Conversely, H6a and H6b were only supported with hemorrhoid cream, meaning visual encroachment's relationship to purchase pressure is mediated by the threats only for hemorrhoid cream data. Again, the product differences as explored above could help explain why foot fungal cream and hemorrhoid cream react differently to physical and visual encroachment.

Table 22: Summary of Findings for Study 1

Hypothesis	Foot Fungal	Hemorrhoid
H1a: Higher levels of physical encroachment have a negative relationship to categorization threat	Supported	Marginal
H1b: Higher levels of physical encroachment have a negative relationship to acceptance threat	Supported	Supported
H2a: Higher levels of visual encroachment have a negative relationship to categorization threat	Marginal	Marginal
H2b: Higher levels of visual encroachment have a negative relationship to acceptance threat	Not Supported	Supported
H3a: There will be an interaction of physical and visual encroachment such that there will be a significant difference of categorization threat in low physical encroachment across levels of visual encroachment, but there will not be a significant difference of categorization threat in high encroachment across levels of visual encroachment.	Not Supported	Not Supported
H3b: There will be an interaction of physical and visual encroachment such that there will be a significant difference of acceptance threat in low physical encroachment across levels of visual encroachment, but there will not be a significant difference of acceptance threat in high encroachment across levels of visual encroachment.	Not Supported	Not Supported
H4a: Categorization threat has a positive relationship to purchase pressure	Supported	Supported
H4b: Acceptance threat has a positive relationship to purchase pressure	Supported	Supported
H5a: Categorization threat mediates physical encroachment and purchase pressure	Supported	Not Supported
H5b: Acceptance threat mediates physical encroachment and purchase pressure	Supported	Not Supported
H6a: Categorization threat mediates visual encroachment and purchase pressure	Not Supported	Supported
H6b: Acceptance threat mediates visual encroachment and purchase pressure	Not Supported	Supported

Study 2: Examination of the Moderator

Overview

The purpose of study 2 was to replicate study 1 and test the addition of a moderator, legitimacy. Study 2 will use the same framework as study 1, replicating the findings and adding the examination of legitimacy of threat to test hypothesis seven. Two products will be used in study 2 (foot fungal cream and hemorrhoid cream, the same as in study 1 to show consistency) with an additional manipulation of legitimacy of threat (as operationalized by appropriateness of encroachment. The manipulation of legitimacy of threat will be pretested.). Reactance theory (Brehm, 1966) states that a legitimate reason for a threat will reduce reactance. Study 2 will test this variable as a moderator of the encroachments and threats from study 1. Study 2 will be a 2 (high/low visual encroachment) x 2 (high/low physical encroachment) x 2 (legitimacy of threat: low/high) design using 2 products resulting in 16 scenarios.

For this study, a pretest will first be discussed which assesses the manipulation of legitimacy of threat. Next, the main test will be presented as it was for study 1. The procedure and design will be discussed first. Then subjects, measurement, common method bias, manipulation checks, and confound checks will be reviewed for each product before the results for the hypotheses. The study will conclude with a summary of findings.

Pretest

This pretest was conducted to ensure adequate perception of the legitimacy manipulation. Legitimacy of threat was pretested in the actual scenarios to ensure the manipulation worked when embedded in the larger and more detailed scenarios that would be used for the main study. The scenarios were placed online with manipulation checks for each variable. As in study 1, a

product was not specified in the scenario to ensure adequate assessment of the manipulations without effects of the products. One hundred participants on M-turk completed the pretest. Participants were randomly given one of the sixteen scenarios and asked to imagine themselves purchasing the listed product in the described situation. Then participants were asked to answer a series of questions that were manipulation checks. Manipulation checks for physical encroachment included three items of very distant/very close, very far away/ very near, and not close/ very close. These were the same items used in study 1. The items had good reliability (α= .95) and were collapsed to create a mean score. The physical manipulation was successful with a low physical (e.g., no employee is physically close to you) mean of 2.85 and a high physical (e.g., an employee has come to the same product you are at and is standing very close to you) mean of 5.44, significant at $p<.001$.

Manipulation checks for visual encroachment included the four items used in study 1 including: not watched/ very watched, not observed/ very observed, not paid attention to/ very paid attention to, and not looked at/ very looked at. These items had good reliability (α= .97) and were combined to create a mean score. The visual manipulation was also successful with a low visual (e.g., no employee is watching you or can see what you are doing) mean of 4.13 and a high visual (e.g., an employee is watching you) mean of 5.51 $p<.001$.

Items used for the legitimacy manipulation check included: the employee's behavior was acceptable, the employee's behavior was normal, the employee's behavior was legitimate, the employee's behavior was desirable, the employee's behavior was proper, the employee's behavior was appropriate, and the employee's behavior was fair. The items showed good reliability (α= .94) and were combined to create a mean score. The legitimacy manipulation showed significant difference between the low legitimacy (e.g., their behavior seems

inappropriate and abnormal, mean = 2.82) and high legitimacy (e.g., their behavior seems appropriate and normal, mean = 4.13; $p<.001$). As there were seven checks for legitimacy, an EFA was conducted with a Varimax rotated component matrix. All items loaded onto one factor with Eigenvalues greater than one.

A confounding check analysis was also conducted for the pretest to check that no manipulation greatly impacted another. All three categorical variables (physical, visual, and legitimacy) were set as IVs and the manipulation check in question was set as the DV. Only the manipulation related to the manipulation check should be significant or have a relatively small partial eta square. For the physical manipulation check (i.e., the physical manipulation check was the DV), the physical manipulation was significant at $p<.001$ and the partial eta squared was .265. The legitimacy manipulation was not significant ($p=.07$, $\eta^2=.04$) but visual was ($p<.05$), although the partial eta squared for visual was .05 which is relatively small compared to the effect size of physical. Therefore, visual and legitimacy manipulations did not confound the physical manipulation in the pretest.

For the visual manipulation check, only the visual manipulation was a significant predictor ($p<.001$, $\eta^2=.21$), while physical ($p=.18$) and legitimacy ($p=.70$) manipulations were not. Therefore the visual manipulation was not confounded by the other manipulations.

Lastly, for the legitimacy manipulation confound check, the legitimacy manipulation significantly predicted the legitimacy manipulation check combined items ($p<.001$, $\eta^2=.26$). The physical manipulation ($p<.01$, $\eta^2=.09$) and visual manipulation ($p<.05$, $\eta^2=.05$) also significantly predicted the legitimacy manipulation, but had relatively small partial etas squared. All manipulations and items were decided to be appropriate according to the pretest and useable for the main test data collection.

Main Test

Procedure

Participants were first given a brief description of the survey and asked for their consent. They were told, "Thank you for your willingness to help with this survey. This survey should take approximately 7-10 minutes to complete. Your responses will be completely confidential. Your participation will help us understand more about retail shopping. Your participation in this study is voluntary and if at any point you wish to discontinue, you may quit the survey and will not receive compensation. Only complete surveys will receive compensation. If you agree to these terms and give your consent for your responses to be used in the study, please click I agree."

Once participants agreed to the conditions of the survey, they were then told, "On the next page is a scenario about a shopping trip. Please imagine yourself in the scenario as described. Following the scenario is a series of questions regarding your imagined shopping trip. Please answer the questions as accurately as possible as if you really had a shopping experience as described." Following the instructions was one of the manipulated scenarios. Participants were randomly assigned a scenario to read, and then the survey questions followed. A filter question had to be correctly answered for participants to complete the survey, and incomplete responses were not compensated.

Design

Data was collected with a 2 x 2 x 2 design. Factor one was physical encroachment (low versus high) and factor two was visual encroachment (low versus high), as in study 1. The third factor was the addition of legitimacy (low versus high), which resulted in eight scenarios for

each (foot fungal cream and hemorrhoid cream) product. As in study 1, several cases were deleted due to missed reading check questions (n=46), incomplete surveys (n=24), and misperception of manipulations (n=65). Cases were deleted in high manipulation scenarios that rated the manipulation below a "2," indicating the perceived the manipulation to be low. In the low manipulations, cases that rated the manipulation above "6" were deleted as they misperceived the manipulation to be high (Soman, 2003; Wolfe and Loraas, 2008; Rosette and Livingston, 2012; Burman and Biswas, 2007). There were no outliers in the remaining data. A filter question was included in the survey (e.g., if you are reading this please select "Strongly Agree") to ensure the data being analyzed came from participants who read the survey items (Oppenheimer et al., 2009). Participants who did not correctly answer the filter question were not allowed to complete the survey and their results were not used. The data set used resulted in 220 useable cases for foot fungal cream and 205 cases for hemorrhoid cream.

The first three hypotheses used ANCOVA analysis with anxiety, expressiveness, and anonymity as controls (items available in Table 6), as in study 1. An additional control of loyalty to the retailer was added to study 2 as loyalty is related to the legitimacy of an entity (Everard and Galletta, 2006; Skanker et al., 2002; Ball et al., 2004; Flavian and Guinaliu, 2006).

As in study 1, hypothesis four was tested with regression analysis and hypotheses five and six used Preacher and Hayes' (2008) bootstrap mediation method. New to study 2, hypothesis seven was tested using ANCOVA as the interaction in question was between categorical variables and the DV was continuous.

Subjects

A total of 560 m-turk users were randomly given one of the 16 scenarios for a nominal fee of $0.75. After data purification, the data set used resulted in 220 useable cases for foot

fungal cream and 205 cases for hemorrhoid cream. For foot fungal cream, 55.5% of respondents were male with an average age of 32 (age was not a categorical variable but rather participants entered their age in whole numbers). The majority of participants, 80.6%, were between the ages of 19-40, with ages ranging from 18-74. For hemorrhoid cream, 62.7% were male with an average age of 32.28. The majority of participants, 79.2%, were between the ages of 19-40, and ages ranged from 18-76.

Measurement Reliability and Validity

Study 2's measurement model included the same variables as study 1: categorization threat (5 items), acceptance threat (3 items), purchase pressure (5 items), anxiety (3 items for control), and expressiveness (3 items for control). Again, anonymity and loyalty were not included in the measurement model as they were single item controls. The items used in study 2 are available in Table 6 (with the exception of the legitimacy manipulation check items, which are available in Table 8. Manipulation check items are not included in a measurement model. Additionally, loyalty was not included in the measurement model as a construct needs three items to be a multi item scale (Anderson and Gerbing, 1982) and loyalty is used as one item). Each item was loaded onto its intended construct in AMOS in a measurement model for analysis.

Foot Fungal Cream

There were no negative error terms, and all standardized coefficients were over .7. For satisfactory measurement, all items must have an estimation preferably above .7, but a minimum of .5, with their intended variable (Hair et al., 1998). Standard errors ranged between .03 - .07. Modification indices greater than 10 were all involving errors terms. There were no unsatisfactory modification indices between an item and a construct. The composite reliability was above .70 (ranging from .90 to .97) for all constructs, and the average variance extracted was

above .50 (ranging from .76 to .92; see Table 23 for loadings, reliabilities, and AVE). Additionally, the average variance extracted for all the constructs was greater than the squared correlation (Fornell and Larckner, 1981) (see Table 24 for correlations). All items were therefore deemed satisfactory in measuring the contrast they intended to and not measuring more than one construct.

Table 23: Measurement Statistics for Foot Fungal Cream for Study 2

	Standardized Loadings	Composite Reliability	Average Variance Extracted
Purchase Pressure (1)	0.84	0.93	0.88
2	0.88		
3	0.71		
4	0.92		
5	0.90		
Categorization threat (1)	0.89	0.96	0.83
2	0.94		
3	0.92		
4	0.89		
5	0.91		
Acceptance threat (1)	0.96	0.97	0.92
2	0.98		
3	0.95		
Expressiveness (1)	0.93	0.93	0.81
2	0.87		
3	0.90		
Anxiety (1)	0.87	0.90	0.76
2	0.97		
3	0.77		

Table 24: Correlation Table for Foot Fungal Cream for Study 2

Construct	1	2	3	4	5	6	7
Purchase Pressure (1)	1						
Categorization Threat (2)	.45	1					
Acceptance Threat (3)	.40	.89	1				
Expressiveness (4)	.37	.20	.15	1			
Anxiety (5)	.36	.44	.44	.07	1		
Anonymity (6)*	-.24	-.22	-.21	.21	-.42	1	
Loyalty (7)*	-.16	-.29	-.30	.14	-.44	.48	1

Hemorrhoid Cream

There were no negative error terms, and all standardized coefficients were over .7, with the exception of one item for purchase pressure that was .695. For satisfactory measurement, all items must have an estimation preferably above.7, but a minimum of .5, with their intended variable (Hair et al., 1998). Standard errors ranged between .04 - .08. Modification indices greater than 10 were all with errors terms. There were no unsatisfactory modification indices between an item and a construct. The composite reliability was above .70 (ranging from .91 to .97) for all constructs, and the average variance extracted was above .50 (ranging from .79 to .86) (see Table 25 for loadings, reliabilities, and AVE). Additionally, the average variance extracted for all the constructs was greater than the squared correlation (Fornell and Larckner, 1981) (see Table 26 for correlations). All items were therefore deemed satisfactory in measuring the contrast they intended to and not measuring more than one construct.

Common Method Bias

As was done in study 1, several tests were conducted to ensure common method bias (CMB) was not a factor in the data. Harman's single factor test (Podsakoff et al., 2003; Podsakoff and Organ, 1986) suggests running an exploratory factor analysis (EFA) to ensure that the top loaded factor does not exceed 50% of all variance. The variables used in this test included purchase pressure, categorization threat, acceptance threat, anxiety, and expressiveness. For foot fungal cream, the analysis produced more than factor. The first component accounted for 46.89%

Table 25: Measurement Statistics for Hemorrhoid Cream for Study 2

	Standardized Loadings	Composite Reliability	Average Variance Extracted
Purchase Pressure (1)	0.83	0.91	0.79
2	0.83		
3	0.70		
4	0.88		
5	0.84		
Categorization threat (1)	0.92	0.97	0.86
2	0.94		
3	0.96		
4	0.89		
5	0.92		
Acceptance threat (1)	0.94	0.95	0.86
2	0.96		
3	0.88		
Expressiveness (1)	0.94	0.95	0.86
2	0.92		
3	0.92		
Anxiety (1)	0.93	0.93	0.81
2	0.94		
3	0.84		

Table 26: Correlation Table for Hemorrhoid Cream for Study 2

Construct	1	2	3	4	5
Purchase Pressure (1)	1				
Categorization Threat (2)	.48	1			
Acceptance Threat (3)	.41	.78	1		
Expressiveness (4)	.39	.16	.10	1	
Anxiety (5)	.36	.51	.56	-.02	1

of variance, and the second component account for 16.57% (Podsakoff and Organ, 1986). Additionally, each factor given accounted for more than 5% variance (Hatcher, 1994). For hemorrhoid cream, more than one factor emerged and the first factor accounted for 46.91% of variance and the second factor accounted for 17.07%. Additionally, each factor given accounted for more than 5% variance (Hatcher, 1994). For both products, there is more than one factor, and the top factor does not account for more than 50% (Podsakoff et al., 2003; Podsakoff and Organ, 1986), and each factor accounted for more than 5% variance (Hatcher, 1994). This suggests common method bias is not problematic for study 2.

The second test conducted was a common latent factor test. A common method variable (CMV) was created in the measurement model in AMOS, all items were linked to the CMV as well as their original intended construct, and all paths were constrained to be equal (Gaskin, 2011). For foot fungal cream, the resulting regression weight for the CMV factor to the items was .624, which equals .3844 when squared. This means that the shared common variance is 38.44%, below the 50% cutoff (Podsakoff and Organ, 1986; Gaskin, 2011). For hemorrhoid cream, the resulting CMV regression weight to the items was .657, which is .4316 when squared. The shared common variance for hemorrhoid cream is 43.16%, which is again below the 50% cutoff (Podsakoff and Organ, 1986; Gaskin, 2011).

Manipulation Checks

Foot Fungal Cream

Using the same items as study 1 and the pretest for study 2, manipulation checks were conducted on the data to ensure the manipulations were adequately perceived. The items for physical manipulation had good reliability (α= .98) and were combined to create mean scores. In the physical manipulation, low encroachment had a mean of 3.24 while high encroachment had a mean of 5.96, significant at p<.001.

The same measures from study 1 and study 2's pretest were also used as a manipulation check for visual encroachment. As the items again showed good reliability (α= .98), an average score was created. Low visual encroachment had a mean of 3.26 and high visual encroachment had a mean of 6.02, significantly different at p<.001.

For the legitimacy manipulation, the same items listed for the pretest in study 2 were used as manipulation checks for the main test. Reliability was good (α= .97), and a mean score was created. Low legitimacy had a mean of 3.51 and high legitimacy had a mean of 5.07, significantly different at p<.001. All physical, visual, and legitimacy manipulations for foot fungal cream were successful in the main test data collection.

Hemorrhoid Cream

Using the same items as foot fungal cream, the items for physical manipulation had good reliability (α= .98) and were combined to create mean scores. In the physical manipulation, low encroachment had a mean of 3.24 while high encroachment had a mean of 6.08, significant at p<.001.

The same measures were used for hemorrhoid cream as foot fungal cream, and the items again showed good reliability (α= .98). An average score was created. Low visual encroachment

had a mean of 2.05 and high visual encroachment had a mean of 4.85, significantly different at $p<.001$.

For the legitimacy manipulation, the same items listed for the pretest in study 2 were used as manipulation checks for the main test. Reliability was good ($\alpha= .97$), and a mean score was created. Low legitimacy had a mean of 2.73 and high legitimacy had a mean of 4.64, significantly different at $p<.001$. All physical, visual, and legitimacy manipulations for hemorrhoid cream were successful in the main test data collection.

Confound Checks

To ensure that one manipulation was not confounding the other, a test was conducted according to Perdue and Summers (1986). In this analysis, an ANOVA is run with all the manipulations and their interactions as independent variables and the manipulation check of the manipulation in question as the dependent variable. Only the manipulation related to the manipulation check should be significant. Any other significant manipulations must have a relatively small partial eta squared value to suggest the confounding manipulation is not overpowering the manipulation in question (Perdue and Summers, 1986).

Foot Fungal Cream

For the physical confounding check, several of the independent variables were significant in relationship to the physical manipulation check (see Table 27 for p-values and eta values for confounding checks). The visual manipulation along with the interaction of physical and visual encroachment were both significant at $p<.001$. However, both had small effect sizes (.09 and .06 respectively) in comparison to the physical encroachment manipulation.

Similar results were seen for the visual encroachment confounding check. While the manipulation of physical, the physical and visual interaction, and the visual and legitimacy

interaction were all significant at p<.001, their partial eta squares were small in comparison to the partial eta squared for the visual encroachment manipulation.

Lastly, the manipulation of legitimacy was checked to ensure that the manipulations of physical and visual encroachment did not confound the results. Both physical and visual encroachment were significant as well as the visual and legitimacy interaction. While the physical and visual encroachment partial eta squares were more than half of the legitimacy manipulation, the effect size was still larger than preferred. However, all the variables were run in the ANCOVA model simultaneously; therefore, the manipulations acted as covariates controlling for confounds in the model while testing the dependent variables, which is a way to fix confounds (Perdue and Summers, 1986).

Table 27: Confounding Check Results for Foot Fungal Cream for Study 2

Manipulation	Physical MC	Visual MC	Legitimacy MC
Physical	**p<.001, η=.52**	p<.001, η=.13	p<.001, η=.14
Visual	p<.001, η=.09	**p<.001, η=.52**	p<.001, η=.16
Legitimacy	p=.49	p=.47	**p<.001, η=.35**
Physical * visual	p<.001, η=.06	p<.001, η=.05	p=.25
Physical* legitimacy	p=.34	p=.36	p=.39
Visual* legitimacy	p=.07, η= .02	p<.001, η=.05	p<.001, η=.05
Physical*visual*legitimacy	p=.30	p= .1, η= .01	p=.30

Hemorrhoid Cream

Similar results were evident for the confound checks in hemorrhoid cream as seen for foot fungal cream (see Table 28 for confound results). For the physical encroachment manipulation confound check, the physical manipulation was a significant predictor of the physical manipulation check. However, the visual and interaction of physical and visual were as

well (p<.001). However, both had relatively small partial etas squared in comparison to the physical manipulation.

For the visual manipulation confound check, the visual manipulation was a significant predictor of the visual manipulation check and also had the highest partial eta squared. While physical and the physical and legitimacy interaction were also significant, they had relatively small partial etas squared.

Lastly, the legitimacy manipulation confound check showed the legitimacy manipulation was significant (p<.001) with a large partial eta squared (η=.44). However, the physical, visual, physical and visual interaction, and the 3-way interaction predictors were also significant. While the interactions' effect sizes were small, the visual manipulation effect size (η=.25) was more than half of the legitimacy manipulation effect size. As noted before, all the variables were run in the ANCOVA model simultaneously, therefore the manipulations acted as covariates controlling for confounds in the model while testing the dependent variables, which is a way to fix confounds (Perdue and Summers, 1986).

Table 28: Confounding Check Results for Hemorrhoid Cream for Study 2

Manipulation	Physical MC	Visual MC	Legitimacy MC
Physical	**p<.001, η=.60**	p<.001, η=.10	p<.001, η=.14
Visual	p<.001, η=.11	**p<.001, η=.56**	p<.001, η=.25
Legitimacy	p=.95	p= .38	**p<.001, η=.44**
Physical * visual	p<.001, η=.11	p<.01, η=.05	p=.054, η= .02
Physical* legitimacy	p=.44	p= .12	p=.60
Visual* legitimacy	p= .43	p=.13	p=.45
Physical*visual*legitimacy	p=.15	p=.30	p<.001, η=.07

Results

The analyses using ANCOVA (H1-3 and H7) used controls of anxiety, expressiveness, anonymity (same three controls used in study 1), and loyalty (items available in Table 6). ANCOVA was used as the independent variables (IV; physical encroachment, visual encroachment, and legitimacy) were categorical variables (low/high) and the dependent variables (categorization threat and acceptance threat) were continuous. The IVs were placed as fixed factors with either categorization threat or acceptance threat as the dependent variable (DV). H4 used a regression analysis as the independent variable (IV) was continuous and the dependent variable (DV) was also continuous. H5 and H6 used Preacher and Hayes' (2008) bootstrap method for mediation. Hypotheses 1- 6 were conducted in study 2 to show replication to advance theory (Brown and Gaulden, 1984). Hypothesis seven was added to expand the front part of the model by examination of a moderator.

Hypothesis one predicts that higher levels of physical encroachment will have a negative relationship to (a) categorization threat and (b) acceptance threat. Using an ANCOVA analysis with physical encroachment as the independent variable and categorization threat as the dependent variable with the controls previously listed, foot fungal cream found marginal support ($F(1, 220)=3.48$, $p=.06$, $mean_{low}= 3.33$; $mean_{high}= 2.82$) for hypotheses 1a, similar to results fully supporting the hypothesis in study 1. For hemorrhoid cream, the results were not significant ($F(1,205)= .52$, $p=.47$, $mean_{low}= 3.37$; $mean_{high}= 3.22$; results were marginal in study 1) although the means were in the correct direction. Hypothesis 1a is only supported by marginally significant results with foot fungal cream in study 2 (summary of hypotheses supported in study 2 can be found in Table 31).

Part b of hypothesis one examines the impact of physical encroachment on acceptance threat. For foot fungal cream, the results support the hypothesis ($F(1,220)= 5.07$, $p<.05$,

$mean_{low}$= 3.18; $mean_{high}$= 2.65), matching study 1, but the results are not significant for hemorrhoid cream (F(1,205)=.07, p=.79, $mean_{low}$= 3.29; $mean_{high}$= 3.23), which is inconsistent with study 1's findings. Hypothesis 1b is supported with the foot fungal cream data only.

Hypothesis two predicts that higher levels of visual encroachment will negatively impact (a) categorization and (b) acceptance threat. Study 1 found marginal significance for both products for part a. Study 2 saw significance for hemorrhoid cream only. For part a, which examines categorization threat, foot fungal was not significant (F(1,220)= .71, p=.40, $mean_{low}$= 3.12; $mean_{high}$= 2.93), but hemorrhoid cream was (F(1,205)= 4.74, p<.05, $mean_{low}$= 3.55; $mean_{high}$= 3.04). Part b examining acceptance threat has partial support as the foot fungal results were not significant (F(1,220)= .46, p=.50, $mean_{low}$= 3.00; $mean_{high}$= 2.83), consistent with study 1, but the hemorrhoid cream results were (F(1,205)= 4.61, p<.05, $mean_{low}$= 3.50; $mean_{high}$= 3.00), which is also consistent with study 1.

Hypotheses 3a and 3b state that the interaction of visual and physical encroachment will have a negative effect on (a) categorization threat and (b) acceptance threat. While study 1 did not find support for either product, marginal results were found for foot fungal cream in study 2. For categorization threat, foot fungal cream resulted in a marginally significant interaction (F(1,220)=3.44, p=.07), while hemorrhoid cream did not (F(1,205)=.37, p=.55), with only foot fungal cream marginally supporting H3a. For acceptance threat, foot fungal cream again marginally found significance (F(1,220)=3.07, p=.08) and hemorrhoid cream did not (F(1,205)=.05, p=.82). To further investigate the interactions, planned comparisons were conducted for the foot fungal data only. Hemorrhoid cream was not explored further as the interactions were not significant.

For H3a in foot fungal cream, the simple effect of visual encroachment in low physical encroachment was significant ($F(1,113)=5.57$, $p<.05$) and not in high physical encroachment ($F(1,107)= 1.31$, $p=.40$). When physical encroachment was low, low visual encroachment (bar A; see figure 9) was significantly different from high visual encroachment (bar B) (Low $visual_{mean}=3.52$; High $visual_{mean}=2.94$, $p<.05$). When physical encroachment was high, there was not a difference between low (bar C) and high (bar D) visual encroachment (Low $visual_{mean}=2.73$; High $visual_{mean}=2.92$, p=n.s.). These findings support the hypothesis that visual encroachment will be different in low physical conditions but not in high physical. According to social impact theory (Latante, 1981), the addition of one type of encroachment will cause a significant reduction in categorization threat, but each additional encroachment will not.

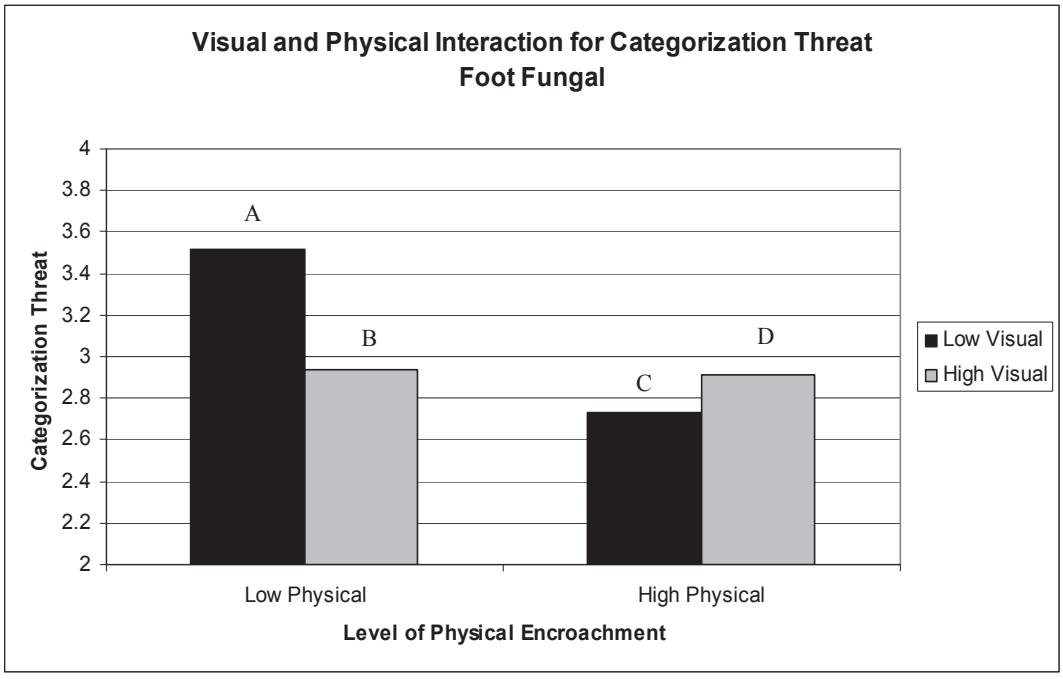


Figure 9: Physical * Visual for Cat. Threat (H3a): Foot Fungal in Study 2

For H3b, the visual simple effect was marginally significant in low physical encroachment ($F(1,113)=3.86$, $p=.052$) and not significant in high physical encroachment ($F(1,107)=.70$, $p=.41$). When physical encroachment was low, low visual encroachment (bar A; see figure 10) was marginally different from high visual encroachment (bar B) (Low $visual_{mean}=3.45$; High $visual_{mean}=2.90$, $p= 052$). When physical encroachment was high, there was not a difference between low (bar C) and high (bar D) visual encroachment (Low $visual_{mean}=2.73$; High $visual_{mean}=2.92$, p=n.s.). These results marginally support the hypothesis that visual encroachment will only be significant in low physical conditions.

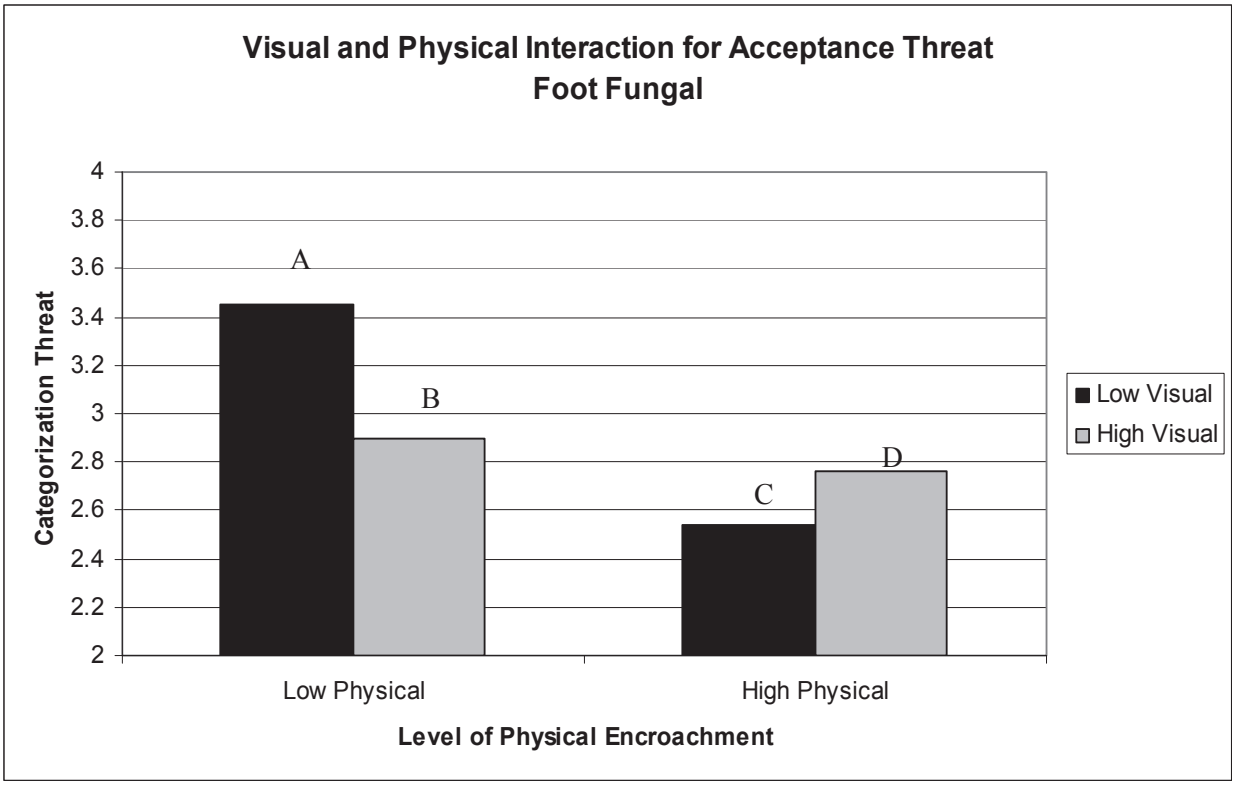


Figure 10: Physical * Visual for Acc. Threat (H3b): Foot Fungal in Study 2

Hypotheses 4a and 4b both used regression to test the relationships. H4a says that categorization threat has a positive relationship to purchase pressure, which was supported with both foot fungal cream (β=.44, t=7.23, p<.001) and hemorrhoid cream (β=.47, t=7.61, p<.001), fully supporting H4a across both products and consistent with study 1. Hypothesis 4b says that acceptance threat will have a positive relationship to purchase pressure. Foot fungal was significant (β=.4, t=6.44, p<.001) as was hemorrhoid (β=.42, t=6.58, p<.001), thus fully supporting H4b and consistent with study 1 as well.

Hypotheses 5 and 6 both predicted mediation of the threats between encroachments and purchase pressure. Similar to study 1, Preacher and Hayes' bootstrap method (Preacher and Hayes, 2008; Zhao, Lynch, and Chen, 2010) was used to test these relationships. For H5a, physical encroachment was the independent variable, purchase pressure was the dependent variable, and categorization threat was the mediator.

Beginning with foot fungal, the path from physical encroachment to purchase pressure as mediated through categorization threat (H5a; see Table 29 for full mediation results of foot fungal cream in study 2) did not have a significant mean indirect effect, indicating non-mediation. However, the mediated path of physical to purchase pressure through acceptance threat (H5b) had a significant mean indirect effect (β= -.11), with a 95% confidence interval excluding zero (-.27 to -.01). The direct effect of physical encroachment on purchase pressure was significant (p<.01), and the product of the coefficients was negative (-.06), suggesting competitive mediation. This implies that while mediation exists and the results support the framework, there is likely an omitted mediator (Zhao, Lynch, and Chen, 2010). The results for the visual to purchase pressure as mediated by the threats (H6a and H6b) were not significant for foot fungal

cream, indicating non-mediation. Therefore, in study 2, only H5b was supported for mediation results with the foot fungal cream data.

Table 29: Mediation Results for Foot Fungal Cream Study 2

Mediation Path	Indirect effect β (a x b)	95% confidence interval	a	b	c	a x b x c	Mediation type?
Physical→ CT	-.10	-.26 to .02	-.31	.32	.43 (p<.05)	-.04	Direct (non-mediation)
Physical→ AT	-.11	-.27 to -.01	-.41	.27	.53 (p<.01)	-.06	Competitive Mediation
Visual→ CT	-.004	-.15 to .13	-.01	.31	.48 (p<.05)	-.001	Direct (non-mediation)
Visual→ AT	.02	-.11 to .15	.07	.25	.48 (p<.05)	.01	Direct (non-mediation)

For hemorrhoid cream, the mediation of physical encroachment to purchase pressure was not significant for either threat (H5a and H5b), indicating non-mediation (see Table 30). The mediated relationship of visual encroachment to purchase pressure through categorization threat (H6a) had a significant mean indirect effect (β= -.16), with a 95% confidence interval excluding zero (-.37 to -.05). The direct effect of physical encroachment on purchase pressure was not significant (p=.22), suggesting indirect-only mediation (Zhao, Lynch, and Chen, 2010). This type of mediation is similar to full mediation as outlined by Baron and Kenny (1986). Similarly, the visual encroachment to purchase pressure relationship as mediated through acceptance threat (H6b) also had a significant mean indirect effect (β= -.13), with a 95% confidence interval excluding zero (-.29 to -.03), and a non-significant direct path (p=.22), again suggesting full mediation. The results for hemorrhoid cream did not support H5a or H5b but did support H6a and H6b.

Table 30: Mediation Results for Hemorrhoid Cream Study 2

Mediation Path	Indirect effect β (a x b)	95% confidence interval	a	b	c	a x b x c	Mediation type?
Physical→ CT	-.07	-.25 to .05	-.23	.32	.07 (p=.69)	-.01	No effect
Physical→ AT	-.03	-.16 to .07	-.13	.27	.07 (p=.69)	-.002	No effect
Visual→ CT	-.16	-.37 to -.05	-.52	.31	-.24 (p=.22)	.04	Indirect only
Visual→ AT	-.13	-.29 to -.03	-.49	.26	-.24 (p=.22)	.03	Indirect only

Hypothesis 7 had four parts (a-d) examining the interaction of legitimacy with the two different types of encroachment. The hypotheses suggested that lower legitimacy situations would see higher reactance or greater difference between low and high levels of encroachment; alternately, higher legitimacy would see less difference between low and high levels of encroachment. For H7a, foot fungal data had a significant interaction between physical encroachment and legitimacy in regards to categorization threat, ($F(1,220)= 4.07$, $p<.05$), whereas hemorrhoid cream data did not have significance ($F(1,205)=1.46$, $p=.23$). Similar results were seen for H7b (involving acceptance threat), only the interaction was marginal for foot fungal ($F(1,220)=2.71$, $p=.10$) and not significant for hemorrhoid ($F(1,205)=.67$, $p=.41$).

The significant interactions were examined further to determine if the hypothesis was supported. As the interaction was only significant (or marginally significant) for foot fungal cream, only foot fungal cream was examined further in physical encroachment's relationship to categorization and acceptance threat. For H7a in foot fungal cream, the physical simple effect was significant in low legitimacy ($F(1,114)=6.45$, $p<.05$) but not in high legitimacy ($F(1,106)=.02$, $p=.89$). When legitimacy was low (see Figure 11), low physical encroachment (bar A: mean= 3.57) was different from high physical encroachment (bar B: mean= 2.76, $p<.05$).

This pattern of results supports H7a in that more reactance was elicited in low legitimacy as seen by significant results for low legitimacy across physical encroachment and insignificant results in high legitimacy.

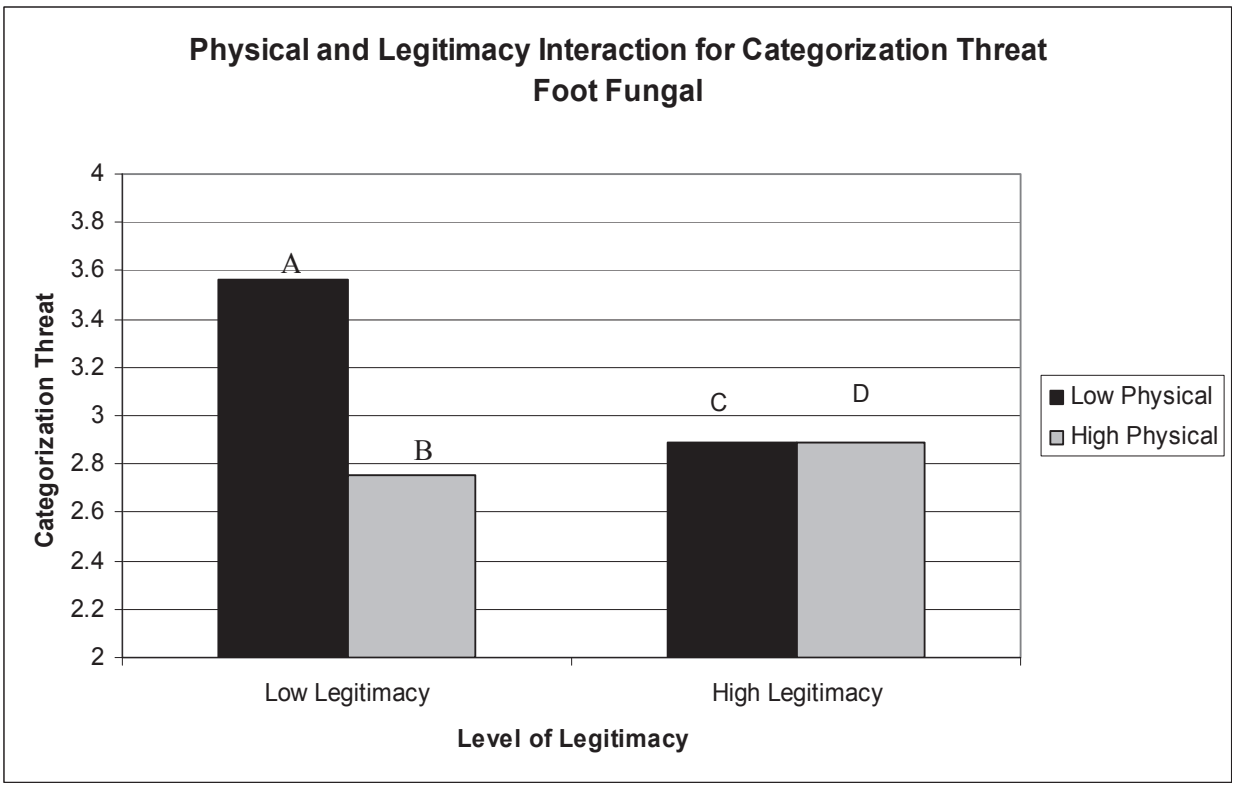


Figure 11: Physical * Legitimacy for Cat. Threat (H7a): Foot Fungal in Study 2

The results for hypothesis 7b were only marginally significant for foot fungal cream. When split into low and high legitimacy, the physical simple effect was only significant in low legitimacy ($F(1,114)=7.52$, $p<.01$) and not in high legitimacy ($F(1,106)=.16$, $p=.69$). When legitimacy was low (see Figure 12), low physical encroachment (bar A: mean= 3.57) was different from high physical encroachment (bar B: mean= 2.69, $p<.01$). This supports hypothesis 7b that low legitimacy elicits stronger reactions in terms of acceptance threat than reactions in

high legitimacy. The marginally significant interaction and significant simple effect results for foot fungal cream partially support H7b.

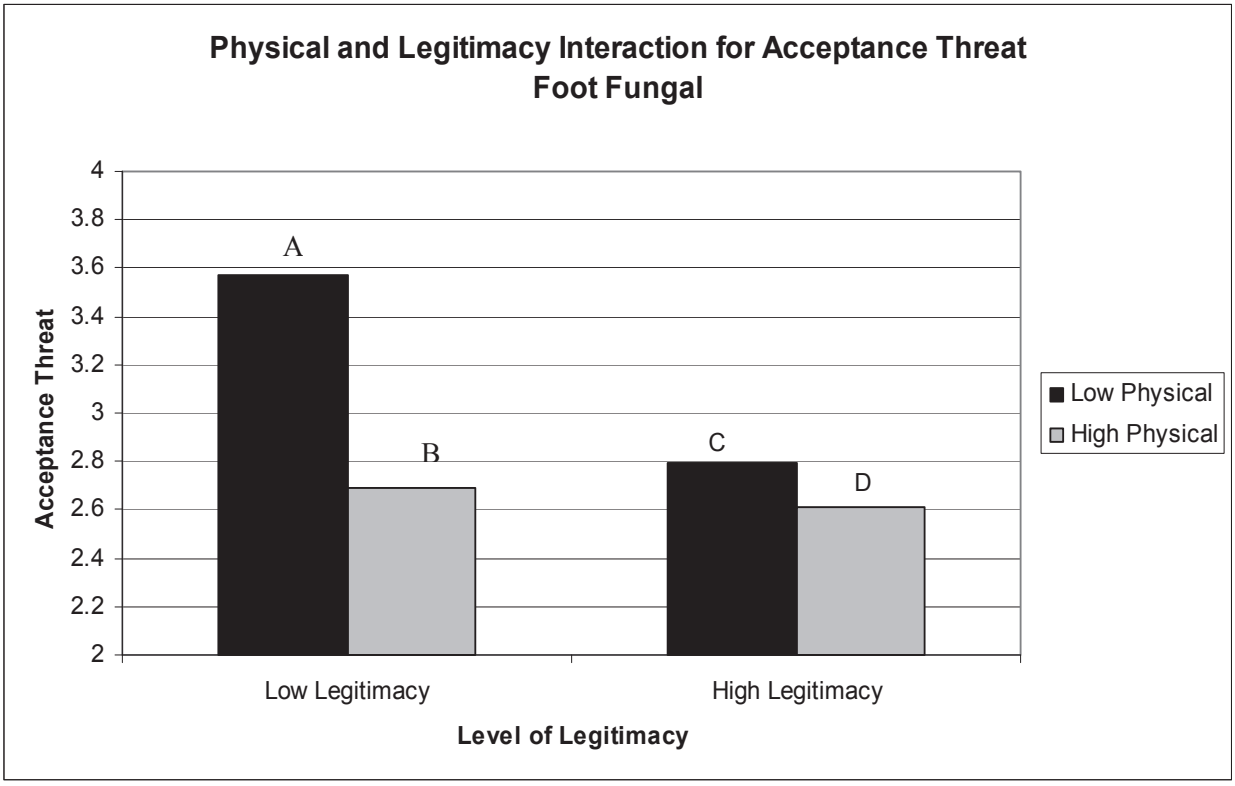


Figure 12: Physical * Legitimacy for Acc. Threat (H7b): Foot Fungal in Study 2

Hypothesis 7 parts c and d examined the interaction of legitimacy with visual encroachment on the two types of threat. For H7c, the hypothesis predicted that there would be an interaction between legitimacy and visual encroachment such that high legitimacy of threat would have a small change in categorization threat across low and high levels of visual encroachment but that low legitimacy would see a larger and significant change in categorization threat from low to high levels of visual encroachment, similar to the interactions in H7a and b. This was not supported in foot fungal ($F(1,220)=.02$, $p=.89$) nor with hemorrhoid cream

(F(1,205)= 2.23, p=.64). Part d of hypothesis 7 predicted the same results as part c only using acceptance threat. Again, this was not supported in foot fungal cream (F(1,220)= 1.02, p= .31) nor with hemorrhoid (F(1,205)= .13, p=.72). As none of the interactions were significant, the data was not broken down further, and the hypotheses were not supported in study 2.

Summary of Findings

Study 2 replicated study 1's examination of the front part of the model and added a moderator of legitimacy (tested H1-H7). Generally, the results were split between the two products. For foot fungal cream (see Figure 13 for visual depiction of results), physical encroachment saw significant results on both threats and saw moderation from legitimacy on those relationships. Physical encroachment led to fewer threats, and more reactance was seen in low legitimacy than high. The interactions of physical and visual encroachment also found marginal support in study 2 for foot fungal cream, showing that the addition of one encroachment lessens threats and each additional encroachment does not see significant impact. Both threats led to purchase pressure.

For hemorrhoid cream, however, the hypotheses did not find as much support (see Figure 14). Visual encroachment had a significant relationship to the threats, but the legitimacy moderator did not have an impact on those relationships. The interaction of physical and visual encroachment was again not significant. As visual encroachment increased, both categorization and acceptance threat decreased. The threats also had a positive relationship to purchase, consistent with study 1.

Study 2 found similar results for H1 and H2 in foot fungal cream. For hypothesis one, marginal results were found for part a and full significance for part b with the foot fungal data

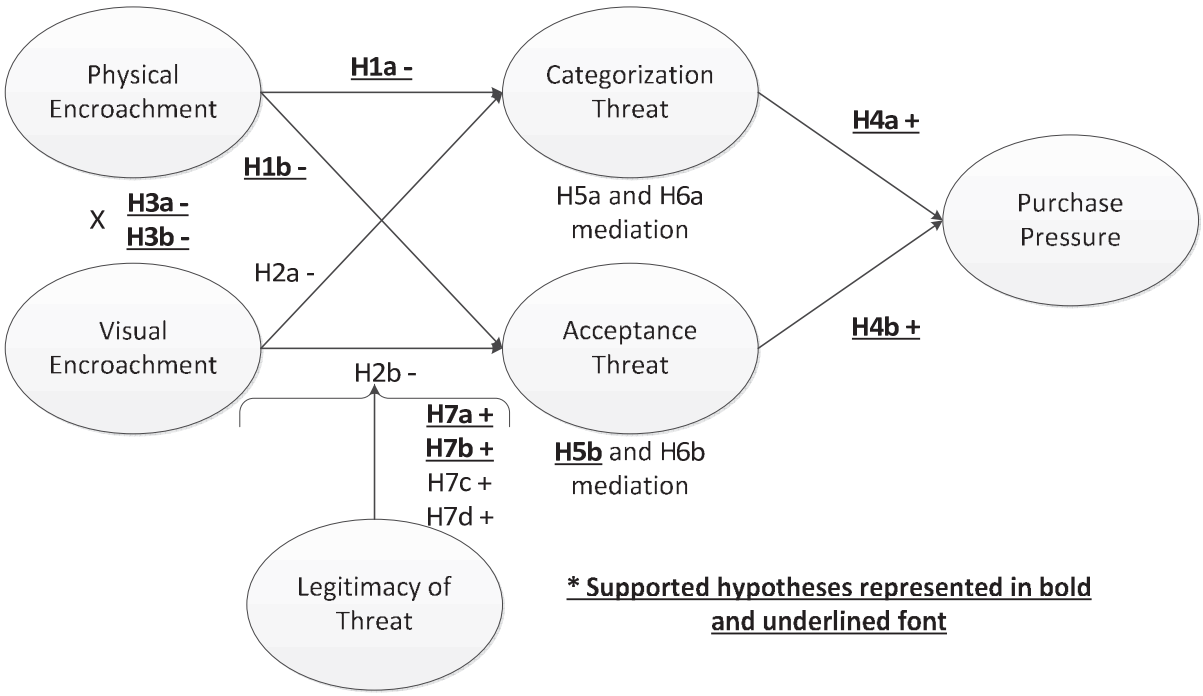


Figure 13: Significant Findings for Foot Fungal Cream for Study 2

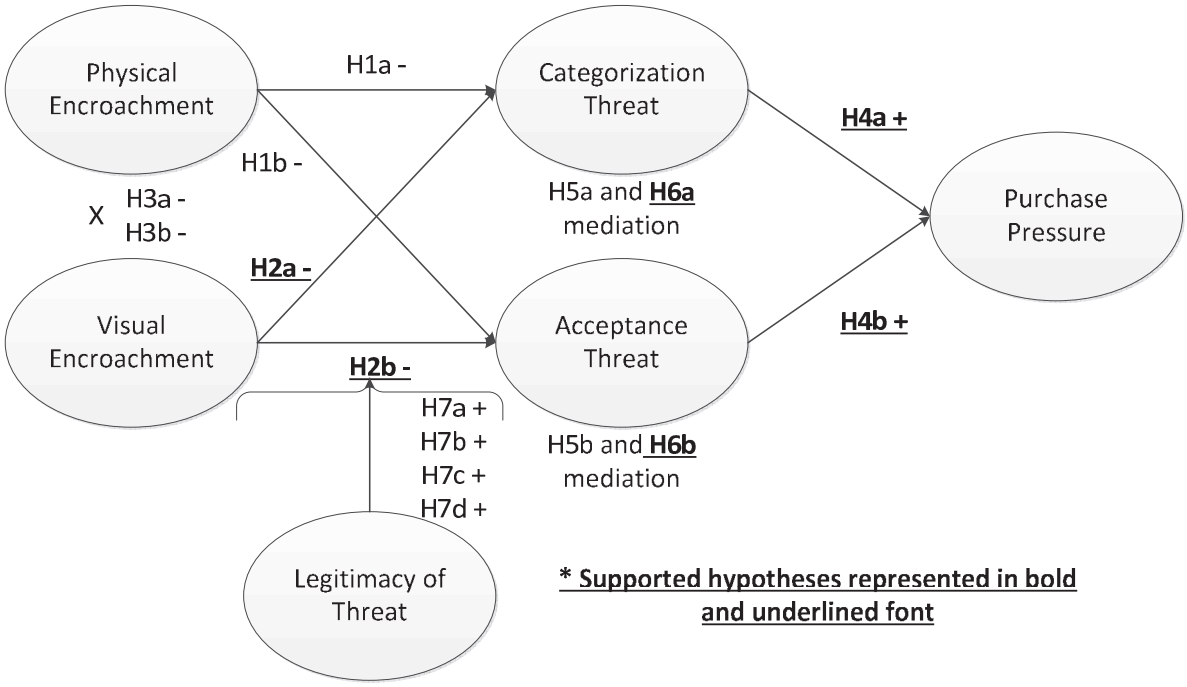


Figure 14: Significant Findings for Hemorrhoid Cream for Study 2

only. Hemorrhoid cream did not find any support for the hypotheses in contrast to study 1's findings. For the second hypothesis, the results were much more consistent with study 1. H2a was marginal for foot fungal cream in study 1, but not supported in study 2. While H2b was not supported in either study by foot fungal cream, hemorrhoid cream found full support for both H2a and H2b, which were marginal and supported in study 1 respectively. In study 2, physical encroachment led to categorization and acceptance threat for foot fungal cream only while visual encroachment related to the threats for hemorrhoid cream only. Study 1 saw some differences in the relationships across the two products, much as study 2 did. Embarrassment ($mean_{foot}$= 3.23, $mean_{hemorrhoid}$=3.59, $p<.001$) and frequency of purchase ($mean_{foot}$= 1.74, $mean_{hemorrhoid}$=1.56, $p<.05$) were significant again, showing that hemorrhoid cream is more embarrassing to purchase than foot fungal cream and that hemorrhoid cream is purchased less often.

While H3a and H3b did not find any support with the two products in study 1, there was marginal support for both parts of the hypothesis in foot fungal cream in study 2. The marginal results were as expected, showing when physical and visual encroachment are both low, threats are highest. The addition of one encroachment shows a significant difference with lower threat felt, but each additional encroachment after the first does not significantly lower threat. This is in-line with social impact theory (Latante, 1981), which states that the addition of one source of influence will cause greater reactance than each sequential addition.

Replicating the findings from study 1, H4 was fully supported by both products showing categorization threat and acceptance threat both have a positive relationship to purchase pressure. Mediation results were also similar to study 1 with the exception of H5a for foot fungal cream. For H5b, acceptance threat mediated physical encroachment and purchase pressure for foot

fungal cream only, while both categorization and acceptance threat mediated visual's relationship to purchase pressure for hemorrhoid cream only. As the differences noted in study 1 (anxiety, embarrassment, and frequency of purchase) were also different in study 2 (with the exception of anxiety not being fully significant), this further suggests these differences between the two products could be reasons that physical encroachment was mediated for foot fungal cream and visual encroachment was mediated for hemorrhoid cream.

Lastly, the legitimacy of the threat moderator found some support in H7a and H7b with foot fungal cream. H7a was fully supported and H7b was marginal for foot fungal cream, but not for hemorrhoid. Neither H7c or H7d was significant in either product. The findings in study 2 do not fully support the hypotheses that legitimacy of threat will reduce reactance as predicted by theory (Brehm, 1966). However, theory does say legitimacy will reduce and not eliminate reactance. Therefore, it was expected that in study 3, where video scenarios were used and legitimacy was measured, that the interactions would become significant.

Table 31: Summary of Findings for Study 2

Hypothesis	Foot Fungal	Hemorrhoid
H1a: Higher levels of physical encroachment have a negative relationship to categorization threat	Marginal	Not Supported
H1b: Higher levels of physical encroachment have a negative relationship to acceptance threat	Supported	Not Supported
H2a: Higher levels of visual encroachment have a negative relationship to categorization threat	Not Supported	Supported
H2b: Higher levels of visual encroachment have a negative relationship to acceptance threat	Not Supported	Supported
H3a: There will be an interaction of physical and visual encroachment such that there will be a significant difference of categorization threat in low physical encroachment across levels of visual encroachment, but there will not be a significant difference of categorization threat in high encroachment across levels of visual encroachment.	Marginal	Not Supported
H3b: There will be an interaction of physical and visual encroachment such that there will be a significant difference of acceptance threat in low physical encroachment across levels of visual encroachment, but there will not be a significant difference of acceptance threat in high encroachment across levels of visual encroachment.	Marginal	Not Supported
H4a: Categorization threat has a positive relationship to purchase pressure	Supported	Supported
H4b: Acceptance threat has a positive relationship to purchase pressure	Supported	Supported
H5a: Categorization threat mediates physical encroachment and purchase pressure	Not Supported	Not Supported
H5b: Acceptance threat mediates physical encroachment and purchase pressure	Supported	Not Supported
H6a: Categorization threat mediates visual encroachment and purchase pressure	Not Supported	Supported
H6b: Acceptance threat mediates visual encroachment and purchase pressure	Not Supported	Supported
H7a: There will be an interaction between physical encroachment and legitimacy such that high legitimacy will have a small/insignificant change in categorization threat across low and high levels of physical encroachment but low legitimacy will have a large/significant change in categorization threat across physical encroachment.	Supported	Not Supported
H7b: There will be an interaction between physical encroachment and legitimacy such that high legitimacy will have a small/insignificant change in acceptance threat across low and high levels of physical encroachment but low legitimacy will	Marginal	Not Supported

Table 31: Continued

Hypothesis	Foot Fungal	Hemorrhoid
have a large/significant change in acceptance threat across physical encroachment.		
H7c: There will be an interaction between visual encroachment and legitimacy such that high legitimacy will have a small/insignificant change in categorization threat across low and high levels of visual encroachment but low legitimacy will have a large/significant change in categorization threat across visual encroachment.	Not Supported	Not Supported
H7d: There will be an interaction between visual encroachment and legitimacy such that high legitimacy will have a small/insignificant change in acceptance threat across low and high levels of visual encroachment but low legitimacy will have a large/significant change in acceptance threat across visual encroachment.	Not Supported	Not Supported

Study 3: Examination of the Model Expansion

Overview

The purpose of study 3 was to test the expansion of the model (H8-H11) as well as test the hypotheses with a video scenario (as opposed to a written scenario) to increase realism and felt threats. Study 3 was a 2 (visual encroachment: low/high) x 2 (physical encroachment: low/high) x 2 (legitimacy of threat: low/high) video scenario experiment design of the full model including the moderator, feelings of control, and abandonment/basket intentions. Study 3 replicates and extends the prior two studies. The model was extended to include feelings of control, temporary abandonment of area, permanent abandonment of area/store, and purchase intentions (basket size), thus testing hypotheses 8-11. Sixteen video scenarios (low/high visual and low/high physical across two products for two actors) were created to add realism to the shopping situation while keeping high levels of control. Participants were given one video

scenario and answered a survey about their shopping experience. Legitimacy of threat was measured, not manipulated, from the video scenarios.

Pretest 1

Pretest 1 was conducted to ensure adequate selection of the actors used in the video scenarios. As targets of visual contact will be more tolerant of visual encroachment when the source is attractive (Harper et al., 1978), the actors should be of average physical attractiveness and as similar as possible (Thompson, 1982). One male and one female confederate were used to compare for differences in the main test along gender of encroacher. A panel of 15 judges on M-turk rated two pictures of each actor on an attractiveness scale of 1 to 10. The panel was 33% male, and the ages ranged from 24-40. Participants were told they would be shown a series of six pictures and to answer the question for each picture. The panel members did not know the actors and had never seen pictures of them before.

For the individual actor pictures (two pictures for each actor), participants were asked "On a scale of 1 to 10, please rate how physically attractive the person in the picture is (if it is a gender you are not attracted to, please rate how physically attractive the person is to societal norms)." An average score was created from the two pictures per actor to create one rating for the male and one rating for the female. The male actor scored an average of 5.8 and the female averaged at 6.4.

Judges also compared two pictures of both actors together in the same picture to rate them on similar physical features to ensure that the actors were comparable in physical characteristics. After the individual actor pictures, participants were shown the two pictures of the actors together and asked, "One a scale of 1 to 10, please rate how similar the physical characteristics of the two people in the pictures are (i.e., how similar is their race, hair color, eye

color, build, etc.)." The judges rated the similarity of characteristics of the two at 7.2 on a scale of 1 to 10. The actors were of average attractiveness as well as being rated fairly similar in physical characteristics. Both actors had brown hair, brown eyes, were Caucasian, had average build, and were similar in no physical features that were abnormal.

Pretest 2

Pretest 2 ensured successful manipulation of the physical and visual scenarios as well as variance along legitimacy (legitimacy was not manipulated but measured). A 2 x 2 design was used for the pretest. The first factor was physical (low versus high) encroachment and the second factor was visual (low versus high) encroachment. Four scenarios were created on those dimensions for both actors (totaling eight videos) without a product specified only for the pretest and uploaded to M-turk. The pretest scenarios were from the first person perspective (i.e., from the viewpoint of the shopper) and depicted an employee either physically far or close and either looking at the camera or not. As research has shown, it is only important for the participant to realize they are being watched (Ellsworth et al., 1972) as opposed to how long; therefore, the time spent in the video looking at the confederate was kept short to increase realism of the scenarios. To keep consistency with the first two studies' manipulations, screens of text appeared throughout the video replicating the written scenarios from the previous studies. At the end of the video, a brief screen told the viewer the video was now over and to advance to the next section to answer questions about their imagined situation.

One video was shown to each participant in the pretest. A total of 38 respondents were used for the pretest. An EFA Varimax rotated component matrix showed that each manipulation check item loaded highly onto its intended construct without cross loading at Eigenvalues set greater than 1. The manipulation checks for the physical and visual manipulations were the same

used in studies one and two (see Table 6 for manipulation checks for physical and visual encroachment).

Manipulation checks for physical encroachment included three items of very distant/very close, very far away/ very near, and not close/ very close by. The items had good reliability (α= .97) and were combined to create a mean score. The physical manipulation was significant at $p<.001$ ($mean_{low}$= 3.80 and $mean_{high}$= 6.10).

Manipulation checks for visual encroachment included four items of not watched/ very watched, not observed/ very observed, not paid attention to/ very paid attention to, and not looked at/ very looked at. The visual items also had good reliability (α= .998) and were collapsed to create a mean score. The visual manipulation was significant at $p<.001$ ($mean_{low}$= 1.57 and $mean_{high}$= 6.79).

The manipulation checks from study 2 (i.e., the employee's behavior was acceptable, the employee's behavior was normal, the employee's behavior was legitimate, the employee's behavior was desirable, the employee's behavior was proper, the employee's behavior was appropriate, and the employee's behavior was fair) were used as items to measure legitimacy in study 3. The items for legitimacy had good reliability (α=.97) and were combined to create a mean score. The average of the legitimacy items ranged from a minimum of 1 to a maximum of 7 with a mean of 3.06, standard deviation of 1.77, and variance of 3.12. There was adequate variance of legitimacy to keep it as a measured and not manipulated variable in the main test.

A confounding check analysis was also conducted for the pretest to check that no manipulation greatly impacted another. Both categorical variables (physical and visual) were set as IVs, and the manipulation check in question was set as the DV. Only the manipulation related to the manipulation check should be significant or have a relatively small partial eta square. A

confounding test showed that only the physical manipulation was significant on the physical manipulation check item at $p<.001$ and $\eta^2 = .54$. The visual manipulation was not significant, ($p=.12$, $\eta^2 =.07$) nor was the interaction ($p= 45$, $\eta^2 =.02$).

The visual manipulation was only significant when the visual manipulation check was the dependent variable ($p<.001$, $\eta^2 =.92$) and the physical manipulation ($p=.28$, $\eta^2 = .04$) and the interaction ($p=.29$, $\eta^2 = .03$) were not. Therefore, there was no confounding of the manipulations in the pretest.

Main Test

Procedure

The survey was available on the Qualtrics platform with a link on M-turk. Participants were given a brief overview of the study and asked for their consent. Participants were first told, "Thank you for your willingness to help with this survey. This survey should take approximately 10 minutes to complete. Your responses will be completely anonymous. Your participation will help us understand more about retail shopping. Your participation in this study is voluntary and if at any point you wish to discontinue, you may quit the survey and will not receive the compensation. If you agree to these terms and give your consent for your responses to be used in the study, please click I agree."

Once participants agreed to the terms, they were then given instructions regarding the survey. They were told, "On the next page is a video (plays in Adobe Flash Video format) about a shopping trip. Please imagine you have gone to the store and find yourself in the video scenario shopping with an employee as shown. Following the video is a series of questions regarding your shopping trip. Please answer the questions as accurately as possible as if you really had a shopping experience as shown. Only answer the questions if you have actually watched the

video- please do not continue if the video format is not supported on your computer and did not play. The survey will not allow you to go backwards and re-watch the video once you proceed to the questions, so please remember your shopping situation and the product you are shopping for to answer the questions following the scenario." Participants were then randomly shown one of the videos and the survey questions followed after. As in the previous studies, a filter question had to be correctly answered for participants to complete the survey, and incomplete responses were not compensated.

Design

Data was collected with a 2 x 2 design. Factor one was physical encroachment (low versus high), and factor two was visual encroachment (low versus high), as in study 1. Legitimacy was a measured variable and not manipulated for study 3. Each of the four manipulations was created for both products (foot fungal cream and hemorrhoid cream) for two actors (male and female).

The videos were filmed from first person perspective depicting the shopper in a pharmacy walking toward a shelf against the pharmacy wall. The participant would reach the wall, look at the product (either foot fungal cream or hemorrhoid cream) and turn to their left. They would then see the manipulation (a male or female employee who was physically close or far away and was either watching them or not) and immediately turn back to look at the product. The shopper would then glance to their left again and see the same manipulation before returning to look at the product, and the video would end.

As in studies one and two, several cases were deleted due to missed filter (n=35) and misperception of manipulations (n=17). Additional check questions were also included to ensure the participant had watched the video. Participants were also asked what product they were

shown purchasing in the video and if the person in the video was an employee or another shopper. The data of participants who did not answer these questions correctly was not used.

Cases were deleted in high manipulation scenarios that rated the manipulation below a "2," indicating the perceived the manipulation to be low. In the low manipulations, cases that rated the manipulation above "6" were deleted as they misperceived the manipulation to be high. There were no outliers in the remaining data. The data set used resulted in 130 useable cases for foot fungal cream and 141 cases for hemorrhoid cream.

As in prior studies, the first three hypotheses and H7 were tested using ANCOVA analysis with anxiety, expressiveness, anonymity (same three used in studies 1 and 2). New to study 3 are controls of crowding, actor used in videos, frequency of purchase, and arousal seeking. As discussed in chapter 3, invasions of privacy are related to crowding (Altman, 1975). Many experiments use at least one male and one female confederate (Gueguen and Jacob, 2006; Pruitt et al., 1986), as there can be differences in reactions to the different genders when involved in personal encounters (Aiello and Thompson, 1980). Familiarity can reduce embarrassment with a purchase (Dahl et al., 2001) and familiarity, or frequency of purchase, might have an impact on the perception of threats and legitimacy. Lastly, social cues can impact shopper's arousal (Baker et al., 1992; Hu and Jasper, 2006), and the presence or absence of a store employee could change arousal and impact results. The addition of these controls for study 3 will test the robustness of the model by examining if similar results hold while considering these additional controls.

As before, hypothesis four was tested with regression analysis, and hypotheses five and six used Preacher and Hayes' (2008) bootstrap mediation method. Hypotheses 8-11 also used regression analysis.

Subjects

A total of 288 participants took the survey on M-turk. Participants were told they needed to be able to view Flash videos to take the survey. Participants were given $0.75 for their completion of the survey. For foot fungal cream, 43.8% of the participants were male. Sixty percent were between the ages of 21-40, and 26.9% were between the ages of 41-60.

For hemorrhoid cream, 50.4% of the participants were male. The majority of participants, 60.3%, were between the ages of 21-40, and 27.7% were between 41-60.

Measurement Reliability and Validity

Each item was loaded onto its intended construct in AMOS in a measurement model for analysis. As in studies one and two, the measurement model included categorization threat (5 items), acceptance threat (3 items), purchase pressure (5 items), anxiety (3 items for control), and expressiveness (3 items for control) (items available in Table 6). Added for this study were legitimacy of threat (7 items, in Table 8), feelings of control (9 items, in Table 9), temporary abandonment (6 items, Table 9), permanent abandonment (6 items, Table 9), purchase intentions (6 items, Table 9), and feelings of crowding (5 items for control, Table 9). Anonymity, arousal, actor, and frequency of purchase were not included in the measurement model as they did not have three items for analysis (Anderson and Gerbing, 1982; Churchill, 1979). Additionally, anonymity and arousal were from pre-established scales.

Foot Fungal Cream

There were no negative error terms and all standardized coefficients were at or over .7 with the exception of one item for permanent abandonment at .58, one item for temporary abandonment at .64, two items for control at .65 and .66, and one item for purchase pressure at .685. For satisfactory measurement, all items must have an estimation preferably above.7, but

a minimum of .5, with their intended variable (Hair et al., 1998). Standard errors ranged between .03 and .13. Modification indices greater than 10 were all with errors terms. There were no unsatisfactory modification indices between an item and a construct. The composite reliabilities were all above .70 (ranging from .90 to .98) for all constructs and the average variance extracted was above .50 (ranging from .63-.89) (see Table 32 for loadings, reliabilities, and AVE). Additionally, the average variance extracted for all the constructs was greater than the squared correlation (see Table 33 for correlations). All items were therefore deemed satisfactory in measuring the contrast they intended to and not measuring more than one construct.

Hemorrhoid

There were no negative error terms and all standardized coefficients were at or over .7 with the exception of one item for permanent abandonment at .58, one item for temporary abandonment at .59, and two items for control at .57 and .63. For satisfactory measurement, all items must have an estimation preferably above .7, but a minimum of .5, with their intended variable (Hair et al., 1998). Standard errors ranged between .02 and .10. Modification indices greater than 10 were all with errors terms. There were no unsatisfactory modification indices between an item and a construct. The composite reliabilities were all above .70 (ranging from .90 to .98) for all constructs, and the average variance extracted was above .50 (ranging from .65-.92) (see Table 34 for loadings, reliabilities, and AVE). Additionally, the average variance extracted for all the constructs was greater than the squared correlation (see Table 35 for correlations). All items were therefore deemed satisfactory in measuring the contrast they intended to and not measuring more than one construct.

Table 32: Measurement Statistics for Foot Fungal Cream for Study 3

	Standardized Loadings	Composite Reliability	Average Variance Extracted
Purchase Pressure (1)	0.87	0.90	0.75
2	0.78		
3	0.69		
4	0.85		
5	0.82		
Categorization Threat (1)	0.91	0.96	0.83
2	0.97		
3	0.95		
4	0.90		
5	0.82		
Acceptance Threat (1)	0.94	0.96	0.89
2	0.96		
3	0.94		
Legitimacy (1)	0.90	0.97	0.83
2	0.91		
3	0.88		
4	0.79		
5	0.97		
6	0.98		
7	0.92		
Temporary Abandonment (1)	0.94	0.94	0.74
2	0.87		
3	0.96		
4	0.81		
5	0.64		
6	0.90		
Permanent Abandonment (1)	0.98	0.96	0.80
2	0.94		
3	0.97		
4	0.86		
5	0.58		
6	0.95		
Control(1)	0.76	0.92	0.63
2	0.65		
3	0.66		
4	0.75		
5	0.90		
6	0.87		

Table 32: Continued

	Standardized Loadings	Composite Reliability	Average Variance Extracted
7	0.93		
Purchase intentions (1)	0.96	0.98	0.88
2	0.94		
3	0.98		
4	0.93		
5	0.87		
6	0.95		
Expressiveness (1)	0.92	0.94	0.84
2	0.96		
3	0.88		
Anxiety (1)	0.90	0.94	0.85
2	0.92		
3	0.95		
Crowd (1)	0.91	0.98	0.87
2	0.91		
3	0.92		
4	1.02		
5	0.91		

Table 33: Correlation Table for Foot Fungal Cream for Study 3

Construct	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Categorization Threat (1)	1														
Acceptance Threat (2)	.73	1													
Legitimacy (3)	.12	.18	1												
Purchase Pressure (4)	.52	.44	.11	1											
Control (5)	-.27	-.25	.47	-.36	1										
Temp. Abandonment (6)	.21	.34	-.29	.10	-.39	1									
Perm. Abandonment (7)	.06	.06	-.37	.12	-.59	.32	1								
Purchase Intentions (8)	-.11	-.15	.35	-.05	.58	-.33	-.65	1							
Anxiety (9)	.39	.44	-.37	.32	-.68	.43	.41	-.38	1						
Expressiveness (10)	.15	.12	-.07	.25	-.04	.13	.08	.01	.04	1					
Crowding (11)	.16	.03	-.30	.24	-.31	.18	.15	-.004	.43	.07	1				
Anonymity (12)*	-.16	-.03	-.38	.01	.22	-.08	-.05	-.01	-.29	.06	-.29	1			
Arousal (13)	.09	-.05	-.11	-.06	.08	-.15	-.08	.09	-.23	.12	-.23	.05	1		
Actor*	.10	.04	-.16	.02	-.12	.01	-.01	.003	.01	-.21	.01	-.01	.02	1	
Frequency of Purchase*	-.05	-.09	.01	.01	.04	.02	-.01	.07	-.16	.24	-.02	.04	.04	.03	1

*Single item

Table 34: Measurement Statistics for Hemorrhoid Cream for Study 3

	Standardized Loadings	Composite Reliability	Average Variance Extracted
Purchase Pressure (1)	0.82	0.90	0.74
2	0.72		
3	0.74		
4	0.86		
5	0.84		
Categorization Threat (1)	0.93	0.97	0.87
2	0.90		
3	0.95		
4	0.93		
5	0.94		
Acceptance Threat (1)	0.93	0.97	0.92
2	0.98		
3	0.97		
Legitimacy (1)	0.95	0.98	0.85
2	0.90		
3	0.90		
4	0.83		
5	0.98		
6	0.98		
7	0.92		
Temporary Abandonment (1)	0.97	0.95	0.77
2	0.85		
3	0.99		
4	0.88		
5	0.59		
6	0.94		
Permanent Abandonment (1)	0.98	0.95	0.77
2	0.91		
3	0.97		
4	0.83		
5	0.58		
6	0.94		
Control(1)	0.57	0.93	0.65
2	0.63		
3	0.76		
4	0.95		

Table 34: Continued

	Standardized Loadings	Composite Reliability	Average Variance Extracted
5	0.88		
6	0.95		
7	0.84		
Purchase intentions (1)	0.98	0.98	0.92
2	0.93		
3	0.98		
4	0.97		
5	0.91		
6	0.99		
Expressiveness (1)	0.88	0.95	0.85
2	0.94		
3	0.96		
Anxiety (1)	0.89	0.94	0.84
2	0.93		
3	0.94		
Crowd (1)	0.97	0.97	0.86
2	0.96		
3	0.92		
4	0.93		
5	0.87		

Table 35: Correlation Table for Hemorrhoid Cream for Study 3

Construct	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Categorization Threat (1)	1														
Acceptance Threat (2)	.91	1													
Legitimacy (3)	-.17	-.11	1												
Purchase Pressure (4)	.45	.45	.17	1											
Control (5)	-.52	-.53	.47	-.36	1										
Temp. Abandonment (6)	.47	.52	-.22	.25	-.57	1									
Perm. Abandonment (7)	.42	.40	-.36	.35	-.64	.53	1								
Purchase Intentions (8)	-.47	-.52	.36	-.24	.60	-.44	-.63	1							
Anxiety (9)	.50	.50	-.42	.28	-.66	.51	.59	-.54	1						
Expressiveness (10)	-.04	-.02	.11	.24	.05	.07	.09	.002	.08	1					
Crowding (11)	.19	.17	-.47	.05	-.41	.12	.44	-.40	.50	.12	1				
Anonymity (12)*	.40	-.23	.42	.09	.34	-.06	-.24	.21	-.26	.01	.01	1			
Arousal (13)	-.14	-.16	.08	-.19	.14	-.11	-.21	.29	-.12	.16	.16	.07	1		
Actor*	.28	.29	-.05	.16	-.05	.19	.09	.03	.01	-.18	-.03	.03	.02	1	
Frequency of Purchase*	-.14	-.07	-.03	.12	-.07	.14	.20	-.10	.10	.03	.10	.08	.05	-.04	1

*Single item

Common Method Bias

Several tests were conducted to ensure common method bias (CMB) was not a factor in the data. Harman's single factor test (Podsakoff et al., 2003; Podsakoff and Organ, 1986) suggests running an exploratory factor analysis (EFA) to ensure that the top loaded factor does not exceed 50% of all variance. The variables used in this test included purchase pressure, categorization threat, acceptance threat, legitimacy, temporary abandonment, permanent abandonment, control, purchase intentions, expressiveness, anxiety, and crowding. For foot fungal cream, the first component accounted for 28.94% of variance, and the second component accounted for 15.38%. For hemorrhoid cream, the first factor accounted for 37.57%, and the second factor accounted for 13.23% of variance. Common method bias is not problematic according to Harman's single factor test.

The second test conducted was a common latent factor test tested the same way as in studies one and two. A common method variable (CMV) was created in the measurement model in AMOS, all items were linked to the CMV as well as their original intended construct, and all paths were constrained to be equal (Gaskin, 2011). For foot fungal cream, the resulting regression weight for the CMV variable to the items was .248, which is .0615 when squared. The common variance accounted for by this test is 6.15%, which does not suggest a problem of CMB. Likewise, for hemorrhoid cream, the resulting CMV regression weight was .312, which equals .0973, or 9.73% of variance. Common method bias was not problematic for hemorrhoid cream in study 3 either.

Manipulation Checks

Manipulation checks were conducted on the data to ensure the manipulations were adequately perceived. The same manipulation checks were used as outlined in studies one and two and the pretest for study 3.

Foot Fungal Cream

The items for the physical manipulation check had good reliability (α= .97) and were combined to create a mean score. In the physical manipulation, low physical encroachment had a mean of 4.13 and high physical encroachment had a mean of 5.90, significant at p<.001.

The items for the visual manipulation check also had good reliability (α= .99) and were collapsed to create an average score. Low visual encroachment had a mean of 2.52 and high visual encroachment had a mean of 6.45, significantly different at p<.001.

Hemorrhoid Cream

The items for the physical manipulation check had good reliability (α= .97) and were combined to create a mean score. In the physical manipulation, low physical encroachment had a mean of 3.92 and high physical encroachment had a mean of 6.01, significant at p<.001.

The items for the visual manipulation check also had good reliability (α= .99) and were collapsed to create an average score. Low visual encroachment had a mean of 2.85 and high visual encroachment had a mean of 6.36, significantly different at p<.001.

Confound Checks

To ensure that one manipulation was not confounding the other, a test was conducted according to Perdue and Summers (1986). In this analysis, an ANOVA is run with all the manipulations and their interactions as independent variables and the manipulation check of the manipulation in question as the dependent variable. Only the manipulation related to the

manipulation check should be significant. Any other significant manipulations must have a relatively small partial eta squared value to suggest the confounding manipulation is not overpowering the manipulation in question (Perdue and Summers, 1986).

Foot Fungal Cream

For the physical encroachment confounding check, the physical manipulation is significant to the physical manipulation check at p<.001 with a partial eta squared of .43 (see Table 36). However, the visual manipulation (p<.05) was significant to the physical manipulation check as well. The partial eta squared of the visual manipulation is .04, which is relatively small compared to the partial eta squared of physical. The interaction of physical encroachment and visual encroachment was not significant (p=.69), suggesting that confounding manipulations were not largely impacting the results. These results are also fairly consistent with studies one and two.

Similar results were seen for the visual encroachment manipulation confound check. Visual encroachment was a significant predictor of the visual manipulation check with p<.001 and a partial eta squared of .71. The physical manipulation was also significant to the visual manipulation check at p<.05 and a partial eta squared of .04, which is small. The interaction was not significant (p=.97). Confounding manipulations were not problematic in study 3.

Table 36: Confounding Check Results for Foot Fungal Cream for Study 3

Manipulation	Physical MC	Visual MC
Physical	**p<.001, η=.43**	p<.05, η=.04
Visual	p<.05, η=.04	**p<.001, η=.71**
Physical * visual	P=.69	P=.97

Hemorrhoid Cream

For the physical encroachment confounding check, the physical manipulation is a significant predictor of the physical manipulation check at p<.001 with a partial eta squared of .44 (see Table 37). Again, the visual manipulation (p<.05) was significant with a partial eta squared of .04. The interaction was not significant (p=.46).

For the visual encroachment manipulation confound check, visual encroachment was significant to the visual manipulation check with p<.001 and a partial eta squared of .56. Physical was not significant (p=.36), and the interaction was not significant (p=.79). These results suggest confounding was not problematic in study 3 for hemorrhoid cream.

Table 37: Confounding Check Results for Hemorrhoid Cream for Study 3

Manipulation	Physical MC	Visual MC
Physical	**p<.001, η=.44**	P=.36
Visual	p<.05, η=.04	**p<.001, η=.56**
Physical * visual	P=.46	P=.79

Results

The analyses using ANCOVA (H1-3 and H7) used controls of anxiety, expressiveness, anonymity (same three controls used in studies one and two), and new controls of actor, crowding, frequency of purchase, and arousal as controls (items available in Table 9). ANCOVA was used because the independent variables (IV; physical encroachment, visual encroachment, and legitimacy) were categorical variables (low/high) and the dependent variables (categorization threat and acceptance threat) were continuous. The IVs were placed as fixed factors with either categorization threat or acceptance threat as the dependent variable (DV). The

controls were used as covariates. H4 used a regression analysis as the independent variable (IV) was continuous and the dependent variable (DV) was also continuous. H5 and H6 used Preacher and Hayes' (2008) bootstrap method for mediation. Hypotheses 8-11 were new to study 3 and expand upon the previously tested model. These hypotheses used regression analysis.

Hypothesis one predicts higher levels of physical encroachment will have a negative relationship to (a) categorization threat and (b) acceptance threat. Using an ANOCVA analysis with physical encroachment as the independent variable and categorization threat as the dependent variable with the controls previously listed, foot fungal cream ($F(1, 130)=4.19$, $p<.05$, $mean_{low}= 3.00$; $mean_{high}= 2.36$) supports hypothesis 1a, similar to results fully supporting the hypothesis in study 1 and marginally supporting in study 2. For hemorrhoid cream, the results were not significant ($F(1,140)= 2.05$, $p=.16$, $mean_{low}= 3.52$; $mean_{high}= 3.04$), although the means were in the correct direction matching study 2's not-supported findings as well. Hypothesis 1a is only supported by significant results with foot fungal cream (summary of hypotheses supported in study 3 found in Table 40).

Part b of hypothesis one examines the impact of physical encroachment on acceptance threat. For foot fungal cream, the results marginally support the hypothesis ($F(1,130)= 3.04$, $p=.08$, $mean_{low}= 2.92$; $mean_{high}= 2.32$), which was fully supported in studies 1 and 2. The results are not significant for hemorrhoid cream ($F(1,140)=2.1$, $p=.15$, $mean_{low}= 3.48$; $mean_{high}= 3.00$), which is inconsistent with study 1 but consistent with study 2. Hypothesis 1b is marginally supported with the foot fungal cream data only.

Hypothesis two predicts that higher levels of visual encroachment will negatively impact (a) categorization and (b) acceptance threat. Study 1 found marginal significance for both products for the hypothesis part a. Study 2 saw significance for both parts of the hypothesis in

hemorrhoid cream only. In study 3, for part a, which examines categorization threat, foot fungal results were not supported ($F(1,130)= .27$, $p=.61$, $mean_{low}= 2.81$; $mean_{high}= 2.51$) and hemorrhoid cream results were marginal ($F(1,140)= 3.12$, $p=.08$, $mean_{low}= 3.46$; $mean_{high}= 3.07$). Part b examining acceptance threat has partial support as the foot fungal results were not significant ($F(1,130)= .28$, $p=.6$, $mean_{low}= 2.67$; $mean_{high}= 2.56$) , but the hemorrhoid cream results were ($F(1,140)= 4.36$, $p<.05$, $mean_{low}= 3.45$; $mean_{high}= 2.99$).

Hypotheses 3a and (b) state that the interaction of visual and physical encroachment will have a negative effect on (a) categorization threat and (b) acceptance threat. While study 1 did not find support for either product, marginal results were found for foot fungal cream in study 2. In study 3, marginal results were found for hemorrhoid cream instead. For categorization threat, foot fungal cream did not result in an interaction ($F(1,130)=18$, $p=.67$), but hemorrhoid cream had a marginal one ($F(1,140)=.299$, $p=.09$), which did not match findings from the previous 2 studies. For acceptance threat, foot fungal cream again did not have a significant interaction ($F(1,130)=.06$, $p=.81$), but hemorrhoid cream also found marginal significance ($F(1,140)=3.42$, $p=.07$), with again only hemorrhoid cream marginally supporting H3b. To further investigate the interactions, hemorrhoid cream planned comparisons were examined. Foot fungal cream was not further examined as the interactions were not significant.

For H3a, the simple effect of visual encroachment is significant when physical encroachment is low ($F(1,77)=9.67$, $p<.01$) but not when physical encroachment is high ($F(1,64)=.75$, $p=.39$). When physical encroachment is low (see Figure 15), low visual encroachment (bar A: mean=3.97) is different from high visual encroachment (bar B: mean=3.04, $p<.01$). There is not a difference between visual encroachment when physical encroachment is

high. This supports the hypothesis that visual encroachment will be significantly different in low physical levels but not in high physical levels.

For H3b, similar results are seen to H3a. The simple effect of visual encroachment is significant only when physical encroachment is low ($F(1,77)=9.71$, $p<.01$) and not when physical encroachment is high ($F(1,64)=.72$, $p=.40$). When physical encroachment is low (see Figure 16), low visual encroachment (bar A: mean=3.89) is different from high visual encroachment (bar B: mean=3.00, $p<.01$). There is not a difference between visual encroachment when physical encroachment is high. As with H3a, this supports the hypothesis.

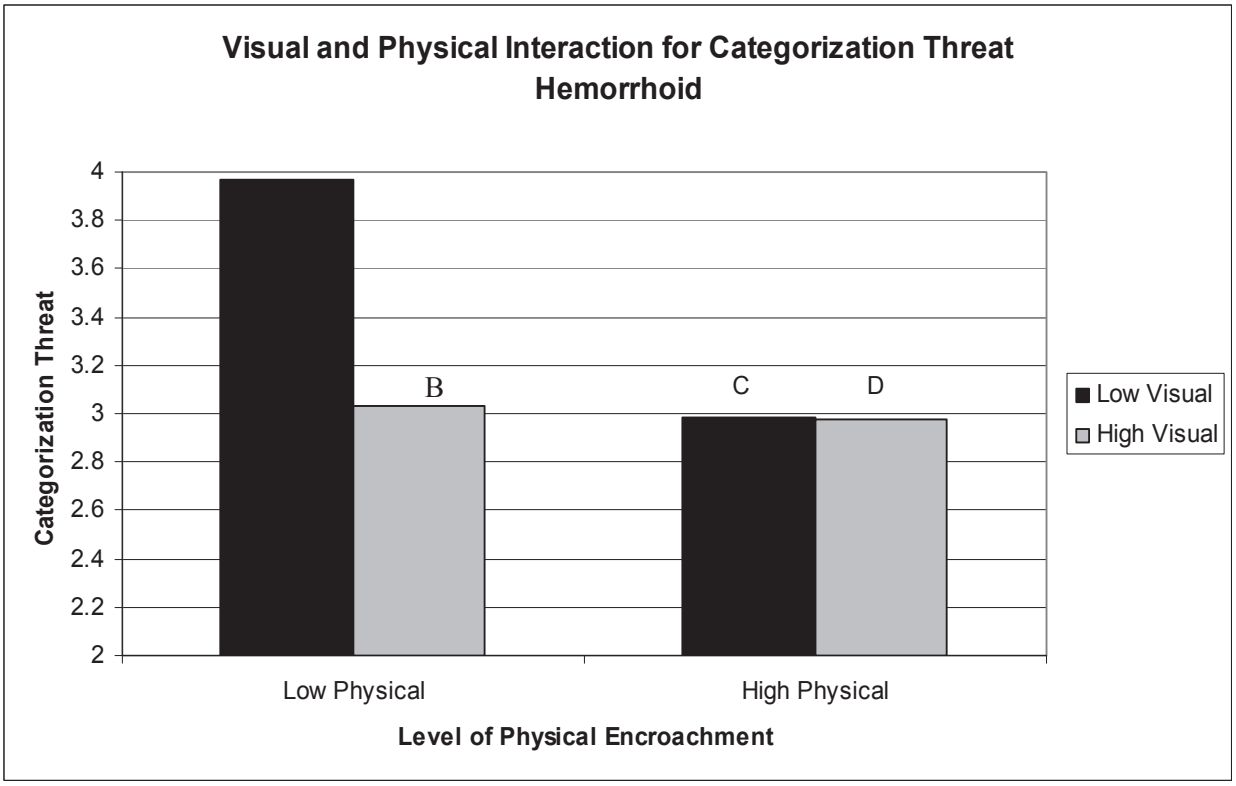


Figure 15: Physical * Visual for Cat. Threat (H3a): Hemorrhoid in Study 3

Hypotheses 4a and 4b both used regression to test the relationships. H4a says that categorization threat has a positive relationship to purchase pressure, which is supported with both foot fungal cream and hemorrhoid cream data sets. In foot fungal cream, the regression found support for the hypothesis (β=.49, t=6.38, p<.001); the hemorrhoid cream hypothesis was also supported by the results (β=.37, t=4.62, p<.001), fully supporting H4a across both products as supported in studies 1 and 2. Hypothesis 4b says that acceptance threat will have a positive relationship to purchase pressure. Foot fungal showed significant results (β=.41, t=5.14, p<.001) as did hemorrhoid cream (β=.38, t=4.83, p<.001), thus fully supporting H4b and replicating results found in studies one and two.

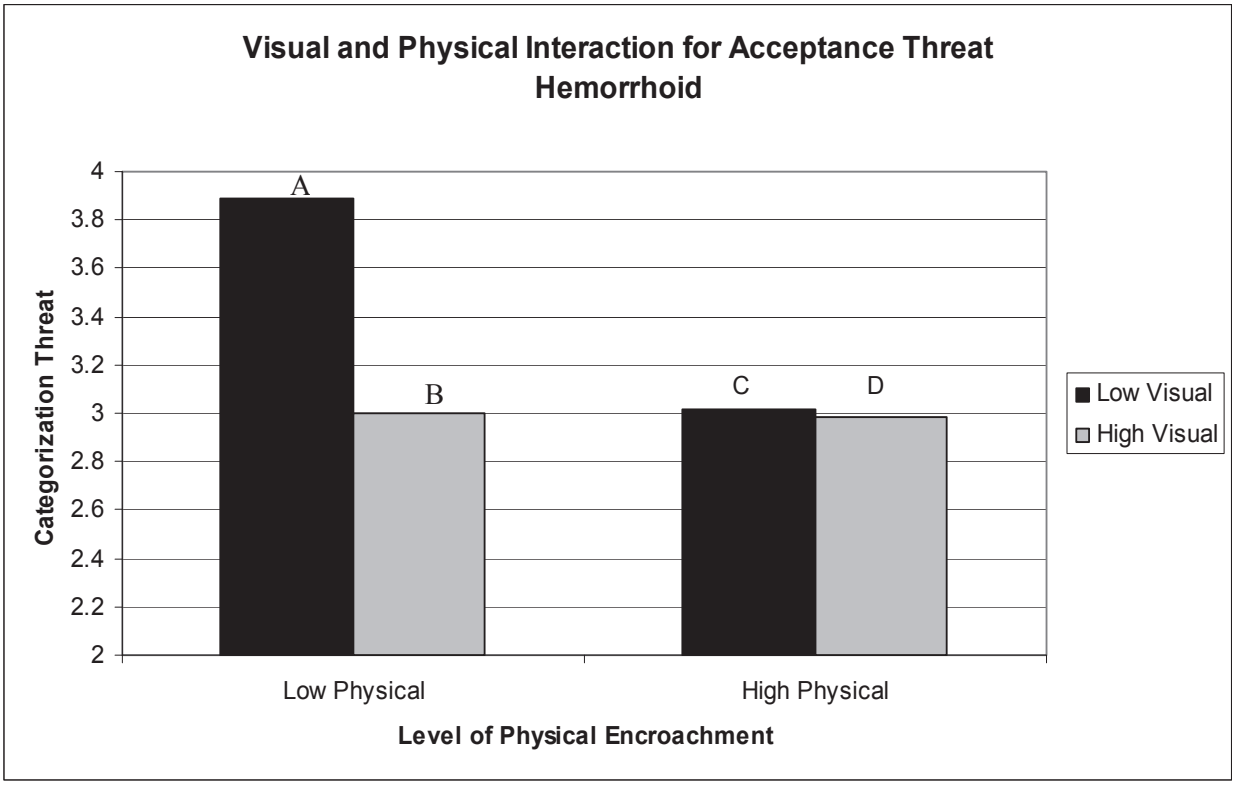


Figure 16: Physical * Visual for Acc. Threat (H3b): Hemorrhoid in Study 3

Hypotheses 5 and 6 both predicted mediation of the threats between encroachments and purchase pressure. Preacher and Hayes' bootstrap method (Preacher and Hayes, 2008; Zhao, Lynch, and Chen, 2010) was used to test these relationships. For H5a, physical encroachment was the independent variable, purchase pressure the dependent variable, and categorization threat as the mediator. Beginning with foot fungal, the path from physical encroachment to purchase pressure as mediated through categorization threat (H5a, see Table 38) had a significant mean indirect effect (β= -.17), with a 95% confidence interval excluding zero (-.17 to -.003). The direct effect of physical encroachment on purchase pressure was not significant (p=.49), suggesting indirect-only mediation (Zhao, Lynch, and Chen, 2010). This type of mediation is similar to full mediation as outlined by Baron and Kenny (1986) (Mogilner et al.2012). Full mediation was also seen for physical encroachment to purchase pressure when mediated through acceptance threat (H5b), with a significant mean indirect effect (β= -.16) and a 95% confidence interval excluding zero (-.38 to -.01). The direct effect was also not significant (p=.47). Thus, both H5a and H5b were supported for foot fungal cream in study 3.

For H6a and H6b, the relationship being mediated is that of visual encroachment to purchase pressure. When categorization threat is the mediator (H6a), a significant mean indirect effect suggested mediation (β= -.21), and the 95% confidence interval excluded zero (-.48 to -.02). The indirect effect was significant (p<.05) and the product of the coefficients was positive, suggesting complementary mediation by an omitted mediator. Similar results were seen when acceptance threat was the mediator (H6b), as the indirect mean was significant (β= -.15) and the 95% confidence interval excluded zero (-.38 to -.004). As with categorization threat, the indirect path was significant (p<.05) and the product of the coefficients positive, again suggesting

mediation but indicating an omitted mediator. These results support H5a, H5b, H6a, and H6b for foot fungal cream in study 3.

Table 38: Mediation Results for Foot Fungal Cream Study 3

Mediation Path	Indirect effect β (a x b)	95% confidence interval	a	b	c	a x b x c	Mediation type?
Physical→ CT	-.17	-.17 to -.003	-.41	.41	-.17 (p=.49)	.03	Indirect only
Physical→ AT	-.16	-.38 to -.01	-.46	.34	-.17 (p=.47)	.03	Indirect only
Visual→ CT	-.21	-.48 to -.02	-.55	.38	-.62 (p<.05)	.13	Complementary mediation
Visual→ AT	-.15	-.38 to -.004	-.48	.30	-.61 (p<.05)	.09	Complementary mediation

The mediation results for hemorrhoid cream also all found support (see Table 39). Beginning with physical encroachment to purchase pressure as mediated through categorization threat (H5a), there was a significant mean indirect effect (β= -.14), with a 95% confidence interval excluding zero (-.37 to -.01). The direct effect of physical encroachment on purchase pressure was not significant (p=.47), suggesting indirect-only mediation (Zhao, Lynch, and Chen, 2010), similar to full mediation as outlined by Baron and Kenny (1986). The mediated relationship of physical encroachment to purchase pressure through acceptance threat also had a significant mean indirect effect (β= -.11), with a 95% confidence interval that did not include zero (-.29 to -.01) and an insignificant direct effect, (p=.98) suggesting full mediation.

The visual relationship to purchase pressure also had significant mediation results for categorization threat (H6a) and acceptance threat (H6b). For the mediator of categorization threat, the mean indirect effect was significant (β= -.10) and the 95% confidence interval excluded zero

(-.31 to -.003) with a not-significant direct path (p=.16). This is suggestive of indirect only, or full, mediation. Likewise, when acceptance threat was the mediator between visual encroachment and purchase pressure (H6b), the mean indirect effect was significant (β= -.12) and the 95% confidence interval did not include zero (-.32 to .01). Consistent with the other mediation results for hemorrhoid cream in study 3, the indirect path was not significant (p=.25), indicating indirect only (full) mediation. The results for hemorrhoid cream in study 3 support H5a, H5b, H6a, and H6b.

Table 39: Mediation Results for Hemorrhoid Cream Study 3

Mediation Path	Indirect effect β (a x b)	95% confidence interval	a	b	c	a x b x c	Mediation type?
Physical→ CT	-.14	-.37 to -.01	-.42	.34	-.01 (p=.97)	.001	Indirect only
Physical→ AT	-.11	-.29 to -.01	-.44	.26	-.01 (p=.98)	.001	Indirect only
Visual→ CT	-.10	-.31 to -.003	-.41	.24	-.33 (p=.16)	.03	Indirect only
Visual→ AT	-.12	-.32 to -.01	-.49	.24	-.27 (p=.25)	.03	Indirect only

Hypothesis 7 had four parts (a-d) examining the interaction of legitimacy with the two different types of encroachment. The hypotheses suggested that lower legitimacy situations would see high reactance or greater difference between low and high levels of encroachment; alternately, higher legitimacy would see less difference between low and high levels of encroachment. For H7a, foot fungal cream found a marginally significant interaction between physical encroachment and legitimacy in regards to categorization threat ($F(6,130)= 1.92$, $p=.09$), whereas hemorrhoid cream had full significance ($F(6,140)=2.61$, $p<.05$). Similar results were

seen for H7b, only the interactions were fully significant for both products: foot fungal ($F(6,130)=2.21$, $p<.05$) and hemorrhoid cream ($F(6,140)=.2.82$, $P<.05$).

The significant interactions were examined further to determine if the hypothesis was supported. Only significant interactions were broken down and examined further. As the legitimacy variable was measured in study 3, and not manipulated as it was in study 2, the variable was then split into a low and high dichotomous variable for planned comparisons and graphing purposes. The variable was split by the median for both foot fungal and hemorrhoid cream separately. For the first interaction examined, H7a in foot fungal cream, when legitimacy was low, physical encroachment had a significant simple effect ($F(1,77)=4.06$, $p<.05$) which was not significant when legitimacy was high ($F(1,53)=1.89$, $p=.18$). These results showed that when legitimacy is low (see Figure 17), low physical encroachment (bar A: mean= 3.38) is different from high physical encroachment (bar B: mean=2.62, $p<.05$). These results support H7a that more reactance was elicited in low legitimacy as seen by significant results for low legitimacy across physical encroachment and insignificant results in high legitimacy. The significant results in foot fungal marginally support H7a, which was fully supported in study 2.

The next interaction examined, H7a in hemorrhoid cream, again showed that physical encroachment was significant in low legitimacy ($F(1,79)=19.69$, $p<.001$) but not in high legitimacy ($F(1,62)=.52$, $p=.48$). These results showed that when legitimacy is low (see Figure 18), low physical encroachment (bar A: mean= 4.14) is marginally different from high physical encroachment (bar B: mean=2.62, $p<.001$). These results again support H7a for study 3 (results in study 2 did not support this interaction for hemorrhoid cream).

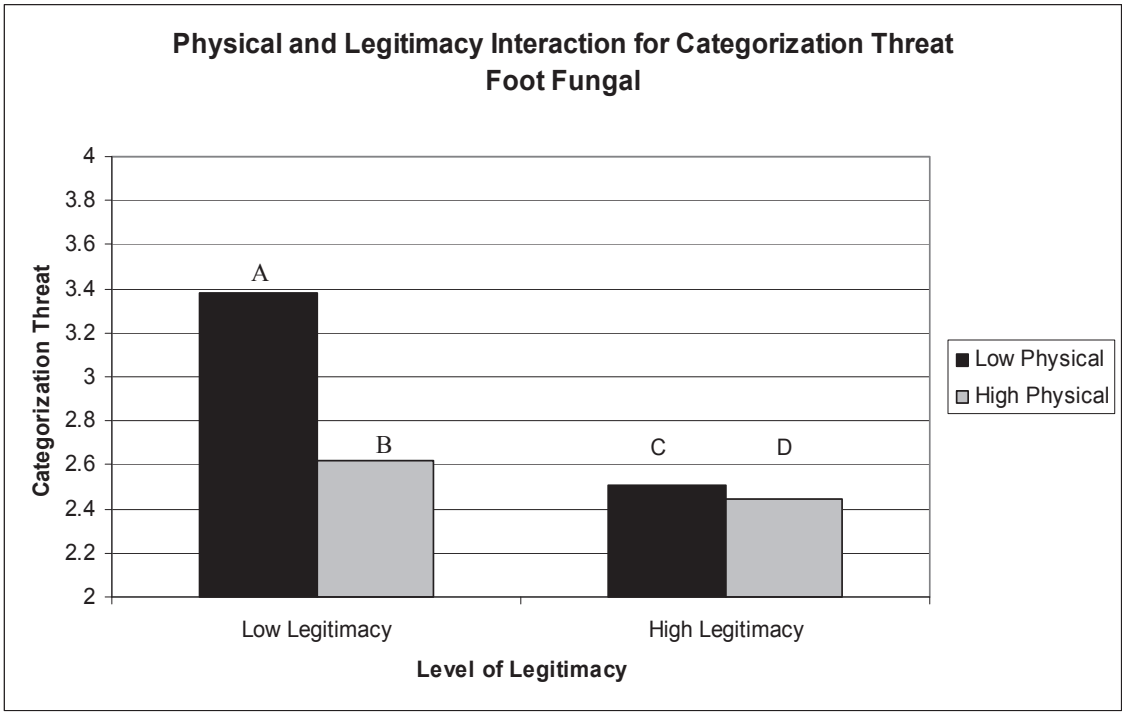


Figure 17: Physical * Legitimacy for Cat. Threat (H7a): Foot Fungal in Study 3

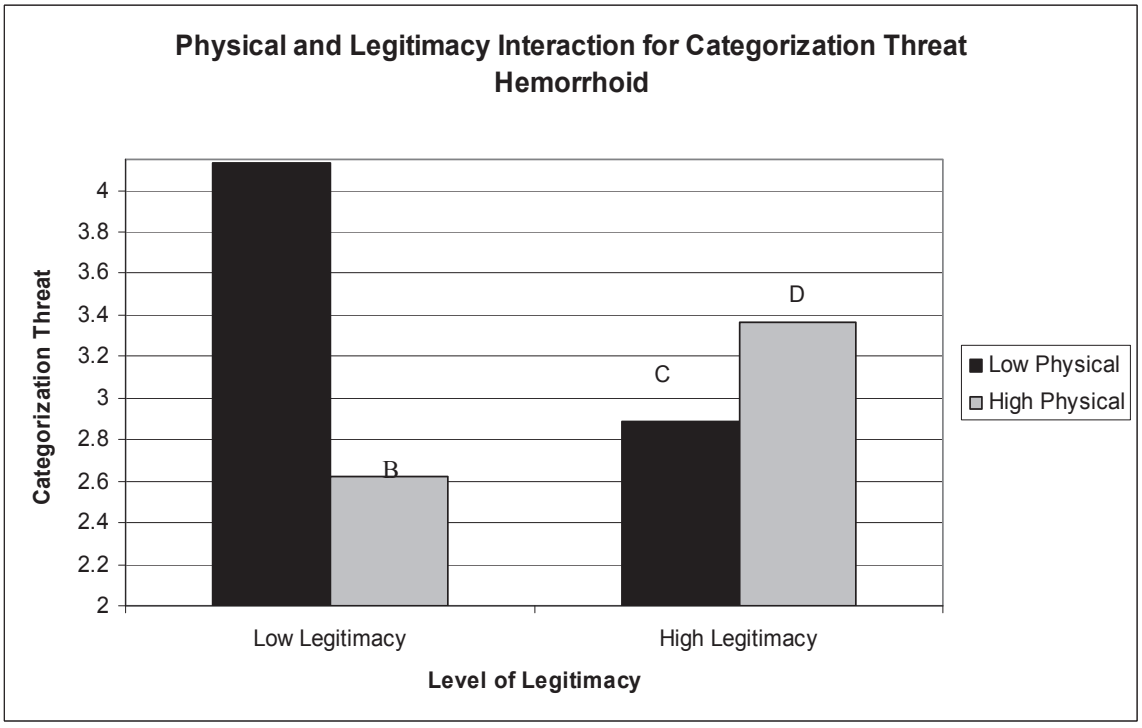


Figure 18: Physical * Legitimacy for Cat. Threat (H7a): Hemorrhoid in Study 3

The results for hypothesis 7b were significant for foot fungal cream and hemorrhoid cream. For foot fungal, however, the physical simple effect was not significant in low legitimacy ($F(1,77)=2.00$, $p=.16$) or in high legitimacy ($F(1,53)=.07$, $p=.80$). This only partially supports the hypothesis that that low legitimacy conditions will elicit more reactance than higher legitimacy conditions. There was a significant difference of levels of legitimacy in low physical (consistent with the hypothesis), but the difference was also significant in high physical encroachment, which was not expected according to the hypothesis and theory.

For hemorrhoid cream in H7b, the simple effect of physical encroachment in low legitimacy was significant ($F(1,79)=13.85$, $p<.001$) and again not significant in high legitimacy ($F(1,62)=.31$, $p=.58$). When legitimacy is low (see Figure 19), low physical encroachment (bar A: mean=3.79) is different from high physical encroachment (bar B: mean= 2.36, $p<.001$). These results support hypothesis 7b (not supported in study 2).

Hypothesis 7 parts c and d examined the interaction of legitimacy with visual encroachment on the two types of threat. For H7c the hypothesis predicted that there would be an interaction between legitimacy and visual encroachment such that high legitimacy of threat would have a small change in categorization threat across low and high levels of visual encroachment but that low legitimacy would see a larger and significant change in categorization threat from low to high levels of visual encroachment. This was not supported in foot fungal ($F(1,130)=1.17$, $p=.33$) nor with hemorrhoid cream ($F(1,140)= 1.76$, $p=.13$) and is consistent with study 2.

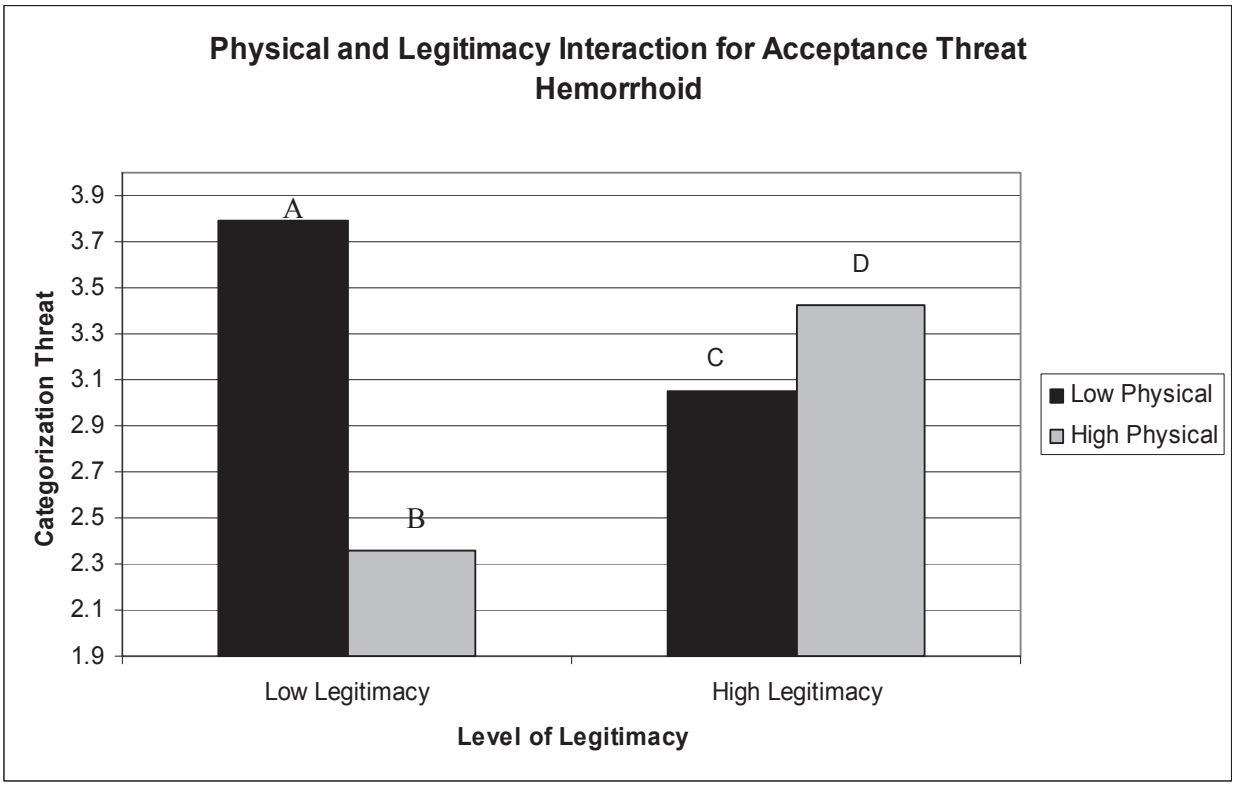


Figure 19: Physical * Legitimacy for Acc. Threat (H7b): Hemorrhoid in Study 3

Part d of hypothesis 7 predicted the same results as part c only using acceptance threat. As in study 2, this was not supported in foot fungal cream ($F(1,130)= .92$, $p= .46$), but in contrast to study 2 the interaction was significant with hemorrhoid cream ($F(1,140)= 2.99$, $p<.05$). As only hemorrhoid cream for h7d was significant, it was the only interaction examined further with planned comparisons.

For this interaction, the simple effect of visual encroachment was significant in low legitimacy ($F(1,79)=5.62$, $p<.05$) but not significant in high legitimacy ($F(1,62)=.04$, $p=.84$). When legitimacy is low (see Figure 20), low visual encroachment (bar A: mean= 3.63) is different from high visual encroachment (bar B: mean=2.53, $p<.05$). These results support hypothesis 7d for hemorrhoid cream.

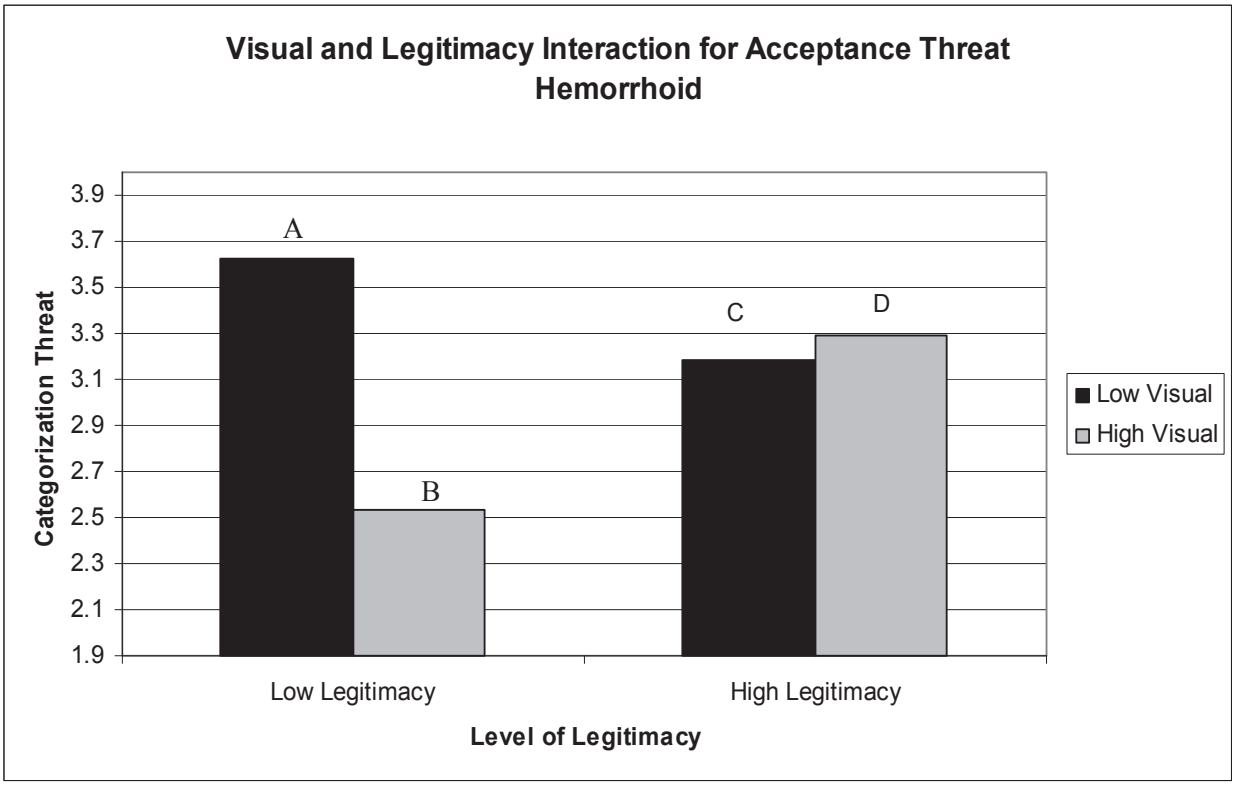


Figure 20: Visual * Legitimacy for Acc. Threat (H7d): Hemorrhoid in Study 3

Hypotheses 8-11 were all new in study 3 and dealt with feelings of control. Hypothesis eight predicted a negative relationship to purchase pressure and feelings of control. These relationships were tested using regression analysis, and the result was supported for both foot fungal cream (β= -.30, t=-3.94, p<.001) and hemorrhoid cream (β= -.33, t=-4.12, p<.001). Hypothesis nine stated that feelings of control would then have a negative relationship to temporary abandonment of the area, which was also significant for foot fungal (β= -.32, t=-3.81, p<.001) and hemorrhoid cream (β= -.45, t=-5.87, p<.001). Hypothesis 10 was similar to nine and stated control would have a negative relationship to permanent abandonment of the area, which was also fully significant for foot fungal cream (β= -.53, t=-6.98, p<.001) and hemorrhoid (β= -

.54, t=-7.47, p<.001). Lastly, hypothesis 11 predicted that feelings of control would have a positive relationship to purchase intentions. This was also supported for both foot fungal (β= .53, t=7.04, p<.001) and hemorrhoid cream (β=.60, t=8.78, p<.001).

Summary of Findings

Study 3 extended the model previously tested in the first two studies by adding hypotheses 8-11, which dealt with feelings of control. Generally, the model found strong support for physical encroachment's relationship to the threats along with support for the back end of the model for foot fungal cream (see Figure 21 for visual depiction of results). The legitimacy moderator also found support for its impact on the physical encroachment relationship. Essentially, only the visual encroachment hypotheses did not find support for foot fungal cream in study 3. Physical encroachment led to more categorization and acceptance threat. When the legitimacy of the encroachment was low, more reactance was seen across levels of encroachment. When the threats increased, so did purchase pressure. This increase in pressure led to less feelings of control. As feelings of control decreased, temporary and permanent abandonment increased, and purchase intentions went down.

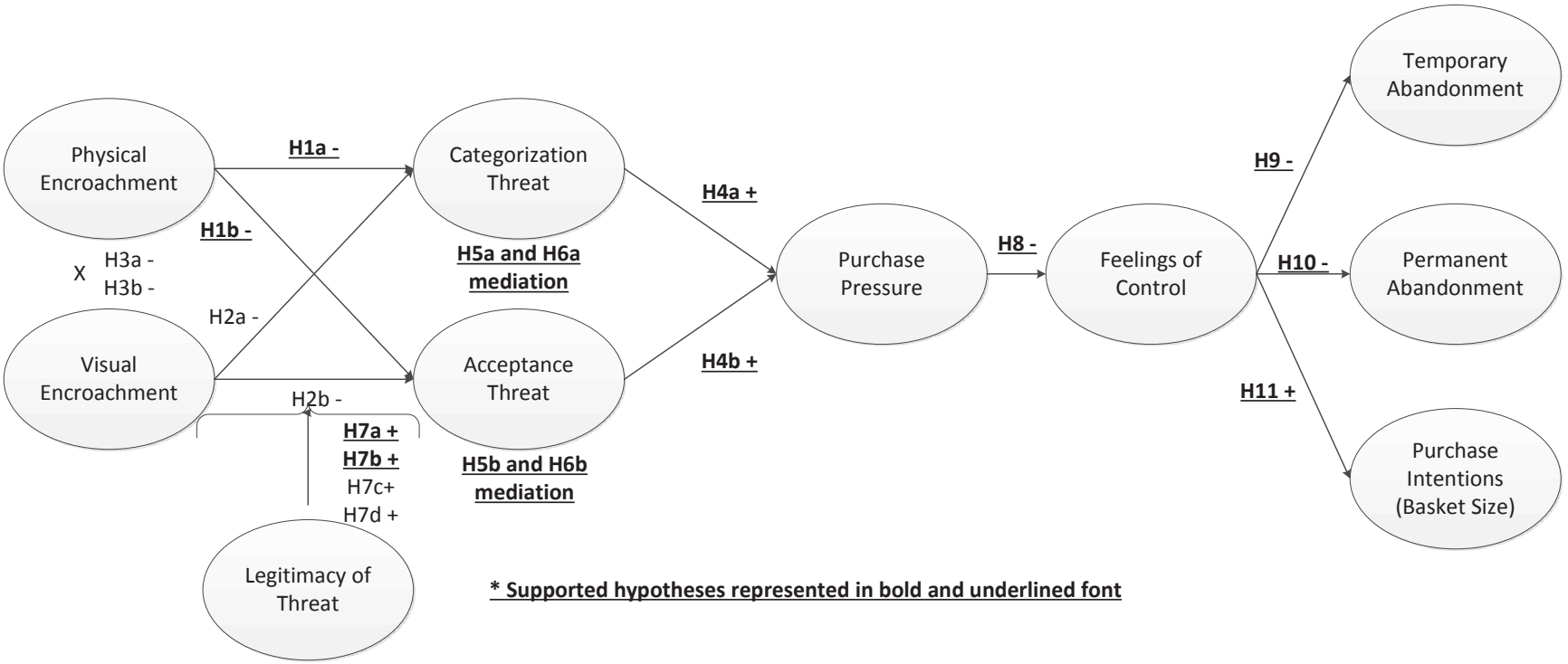


Figure 21: Significant Findings for Foot Fungal Cream for Study 3

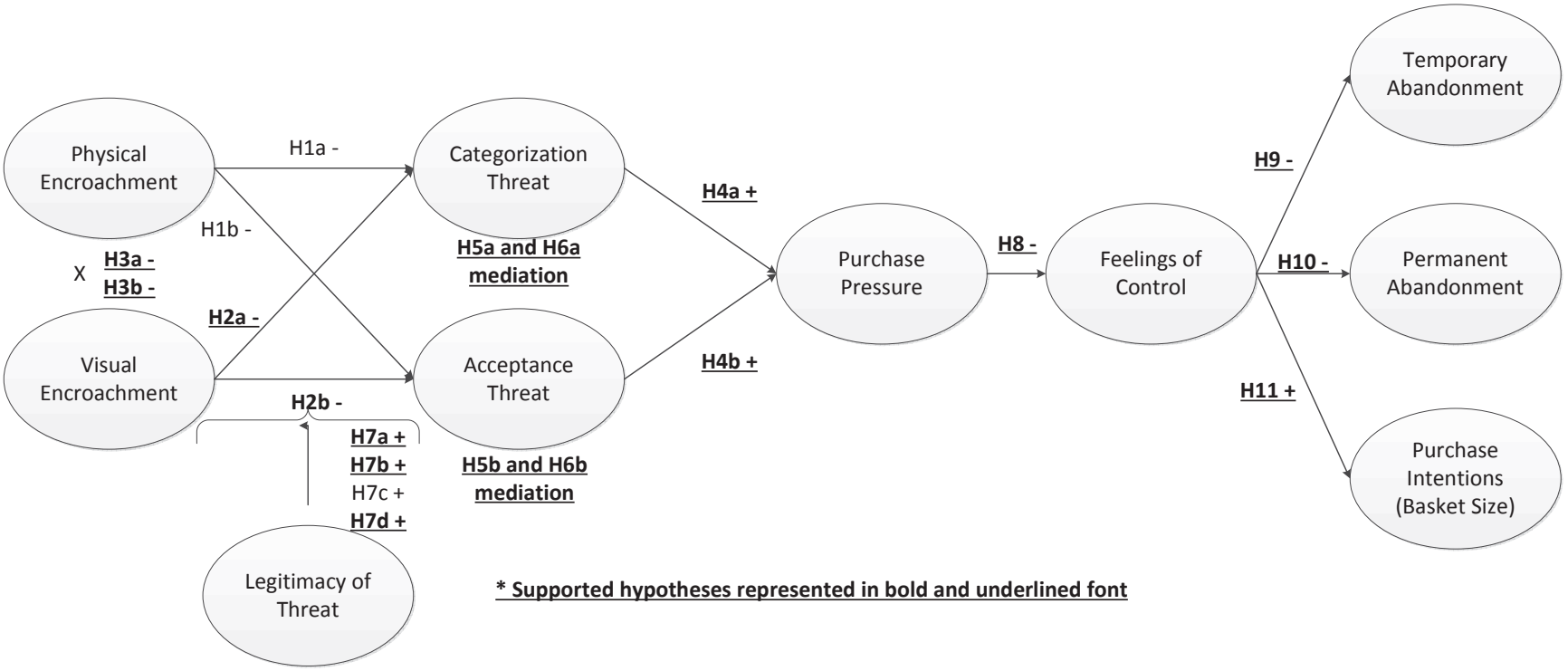


Figure 22: Significant Findings for Hemorrhoid Cream for Study 3

For hemorrhoid cream, the significant results were for visual encroachment. As visual encroachment increases, categorization and acceptance threat decrease (see Figure 22 for visual representation). The findings did not support the relationship of physical encroachment on the threats. However, hemorrhoid cream did have significant interactions between physical and visual encroachment, showing that when both encroachments are low, threats are highest. Adding one encroachment has a significant reduction in threat felt, but each additional encroachment does not significantly impact threats as much as the first. While the physical encroachment relationship was not significant for hemorrhoid cream, the legitimacy moderator did show differences in low legitimacy and high legitimacy for that relationship. The same is true for visual encroachment's relationship to acceptance threat only (the moderator was not significant when examining visual encroachment and categorization threat).

Like foot fungal cream, the hemorrhoid data also saw significant results with the back end of the model. When the threats increased, so did purchase pressure. This increase in pressure led to fewer feelings of control. As feelings of control decreased, temporary and permanent abandonment increased, and purchase intentions decreased.

Study 3 found similar results to study 2. For H1a, foot fungal cream found full support and had marginal support for H1b. Hemorrhoid cream did not support either hypothesis in study 3. For hypothesis two, foot fungal cream did not support either part (also not supported in study 2), but H2a was marginal and H2b was fully supported for hemorrhoid cream. In studies one and two, differences were found between the products across embarrassment and frequency of purchase (anxiety found differences in study 1). For study 3, anxiety was not different for the products as it was in study 1 ($mean_{foot}$=2.66, $mean_{hemorrhoid}$=2.79, p=.38), although the means

were in the same direction as the previous studies. Embarrassment was significantly different ($mean_{foot}$=2.60, $mean_{hemorrhoid}$=3.09, p<.001), suggesting embarrassment might explain the differences found in the products as hemorrhoid cream was significantly higher in embarrassment than foot fungal cream for all three studies. Frequency of purchase did not show significant differences in this study ($mean_{foot}$=1.48, $mean_{hemorrhoid}$=1.38, p=.20) although hemorrhoid cream is still purchased less frequently. New to study 3 was the additional collection of a crowding variable, which showed differences between the two products ($mean_{foot}$=3.41, $mean_{hemorrhoid}$=4.28, p<.001) suggesting that those in the hemorrhoid cream scenario actually felt more crowded on average. The physical manipulations were identical (the same clip was used) for both products, so the actual physical distance was the exact same. However, crowding is a perception (Stokols, Rall, Pinner, & Scholar, 1973) and participants perceived more crowding in the hemorrhoid situation, perhaps due to the increase of embarrassment. This variable could help explain differences between the physical and visual manipulation between the two products.

In study 2, the interactions of physical and visual encroachment were marginally significant for foot fungal only. In study 3, the interactions were again marginally significant for foot fungal only. The marginal results showed higher threats in low physical and low visual encroachments as compared to other levels of encroachment, which supports the hypothesis and theory, although the results are not fully supported across products and studies.

As in the first two studies, categorization threat and acceptance threat both have positive relationships to purchase pressure for both products. The mediation hypotheses (H5 and H6) were also fully supported for both products. This shows that both threats (categorization and acceptance) mediate the relationship of both encroachments (physical and visual) and purchase pressure in study 3, as predicted.

The legitimacy hypotheses found more support in study 3 than found in study 2. H7a was only supported with foot fungal cream in study 2. For study 3, however, the foot fungal results were marginal and hemorrhoid cream was fully supported. For study 3, there was an interaction of legitimacy and physical encroachment such that high legitimacy had a non-significant change in categorization threat across physical encroachment but low legitimacy had a significant change. This is in line with reactance theory (Brehm, 1966), which states that high legitimacy lessens reactance. H7b found partial support with foot fungal cream and full support with hemorrhoid cream regarding the interaction of physical encroachment and legitimacy of threat on acceptance threat. H7c again found no support. H7d was not supported by foot fungal cream in study 2 or study 3, but hemorrhoid cream did find support for H7d in study 3. This result for study 3 showed that low legitimacy garnered more reactance in terms of a significant change in acceptance threat from low to high levels of visual encroachment where high legitimacy did not.

Lastly, study 3 introduced new variables of feelings of control, temporary abandonment, permanent abandonment, and purchase intentions. The study found full support for the hypotheses across both products supporting the notion that purchase pressure has a negative relationship to feelings of control (H8), and feelings of control have a negative relationship to temporary abandonment (H9), a negative relationship to permanent abandonment (H10), and a positive relationship to purchase intentions (H11).

Table 40: Summary of Findings for Study 3

Hypothesis	Foot Fungal	Hemorrhoid
H1a: Higher levels of physical encroachment have a negative relationship to categorization threat	Supported	Not Supported
H1b: Higher levels of physical encroachment have a negative relationship to acceptance threat	Marginal	Not Supported
H2a: Higher levels of visual encroachment have a negative relationship to categorization threat	Not Supported	Marginal
H2b: Higher levels of visual encroachment have a negative relationship to acceptance threat	Not Supported	Supported
H3a: There will be an interaction of physical and visual encroachment such that there will be a significant difference of categorization threat in low physical encroachment across levels of visual encroachment, but there will not be a significant difference of categorization threat in high encroachment across levels of visual encroachment.	Not Supported	Marginal
H3b: There will be an interaction of physical and visual encroachment such that there will be a significant difference of acceptance threat in low physical encroachment across levels of visual encroachment, but there will not be a significant difference of acceptance threat in high encroachment across levels of visual encroachment.	Not Supported	Marginal
H4a: Categorization threat has a positive relationship to purchase pressure	Supported	Supported
H4b: Acceptance threat has a positive relationship to purchase pressure	Supported	Supported
H5a: Categorization threat mediates physical encroachment and purchase pressure	Supported	Supported
H5b: Acceptance threat mediates physical encroachment and purchase pressure	Supported	Supported
H6a: Categorization threat mediates visual encroachment and purchase pressure	Supported	Supported
H6b: Acceptance threat mediates visual encroachment and purchase pressure	Supported	Supported
H7a: There will be an interaction between physical encroachment and legitimacy such that high legitimacy will have a small/insignificant change in categorization threat across low and high levels of physical encroachment but low legitimacy will have a large/significant change in categorization threat across physical encroachment.	Marginal	Supported
H7b: There will be an interaction between physical encroachment and legitimacy such that high legitimacy will have a small/insignificant change in acceptance threat across low and high levels of physical encroachment but low legitimacy will	Partial	Supported

Table 40: Continued

Hypothesis	Foot Fungal	Hemorrhoid
have a large/significant change in acceptance threat across physical encroachment.		
H7c: There will be an interaction between visual encroachment and legitimacy such that high legitimacy will have a small/insignificant change in categorization threat across low and high levels of visual encroachment but low legitimacy will have a large/significant change in categorization threat across visual encroachment.	Not Supported	Not Supported
H7d: There will be an interaction between visual encroachment and legitimacy such that high legitimacy will have a small/insignificant change in acceptance threat across low and high levels of visual encroachment but low legitimacy will have a large/significant change in acceptance threat across visual encroachment.	Not Supported	Supported
H8: Purchase pressure has a negative relationship to feelings of control.	Supported	Supported
H9: Feelings of control have a negative relationship to temporary abandonment of area.	Supported	Supported
H10: Feelings of control have a negative relationship to permanent abandonment of area.	Supported	Supported
H11: Feelings of control have a positive relationship to purchase intentions (basket size).	Supported	Supported

Convergence of Findings

Results from all three studies were examined to determine overall support for the hypotheses. To help synthesize these findings, a decision rule was given to summarize findings (see Table 41 for a comparison of support for each hypothesis across studies for both products). For hypotheses tested in all three studies (H1-6), general support was decided if two of the three studies found significance at $p<.05$. For hypotheses in only two studies (H7), general support was decided if both studies fully supported the hypothesis at $p<.05$, or if one study did and the other found marginal results at $p<.10$. Partial support was given for H7 if only one study found significance at $p<.05$. Hypotheses 8-11 were only tested in study 3 and were given general

support if found significant at p<.05. See Figure 23 and Figure 24 for visual representation of model with general support.

Overall, the front part of the model found support with foot fungal cream in physical encroachment and with hemorrhoid cream for visual encroachment. The results regarding the legitimacy moderator were partially supported. The back end of the model (from the threat constructs and beyond) found strong support across all the studies.

For hypothesis one, overall support was given for both parts a and b with foot fungal only. This shows that higher levels of physical encroachment have a negative relationship to both categorization threat and acceptance threat for foot fungal cream only. However, hemorrhoid cream found support for hypothesis two where foot fungal did not. This shows that threats are lower for hemorrhoid cream when visual encroachment is high. These split findings for the products suggest that there are product differences causing physical encroachment to be significant with foot fungal cream and visual encroachment to be impactful for hemorrhoid cream. Foot fungal cream rated lower on anxiety and embarrassment in study 1, and only embarrassment in studies 2 and 3. Additionally, foot fungal cream is purchased more frequently than hemorrhoid cream, which could also impact the results as familiarity can reduce embarrassment associated with a purchase (Dahl et al., 2001). These differences between physical and visual encroachment in regards to foot fungal cream and hemorrhoid cream will be explored more in the discussion section of chapter five.

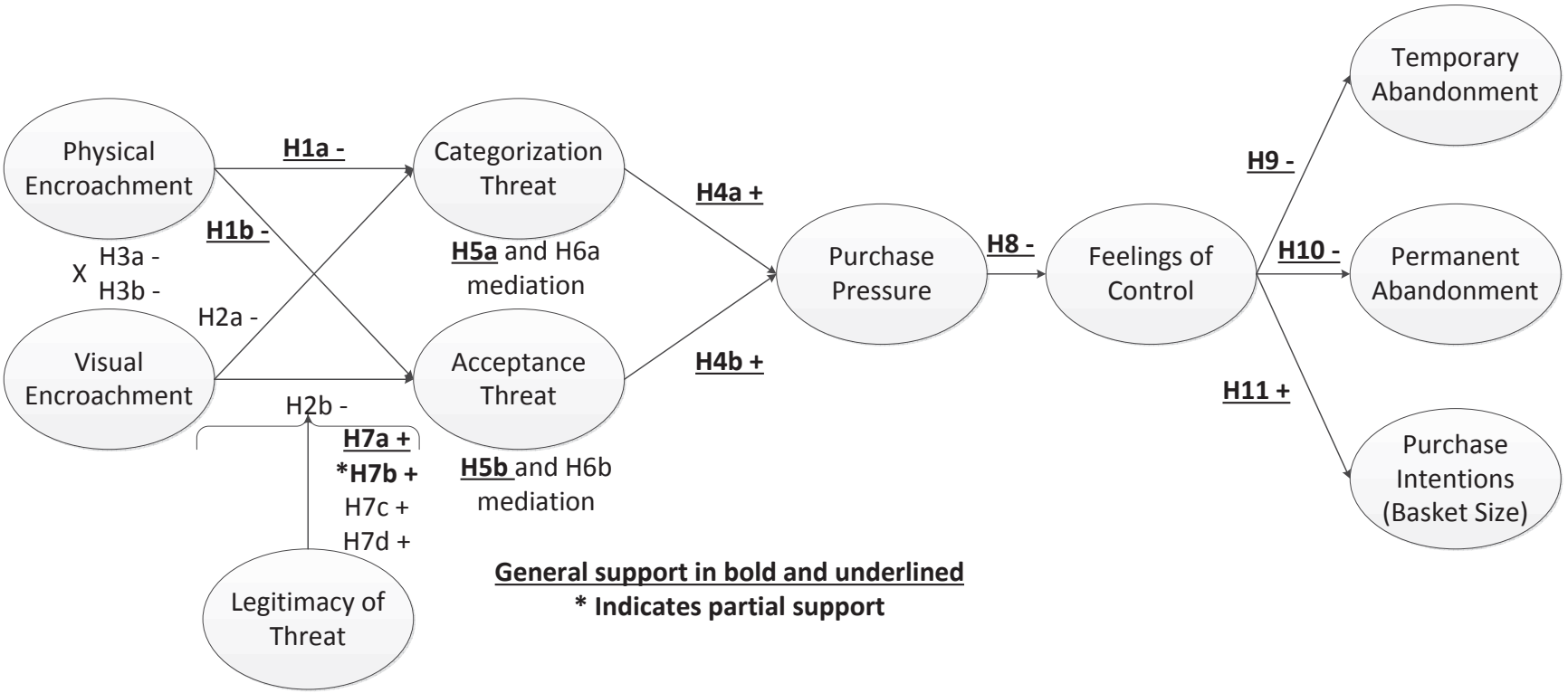


Figure 23: General Support for Foot Fungal Cream

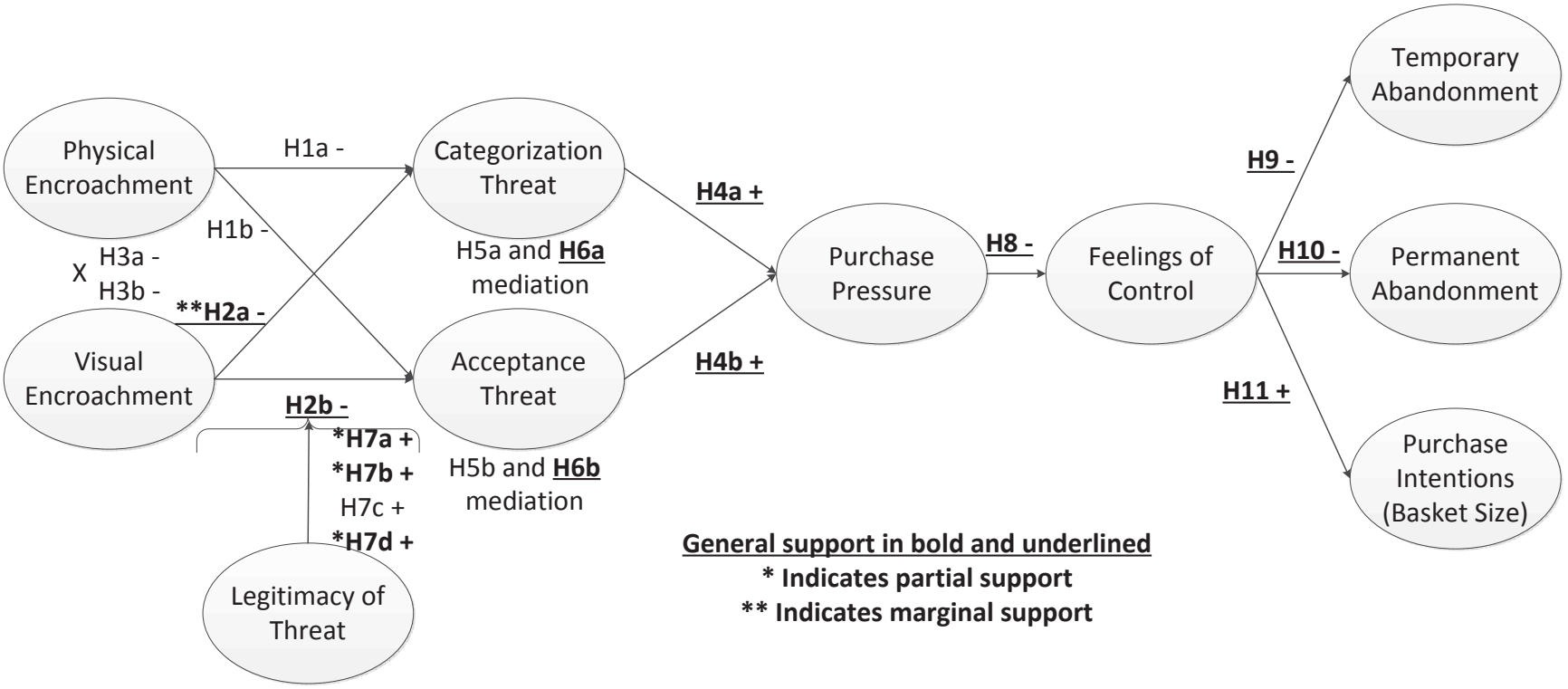


Figure 24: General Support for Hemorrhoid Cream

The interactions of physical and visual encroachment (H3a and H3b) on the threats were not significant overall. Reactance theory (Brehm, 1966) states that the more threats experienced should result in greater reactance (i.e., lower threats as each additional encroachment is added). However, social impact theory (Latante, 1981) points out that the first influential factor added has the greatest impact and each sequential addition will have less impact in comparison. These two theories together suggested that the low physical / low visual encroachment situation should have seen the greatest threat in comparison to the other three levels of encroachment. The lack of interaction between physical and visual encroachment suggests this is not the case. The encroachments act independently of each other, which is evident given the significant results for physical encroachment with foot fungal only and the significant results for visual encroachment with hemorrhoid only.

Hypotheses 4a and 4b both found full support across all three studies. Categorization threat and acceptance threat both have a positive relationship to purchase pressure. As a person feels their identity is threatened, they experience more pressure to purchase a particular product or brand. This is consistent with reactance theory (Brehm, 1966), which states that as a person encounters more threats, they will have an increase in reactance.

Hypotheses 5 and 6 dealt with the threats as mediators. H5 found support with foot fungal cream, and H6 found support with hemorrhoid cream. Again, this is consistent with prior results given physical encroachment's tendency to be impactful with foot fungal cream and visual encroachment's relationship to hemorrhoid cream. The results show that overall both categorization and acceptance threats mediate physical encroachment's relationship to purchase pressure (H5a and H5b) for foot fungal cream only, whereas the threats (categorization and

acceptance) mediate the relationship of visual encroachment and purchase pressure (H6a and H6b) for foot fungal cream only.

The legitimacy hypotheses (H7a-d) found some support, mostly in study 3. Study 3 manipulated the scenarios through videos for a more realistic scenario. Legitimacy was also measured in study 3 and not manipulated as it was in study 2. In general terms, when the legitimacy moderator was significant, a shopper would not have a significant change in threat when legitimacy was high but would have a change in felt threat when legitimacy was low. For example, if a shopper believes an employee has a legitimate reason to physically get close, the shopper will not have a significant change in acceptance threat from when the employee is far away versus when the employee is close. If a shopper believes the employee does not have a legitimate reason, the shopper will feel less threat as the employee gets closer.

For foot fungal cream, H7a was fully supported, showing that high legitimacy has less change in categorization threat than low legitimacy (consistent with theory) across levels of physical encroachment. This result was partially supported with hemorrhoid cream, as it was only found in study 3. Similarly, partial support was found for 7b in both products, which shows that acceptance threat changes less across levels of physical encroachment when legitimacy is high as opposed to having significant change in acceptance threat when legitimacy is low. Reactance theory (Brehm, 1966) states that high levels of legitimacy will cause less reactance but will not eliminate reactance. Therefore, it can be explained that the interactions that were not significant simply did not reduce reactance enough as theory states reactance will still happen.

Hypotheses H7c and H7d did not find any support with foot fungal cream overall. However, while H7c was not supported for hemorrhoid cream, H7d was partially supported. These results suggest that legitimacy impacted the physical encroachment relationships more

strongly than visual encroachment. This finding further suggests that invasions to privacy along dimensions of physical and visual encroachment cause different reactions in the felt threats. Physical and visual encroachments are not equal. Further examination of these differences will be discussed in chapter five.

Lastly, hypotheses 8-11 found full support in study 3. The study found full support for the hypotheses across both products, supporting the notion that purchase pressure has a negative relationship to feelings of control (H8), and feelings of control have a negative relationship to temporary abandonment (H9), a negative relationship to permanent abandonment (H10), and a positive relationship to purchase intentions (H11).

Table 41: Summary of Hypotheses Supported for Each Study

Hypothesis	Foot Fungal			Hemorrhoid		
Support p <.05; Marginal p<.1	**Study 1**	**Study 2**	**Study 3**	**Study 1**	**Study 2**	**Study 3**
H1a: Higher levels of physical encroachment have a negative relationship to categorization threat	Supported	Marginal	Supported	Marginal	Not Supported	Not Supported
	Supported*			**Not Supported**		
H1b: Higher levels of physical encroachment have a negative relationship to acceptance threat	Supported	Supported	Marginal	Supported	Not Supported	Not Supported
	Supported			**Not Supported**		
H2a: Higher levels of visual encroachment have a negative relationship to categorization threat	Marginal	Not Supported	Not Supported	Marginal	Supported	Marginal
	Not Supported			**Marginally Supported**		
H2b: Higher levels of visual encroachment have a negative relationship to acceptance threat	Not Supported	Not Supported	Not Supported	Supported	Supported	Supported
	Not Supported			**Supported**		
H3a: There will be an interaction of physical and visual encroachment such that there will be a significant difference of categorization threat in low physical encroachment across levels of visual encroachment, but there will not be a significant difference of categorization threat in high encroachment across levels of visual encroachment.	Not Supported	Marginal	Not Supported	Not Supported	Not Supported	Marginal
	Not Supported			**Not Supported**		
H3b: There will be an interaction of physical and visual encroachment such that there will be a significant difference of acceptance threat in low physical encroachment across levels of visual encroachment, but there will not be a significant difference of acceptance threat in high encroachment across levels of visual encroachment.	Not Supported	Marginal	Not Supported	Not Supported	Not Supported	Marginal
	Not Supported			**Not Supported**		
H4a: Categorization threat has a positive	Supported	Supported	Supported	Supported	Supported	Supported

Table 41: Continued

Hypothesis	Foot Fungal			Hemorrhoid		
Support p <.05; Marginal p<.1	**Study 1**	**Study 2**	**Study 3**	**Study 1**	**Study 2**	**Study 3**
relationship to purchase pressure	**Supported**			**Supported**		
H4b: Acceptance threat has a positive relationship to purchase pressure	Supported	Supported	Supported	Supported	Supported	Supported
	Supported			**Supported**		
H5a: Categorization threat mediates physical encroachment and purchase pressure	Supported	Not Supported	Supported	Not Supported	Not Supported	Supported
	Supported			**Not Supported**		
H5b: Acceptance threat mediates physical encroachment and purchase pressure	Supported	Supported	Supported	Not Supported	Not Supported	Supported
	Supported			**Not Supported**		
H6a: Categorization threat mediates visual encroachment and purchase pressure	Not Supported	Not Supported	Supported	Supported	Supported	Supported
	Not Supported			**Supported**		
H6b: Acceptance threat mediates visual encroachment and purchase pressure	Not Supported	Not Supported	Supported	Supported	Supported	Supported
	Not Supported			**Supported**		
H7a: There will be an interaction between physical encroachment and legitimacy such that high legitimacy will have an insignificant change in categorization threat across low and high levels of physical encroachment but low legitimacy will have a significant change in categorization threat across physical encroachment.	NA	Supported	Marginal	NA	Not Supported	Supported
	Supported			**Partially supported**		
H7b: There will be an interaction between physical encroachment and legitimacy such that high legitimacy will have an insignificant change in acceptance threat across low and high levels of physical encroachment but low legitimacy will have a significant change in acceptance threat across physical encroachment.	NA	Marginally Supported	Partially Supported	NA	Not Supported	Supported
	Partially supported			**Partially supported**		

Table 41: Continued

Hypothesis	Foot Fungal			Hemorrhoid		
Support p <.05; Marginal p<.1	**Study 1**	**Study 2**	**Study 3**	**Study 1**	**Study 2**	**Study 3**
H7c: There will be an interaction between visual encroachment and legitimacy such that high legitimacy will have an insignificant change in categorization threat across low and high levels of visual encroachment but low legitimacy will have a significant change in categorization threat across visual encroachment.	NA	Not Supported	Not Supported	NA	Not Supported	Not Supported
	Not Supported			**Not Supported**		
H7d: There will be an interaction between visual encroachment and legitimacy such that high legitimacy will have an insignificant change in acceptance threat across low and high levels of visual encroachment but low legitimacy will have a significant change in acceptance threat across visual encroachment.	NA	Not Supported	Not Supported	NA	Not Supported	Supported
	Not Supported			**Partially Supported**		
H8: Purchase pressure has a negative relationship to feelings of control.	NA	NA	**Supported**	NA	NA	**Supported**
H9: Feelings of control have a negative relationship to temporary abandonment of area.	NA	NA	**Supported**	NA	NA	**Supported**
H10: Feelings of control have a negative relationship to permanent abandonment of area.	NA	NA	**Supported**	NA	NA	**Supported**
H11: Feelings of control have a positive relationship to purchase intentions (basket size).	NA	NA	**Supported**	NA	NA	**Supported**

***** Hypotheses tested in three studies (H1-H6) were given general support if two of the three studies found significance at p<.05. Hypotheses in only two studies (H7) were given general support if both studies fully support the hypothesis at p<.05 or if one study was p<.05 and one study was marginally significant at p<.10. Partial support was given to H7 if only one study found significance at p<.05 and the other study did not reach significance. Hypotheses 8-11 were only tested in one study and were given general support if supported in study 3 at p<.05.

Chapter Summary

This chapter analyzed the results of data collection as outlined in chapter 3. Three studies were conducted to test the hypotheses set forth using M-turk participants and experimental scenarios. Studies 1 and 2 used written experiments while study 3 used video experiments. The details of each study were outlined as well as the findings for each study. A summary of findings across all three studies was included to compare and conclude final results from the combined studies.

CHAPTER 5: DISCUSSION, IMPLICATIONS, LIMITATIONS

Chapter four gave a detailed presentation of the results. This chapter discusses the findings in connection to extant literature and theory as well as outlines possible reasons why unexpected results occurred. Following a discussion of the results, this chapter offers theoretical and managerial implications, limitations to the research, opportunities for future research, and concludes the dissertation.

Discussion

The discussion section first examines significant findings from the front part of the model in connection to theory and extant literature. Plausible explanations from data and literature for inconsistent findings are presented. The section ends with a discussion of the back end of the model.

From Encroachments to Threats

When an encroachment (physical or visual) showed a significant relationship to a threat (categorization or acceptance), the results were consistent with reactance theory (Brehm, 1966) by showing that higher levels of an encroachment resulted in greater reactance through decreased threats. These results also support social identity theory (Turner et al., 1979; Hogg, 2003; Hogg et al., 1995; Branscombe et al., 1999). As predicted, when encroachment results were significant, the closer the employee was in the scenarios or the more visual encroachment described resulted in less threats felt by the shopper. Generally speaking, however, only one type of encroachment worked at a time for each product, which is inconsistent with theory. Reactance theory says the more threats occurring at one time will cause greater reactance (Brehm, 1966), suggesting that

more than one encroachment can be impactful simultaneously and that the combination of both should see more reactance. The results did not support theory in this way.

Foot fungal cream showed strongest support regarding the physical encroachment impact on both threats, whereas hemorrhoid cream showed stronger support with visual encroachment (see Figure 23 and Figure 24). Social identity theory (Turner et al., 1979; Hogg, 2003; Hogg et al., 1995; Branscombe et al., 1999) also did not suggest a split between encroachments and products as seen. Theory suggested that as a person gets closer to another physically or increases visual contact, categorization and acceptance threat should both go down for both encroachments regardless of product. However, theory was supported with physical encroachment through foot fungal cream data and with visual encroachment through hemorrhoid cream data. When the relationships were significant, the results were consistent with theory (i.e., threats decreased as encroachment increased).

The lack of support for the interaction hypotheses involving physical encroachment and visual encroachment were inconsistent to theory. Reactance theory states that more threats presented at once will result in greater reactance (Brehm, 1966). In addition, social impact theory states that a change in number of influencers from zero to one is a greater change on influence than any other singular addition (Latante, 1981). Both theories suggest an interaction between physical and visual encroachment on the threats, and an interaction was not supported, which is inconsistent with reactance theory and social impact theory.

The legitimacy moderator found mixed results. The moderator tended to work best on physical encroachment's relationship to the threats. While reactance theory states that a legitimate reason will reduce reactance, the theory also inserts a disclaimer by adding that legitimacy will not eliminate reactance (Brehm, 1966). Theory suggests a legitimate reason for

encroachment will lessen reactance; this was only evident for physical encroachment. The significant findings for physical encroachment support reactance theory. The non-significant findings for visual encroachment suggest that legitimacy did not reduce the reactance enough to be significant, suggesting legitimacy is more multi-faceted and complex than theory suggests.

Overall, support for the hypotheses involving physical and visual encroachment had mixed results. Reactance theory suggests that any type of encroachment should have seen reactance in terms of identity threats. These threats have not previously been examined in a shopping context, so differences between products were not anticipated. However, reactance theory additionally states that greater threats will elicit greater reactance (Brehm, 1966), suggesting that the differences of the encroachments across the two products could be due to product differences impacting the importance of each type of encroachment. Gender and age were examined and did not show a difference (discussed further in next section). This suggests differences are not due to these variables. There were several differences of variables in the data that in combination with literature can help explain why such results were evident. Each will be described next.

Demographic Issues

Research suggests that with physical encroachment, gender of both the encroacher and subject can change responses (Altman, 1975; Ahmed, 1979; Ahmed and d'Astour, 2008; Polit and Lafrance, 1977; Rustemli, 1988). The results for this study did not fully support that notion. Gender of the shopper did not show a consistent signficant interaction during analysis for either product. Occassionally a gender interaction was significant within products, indiciating that women responded more strongly than men; however, more often the gender of the participant did not influence responses. This result has also been seen in past research showing that sex of the

invader (Polit and Lafrance, 1977) and invaded (Dean et al., 1976) does not always impact response. Additionally, age of the participant did not play a part in the different findings of results, as the interaction of participant age and other variables was also not significant and age was not a significant variable between products. Research examining age in privacy invasions typically examines the age of the invader and shows that any invader aged 10 or older elicits a similar response to an adult (Dean et al., 1976; Fry and Willis, 1971). Studies do not typically examine differences of the age of the invaded. Therefore, it is not surprising the results did not show a difference in age, as all particpants were over the age of 18. Significant age results might be apparent with a younger sample population.

Product Characteristics

Pretests in study 1 examined products listed as desiring high privacy from participants. Included in this pretest were many emotional characteristics the products might evoke, with embarrassment, anxiety, identification, and expressiveness having the highest means. This suggests high-privacy products cause these identified emotions more so than other emotions like anger. Characteristics of products and the resulting emotions can influence shopping behavior (Menon and Kahn, 2002) and judgments (Dube and Morgan, 1996), which suggests the difference in emotions caused by products could change the response from the shopper. As noted in chapter four, foot fungal cream and hemorrhoid cream were different in terms of anxiety (in study 1), frequency of purchase (studies one and two), and embarrassment (all three studies). There is very little extant literature that discusses these variables in the context of shopping, but literature does relate anxiety, embarrassment, and frequency of purchase to each other.

The spotlight effect was discussed in chapter two and involves over estimating how much people watch you due to anxiety (Gilovich et al., 2002). As hemorrhoid cream creates more

anxiety, shoppers might feel the spotlight effect more than they do with foot fungal cream, causing visual to have significant results with hemorrhoid cream data. The reverse spotlight is an underestimation of being watched and evaluated due to not being as self-conscious (Gilovich et al., 2000). Therefore, when self confidence is increased, anxiety is lower (Speilberger, 1972) and the feeling of being watched is decreased (Gilovich et al., 2000). While self-confidence was not a variable measured in these studies, this logic is in line with foot fungal cream causing less anxiety and not finding significant results with visual encroachment.

It could be argued, those needing foot fungal cream may have more confidence, less anxiety, and less embarrassment as foot fungus can be treated fairly easily and hemorrhoids are typically an ongoing medical issue. Similarly, as foot fungus is spread through physical contact, and not visual contact, physical encroachment may have reduced threat (particularly acceptance threat) for foot fungal cream only as a person's closeness signifies them not rejecting you based on a fungus that spreads through close contact. Different causes for embarrassment can create a difference in the level and reaction to the embarrassment (Grace, 2009). Research has shown that while personal care products are found to be the most embarrassing to shop for (Lau-Gesk and Drolet, 2008), familiarity with a purchase can reduce embarrassment (Dahl et al., 2001). As seen in the first two studies, foot fungal cream is purchased more than hemorrhoid cream and also has less embarrassment associated with it. The different causes for embarrassment and embarrassment levels for the two products could explain why physical and visual encroachment worked differently.

While the frequency of purchase variable was significantly different between the two products, the variable had inconsistent results as a covariate within each product. For study 1, frequency of purchase was marginally significant as a covariate for categorization threat only

when run in an ANCOVA with the other variables. Additionally, including frequency of purchase as a control variable did not change the level of significance of the p-value for either product. The frequency of purchase variable was not significant in study 2 for either threat. In study 3, the variable was only significant in the hemorrhoid cream data for categorization threat. The frequency of purchase variable might explain differences between the products but does less to explain variance within the products.

Open Ended Insights

The first survey in study 1 included an open ended thought listing to gain more insight into the phenomena of interest. Immediately after participants read their scenario, they were asked, "Having read your shopping trip situation, what are the first two thoughts that come to your mind about that experience?" These qualitative responses were then analyzed for trends and patterns. Several topics came up consistently such as encroachment decreasing browsing time, shoppers felt in a hurry if encroached, or shoppers were concerned the product they were purchasing made them look gross. For foot fungal cream, the most frequently mentioned thought listing involved aspects of the employee offering help. Shoppers believed if the employee was within physical distance, he/she should offer assistance or believed that was the reason the employee was looking.

This was not as evident in hemorrhoid cream. With hemorrhoid cream, participants more often stated they believed the employee was within close distance or looking to prevent the shopper from stealing. In study 1, these were not variables collected, but four items (motive, available in Table 8) were included in studies two and three. The items involving assistance did not show significance, but the theft item (An employee was looking at you/ near you for theft purposes) did. For study 2, theft concerns were significantly lower for the foot fungal condition

($mean_{foot}$= 3.87) than for the hemorrhoid cream condition ($mean_{hemorrhoid}$= 4.84, p<.001) when the participant was in a high watched condition (the differences were not significant in the low watched condition as there was no encroachment to give a motive to). When looked at, participants in the hemorrhoid cream believed it was for theft significantly more than those purchasing foot fungal cream. This finding was consistent in study 3 ($mean_{foot}$= 2.57; $mean_{hemorrhoid}$=4.09. p<.001) and is consistent with hemorrhoid cream being more embarrassing and shoppers being known to steal embarrassing items (Staff, 2012; Redfeam, 2006).

In studies two and three, when physical encroachment was high, participants did not see a difference in motive (theft or assistance) for either product. When the employee was close to the shopper, there was not a difference between foot fungal and hemorrhoid cream as to why the shopper believed the employee to be close.

This finding is another reason physical and visual encroachment might have worked differently across products, but it is also helpful in explaining why the legitimacy of threat tended to work only on physical encroachment. It seems a significant amount more of shoppers already believe that an employee visually encroaches for theft purposes. As participants have given a motive to encroachment, it may have impacted the ability to see legitimacy's impact as a moderator on visual encroachment.

Participants also frequently mentioned that if an employee is there, they should acknowledge the shopper or see if the shopper needs assistance. Often, participants viewed it as rude for the employee to be there but not acknowledge the shopper. As visual contact is seen as more concrete and acknowledging than physical presence (Winner, 2007), this too could account for differences between the encroachment and the lack of impact of legitimacy on visual. Shoppers believed visual encroachment from an employee was acknowledgement and again

assigned a reason for the visual encroachment that caused legitimacy to not be significant for relationships involving visual encroachment.

From Threats to Intentions

The back end of the model from threats to the behavioral intentions was strongly supported. Reactance theory states that a threat to behavior will result in reactance and the greater a threat, the greater the reactance (Brehm, 1966). Purchase pressure is an increase in feelings to buy a certain product or to buy a particular brand (Warshaw, 1980). According to reactance theory, as threats increase, so should reactance (Brehm, 1966). This was shown in the results as a person felt more categorization threat, they also felt an increased pressure to buy. Likewise, as the shopper felt more acceptance threat, they similarly felt an increase in purchase pressure as reaction to the threat. This was seen across all three studies with H4a and H4b, supporting theory.

The theory of psychological reactance states that reactance is directed in attempts to reduce the loss of and reclaim threatened behavior. According to reactance theory, behavioral freedoms are equivalent to control (Brehm, 1966). Once behavior is threatened, a person will realize the threat to behavior and their loss of control. As purchase pressure constrains behavior, it will be followed by feelings of loss of control. This too was supported by H8 in study 3, showing that purchase pressure has a negative relationship to feelings of control.

As stated above, as a person realizes a threat to behavior, reactance will occur. Reactance theory says feelings of control and behavior are interchangeable and threats to either will cause reactance. As shoppers realize lost feelings of control, they will react in ways to regain control and privacy (Brehm, 1966). The pilot qualitative study (discussed in chapter 2. The study was conducted simultaneously with the literature review to focus the hypotheses) and literature

suggested that shoppers would react with increased abandonment and smaller purchase intentions. Abandoning the area will help the shopper regain elements of privacy and feel in control of the situation again. This includes a permanent abandonment of the store or a temporary abandonment of the shopping area. A person may leave an area with the intent to return later when privacy is at an adequate level. A shopper may also chose to permanently abandon the shopping area without making a purchase, which will be reflected in purchase intentions. The greater the threat and loss of control, the greater the reactance will be in the form of these outcomes as seen supported in study 3.

Implications

Theoretical

The findings of this research add to the understanding of interaction privacy. Privacy encroachments have not been broken down before to examine the impact of different invasions. While social identity theory (Turner et al., 1979; Hogg, 2003; Hogg et al., 1995; Branscombe et al., 1999) did not suggest a difference, the findings show that products that are more embarrassing and cause anxiety may cause stronger reactions to visual encroachments, while products that are less embarrassing and are purchased more frequently may cause stronger reactions to physical encroachments. Additionally, previous research does not typically account for a different privacy invasion while examining another, and the results show they do not interact for shopping situations. The theories used suggested a significant change in visual encroachment when physical encroachment was low but not when physical encroachment was high. However, the significance of only one encroachment at a time and the non-significance of the interaction suggests the encroachments worked separately from each other in this study.

While psychology literature discusses the definitions of privacy and the functions and mechanisms to achieving privacy, this literature leaves out the mediating variables between the threat of privacy and the consequential reactions in a retail setting. This research points out that encroachments to privacy lead to constraints to behavior, a first step in understanding interaction privacy's influence to a retailer.

Further, very few quantitative studies test a full model of reactance theory examining mediating mechanisms and feelings of control. Most research that uses reactance theory simply examines the threat and reaction, not underlying causes or the importance of loss of control. The examination of the theoretical model as a whole further contributes to reactance theory (Brehm, 1966; Brehm, 1993; Brehm and Brehm, 1981) and the relationship between variables discussed in theory. The variables show that as threats go down, purchase pressure also decreases. The realized threats cause a change in emotional reactance. This is when the model impacts feelings of control. As a person emotionally reacts to threats, they realize their ability to control the situation has changed. The more purchase pressure a shopper feels, the less in control they believe they are. Models before have not added this element of control, and it is an important contribution to reactance theory to show that control can act as a separate variable from threats to behavior and sequentially comes after realized emotional reactance. Feelings of control then lead to behavioral reactance through abandonment and purchase intentions. Specifically, this model breaks down reactance theory to show realized emotional reactions that precede visible behavioral actions.

Lastly, research does not examine under which contexts privacy is more important. According to reactance theory, a justified reason for a threat to freedom will cause less reactance. This suggests a different impact from legitimate encroachments on categorization and acceptance

threat, as each has different reasons for causing the freedom constraints. However, the moderator of legitimacy did not find consistent results. Overall, only physical encroachment saw partial support while little support was found for visual encroachment. Thought listings and data seemed to suggest that shoppers had already assumed visual encroachment was due to theft prevention, which could possibly have caused the moderator to not be effective on visual encroachment's relationship to the threats. Also, many participants stated that just because an employee had the right to encroach on them, didn't mean they should. This adds boundary conditions to reactance theory, showing that there is more to the legitimacy of threat than the inclusion of a justifiable reason. The recipient of the invasion has to agree with appropriateness, splitting legitimacy into two aspects: having a justifiable reason and accommodating societal norms. The findings from the moderator add to the field's understanding of legitimacy as it impacts reactance theory.

Managerial

Findings of this study help a retailer better understand an employee's impact on purchase pressure and social identity threat, leading to the consideration to add training that will help ensure the optimal amount of interaction privacy to shoppers. A legitimate threat to privacy should reduce reactance, but this was only evident through physical encroachment.

What variables were not significant in this research have implications too. Prior research on gender was split with some research (Altman, 1975; Ahmed, 1979; Ahmed and d'Astour, 2008; Polit and Lafrance, 1977; Rustemli, 1988) suggesting gender was a significant variable while other research (Dean et al., 1976; Polit and Lafrance, 1977) showed it was not. The three studies conducted for this dissertation showed that gender (of the encroacher or of the invader) did not make a significant difference on felt threats. This research suggests that managers should not be as concerned about the gender of their employees in relation to the gender of the shopper

whose privacy they may be encroaching upon. Similarly, age was not a relevant variable in the relationships between encroachment and threat, although all participants were over the age of 18.

This research will hopefully raise awareness with managers that interaction privacy does have implications for the store and that a shopper needs to be able to control the levels of interaction from an employee to reduce threat. Shoppers want an employee to acknowledge them if they are in close proximity, and these encroachments reduce categorization and acceptance threat felt by the shopper. Having adequate levels of interaction privacy adds to the shopper's feelings of control which reduces negative impacts to the store.

Additionally, as technology is helping retailers invade a shopper's privacy even more, awareness of shopper privacy concerns and impact could be very beneficial to practitioners and avoid bad publicity (CBS, 2011) or even lawsuits regarding privacy violations (e.g., Troianovski, 2012). Further, to increase customer satisfaction and the shopping experience, managers being aware of and understanding interaction privacy will offer ways of allowing consumers the ability to control who and the amount of interaction they encounter while shopping to meet privacy needs.

Results from the data show that not all privacy products have similar responses from shoppers to privacy invasions. Foot fungal cream and hemorrhoid cream are both personal care products, but they reacted differently to physical and visual encroachment. Foot fungal cream was purchased more frequently, and threats were reduced with only physical encroachment. Hemorrhoid cream was found to be more embarrassing and cause anxiety. Threats were reduced for hemorrhoid cream shoppers with visual encroachment. The legitimacy moderator only worked with physical encroachment as shoppers had already given a motive to visual encroachment. These findings suggest that there is not a one-method strategy for dealing with

shopper privacy. Managers have to understand what emotions the product is causing to adequately train employees to give optimal levels of privacy and allow the shopper to have control over interaction privacy.

As previously noted in the discussion, the embarrassment measured in the scenarios came from the products and not the encroachment. The type of encroachment appropriate to acknowledge shoppers is different depending upon the emotions triggered by products. For personal products that are purchased more frequently, an employee physically encroaching the shopper helps to reduce threats without any added benefit from visual encroachment presumably because the shopper is more familiar with the purchase and feels less embarrassment. For personal products that are more embarrassing and cause anxiety, visual encroachment without physical closeness is enough to reduce threats. This difference could be due to physical presence being less concrete in terms of communicative intent than visual contact (Winner, 2007). Shoppers who are more familiar with a purchase and less embarrassed can feel less threat with a less concrete encroachment, while shoppers who are unfamiliar with a purchase and embarrassed need visual encroachment as it is more concrete. While an interaction did not exist between the two variables, further research is needed on other types of threats and privacy encroachments to fully understand the impact of multiple invasions to privacy.

As control is a variable between the identity threats and reactance, understanding that the loss of control is an antecedent to behavioral reactance suggests that finding different ways to give control back to shoppers will reduce the reactance outcomes of abandonment and purchase intentions. Even if privacy is invaded in a negative way and the shopper does not feel he/she has optimal levels, the store can give control back before negative behavioral actions are seen. For example, Kroger will give the key to shoppers that accesses locked cases containing pregnancy

tests if asked rather than only giving employees access. Some stores have installed "push for service" buttons that give a certain amount of control back to the shopper regarding how their privacy is encroached. Employees can give shoppers privacy, but the shopper feels in control of interactions that take place in the store as they can push for service if they desire it (or not). Self service technology (SST) such as vending machines or self-checkouts could give control back to the shopper as well. The shopper can seek out employee assistance if desired or has the option to avoid interaction all together. Such tactics as these service buttons or SST give shoppers more control over their interaction privacy while shopping in the store and could reduce negative outcomes to the retailer. Shopping baskets/carts that are more enclosed or have a cover could also give shoppers the option of having their purchases seen or not, which is another way to add feelings of control to the shopper. Even if encroachments have a negative impact on feelings of control, stores can find other ways to give control back to the shopper to counterbalance the impact.

Stores could also change layout designs and product placements to change how privacy encroachments occur in the store and how much control shoppers have over them. For example, a product placed at the end of an aisle may be more visually open, leaving a shopper vulnerable to visual encroachment, but the placement is also more physically open, giving the shopper more space free from physical encroachment. Conversely, a product in an aisle is both more visually and physically restrictive. Determining what type of products react more strongly to physical or visual encroachment would help managers understand where to place them to give shoppers optimal levels of interaction privacy.

Limitations and Future Research

As with any study, this research is not without its limitations and opportunities for future research. The data collection used an online consumer panel. While this offered a wide variety of participant demographics, other means of gathering a sample would be beneficial to examine if results stay consistent. Similarly, the method included all experimental scenarios. While the inclusion of a video scenario for study 3 increased the realism in the scenario, a different methodological approach would give different insights and support to the model. As the survey was a hypothetical scenario, the final dependent variables (abandonment and purchase intentions) were intentional and not actual. A field study would be a different approach that would give actual results strengthening the findings of these studies. Lastly, as shown by the separated product findings, this model is only a piece of the bigger model involving privacy while shopping. There are associated variables that were not included in this model that may have helped explain encroachment's relationship to identity threats, such as self confidence and dominance.

As these limitations exist, there are many opportunities for future research to address them as well as other opportunities for further examination. As noted above, future research could use a different sample and add other variables such as dominance or self-confidence for a different view on the impact of interaction privacy. Future research could also be conducted in different methods, such as a field experiment or in-store observation to record actual behavior. While these methods offer less control over variables, they do give a more realistic situation and allow for dependent variables that are more than intentions.

The results showed a different pattern of encroachment's impact on the two products (foot fungal cream and hemorrhoid cream). Future research should examine product differences more

closely. The products used in this research varied on aspects of embarrassment, anxiety, and frequency of purchase. Other high privacy products (e.g., condoms and tampons, although these also differ on gender and age variables according to the pretest) should be examined for similarities and differences on emotional aspects to further investigate what constitutes a high privacy product. These products can then be tested in privacy models to see the differing effects encroachment has on the differing degrees of privacy-products. Conversely, non-privacy products should be tested to examine how to the model holds when embarrassment and anxiety are not created by the product. According to reactance theory (Brehm, 1966), the model should still hold regardless of the product. However, as both encroachments did not impact identity threats across products, future research should examine highly-private and not-private products alike.

The scenarios in all three studies specified that the encroacher of privacy was a store employee. It was assumed the felt identity threat was coming from the employee listed in the scenario, but future research could examine more specifically the source of threat (e.g., store, employee, or another shopper). While legitimacy of threat in the scenarios was limited to the employee, another shopper could also impact privacy. Participants in qualitative interviews mentioned who (customer versus employee) is encroaching upon their privacy makes a difference. When asked how important privacy is while shopping on a scale of 1-10, participants rated it fairly high. However, employees and other shoppers were distinguished from each other as having differing levels of expected privacy (most shoppers expect more privacy from other customers). Shoppers expect more privacy from customers possibly as they have less reason to interact with each other or see each others' purchases. An employee may be seen as providing a service in the store, and part of that job is encroaching upon privacy a little more than other

shoppers should. This means when another customer encroaches on their privacy, the person will react more strongly than when an employee encroaches in some way. Reactance theory can help explain the difference between customer and employee invasions of privacy as reactance can be reduced if a legitimate reason justifies the threatening of a behavior (Devine, 1989). Future research should examine how privacy encroachments differ coming from an employee versus another shopper.

Crowding can also impact privacy. According to social impact theory (Latante, 1981), the number of sources and targets can change how influence is perceived. Both employees and shoppers can be seen as influencers to a purchase, and an increase in one or both will change how privacy encroachment affects the proposed mechanisms. For example, a one-on-one encounter with an employee may cause a shopper to feel a certain amount of purchase pressure. As more shoppers are added to the situation, the one employee has less influence on any one shopper since the influence is dispersed amongst the crowd. While crowding was examined as a control variable in study 3, future research should examine control more closely, perhaps as a moderator to encroachments' relationship to threats.

While stores cannot control other shoppers, layout can make a difference in a person's perceptions of interaction privacy. Environmental factors such as location and layout impact the amount of interactions with others and a person's control over interactions (Turner et al., 2006). Forced encroachment from defensive merchandising (e.g., a locked case or item behind the counter) as well as off the shelf products will further limit free behavior and cause greater reactance and need for a shopper to regain privacy. Location of products can change a shopper's perceptions of interaction privacy as they will feel more isolated in an aisle as opposed to the end of it, for example. The extent of an exposure a shopper feels varies along this moderator. At the

end of an aisle, a shopper has free movement but is more visibly exposed than if they were in an aisle. Therefore, limited access and extent of exposure are two additional moderators that should be examined in future research.

Other variables can be added to the model, such as the examination of other threats. This study used categorization and acceptance threat, both of which have negative relationships to encroachment. As a person gets closer or increases visual contact, the identity threats decrease and purchase pressure goes down, leading to less intentions of abandonment and greater purchase intentions. Emotions and threats unrelated to identity that have positive responses to encroachment (e.g., possibly discomfort, annoyance, or safety) should be examined.

Many aspects of privacy have been placed into hierarchies. Information privacy has been defined as a "hierarchy of levels of concern associated with various dimensions" (Milberg, Burke, Smith, and Kallman, 1995). This suggests that within information privacy there are different ways in which privacy can be invaded and that these are placed in a hierarchy. The practice of law (particularly evident in Canada) has defined a hierarchy of the privacy types with personal/body privacy being the most important, followed by territorial privacy of a person's home space, and the least important being informational privacy (Kerr, Max, and Aoki, 2008). While not identified in literature, it would be plausible that a hierarchy of invasions to interaction privacy exists such that certain ways to invade privacy are more impactful than others. Winner (2007) outlined steps in communication (i.e., thinking, physical, visual, verbal) that could be the framework for a hierarchy of privacy encroachments. Future research should first confirm a hierarchy to determine which ways to invade privacy are more impactful. As the use of space is a nonverbal communication of acceptance (Stillman, 1978), the steps in communication could frame how a privacy hierarchy might work. Winner points out that a physical presence is less

concrete in terms of communicative intent than visual contact. Therefore, visual contact may be more impactful as it is a more purposeful encroachment than physical (Winner, 2007).

Second, future research should then test these different methods of encroachment in a shopping context to assess the impact on shoppers and reactance. While not tested in this study, verbal encroachment may have been a beneficial comparison with physical and visual encroachments. The privacy hierarchy may work in such a way that as embarrassment increases with a product purchase, privacy encroachments must also increase to see impacts on categorization and acceptance threat. For example, as foot fungal cream was less embarrassing, physical encroachment may have been all that was necessary to see a decrease in threat. However, as hemorrhoid cream was more embarrassing, the encroachment needed to decrease threat had to move up the hierarchy to visual encroachment. In this framework, the most embarrassing products would need verbal communication to decrease threat.

Lastly, future research could examine different contexts and shopping stages of privacy encroachment. The scenarios focused on encroachment during the browsing stage of a shopping trip in a retail store. Future research could examine privacy during different parts of the shopping trip, such as after product selection, during waiting lines, or during checkout. The pilot qualitative interviews suggested that the waiting line and checkout portion of a shopping trip were prone to reactions from privacy encroachment. Similarly, contexts could include how privacy differs during the checkout process when self service technology (SST) is included, such as the impact of self-checkout, vending machines, or drive thrus.

Conclusion

Ultimately, in-store shopping privacy is a topic mostly untouched in marketing literature. This study is a first step in understanding what interaction privacy means to shoppers, what

functions privacy serves, and how it impacts retailers. The data show how employees can impact a shopper through privacy encroachment, ultimately impacting the retailer through abandonment and purchase intentions. Consumer privacy is involved in customer relationship management as well as enhancing shopping encounters (Burgoon, 1982). While much work is still to be done regarding interaction privacy and shopping, the findings here help to fill a gap showing how interaction privacy is a needed element in adding to the positive aspects of the shopping experience, an area of research the marketing discipline has called for (Achrol and Kotler, 2012; Deighton et al., 2012; Lanier and Saini, 2008).

The results show that a relationship does exist between privacy and store outcomes, but the results were not fully what was to be expected according to theory. Many other variables are necessary in a model to fully understand privacy while shopping. There are different reactions to encroachment seemingly based on anxiety, embarrassment, and frequency of purchase. Additionally, different motives are already assigned to encroachments (e.g., visual encroachment being due to theft prevention) that can explain the impact of legitimacy on encroachment. Finally, the results show a more detailed model of reactance theory including the involvement of feelings of control regarding reactance to interaction privacy threats. This study ultimately provides a base from which future research can expand upon to create a more holistic model of interaction privacy.

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