11-22-2016

Affective and Deliberative Processes in Decision Making: Option Framed Scenarios

Charles E. Drehmer
DePaul University, cdrehmer@depaul.edu

Affective and Deliberative Processes in Decision Making:

Option Framed Scenarios

A Thesis

Presented in

Partial Fulfillment of the

Requirements for the Degree of

Master of Arts

By

Charles Edward Drehmer

DePaul University

August 11, 2016

Department of Psychology

College of Science and Health

DePaul University

Chicago, Illinois

Thesis Committee

Joseph A. Mikels, Ph.D., Chairperson

Kimberly A. Quinn, Ph.D.

Acknowledgments

I would like to express my sincere appreciation to my thesis chair Joseph A. Mikels and committee member Kimberly A. Quinn for their support and encouragement throughout this project. I would also like to thank my wife Laura, son Henry, and parents Marybeth and David who have been a constant source of support and strength. I would not be where I am today without you.

Biography

Charles Edward Drehmer was born in Chicago, Illinois, November 30, 1980. He graduated from Hinsdale Central High School, received his Bachelor of Science from DePaul University in 2003, and a Master in Business Administration from the same university in 2004.

Table of Contents

List of Tables

Abstract

As the internet becomes more widely used as a marketplace, consumers are increasingly faced with scenarios where they have to customize products by adding features to a base model or delete features from a fully loaded model, a phenomenon known as option framing. People can now customize their vacations, pizzas, personal computers, shoes and cars with the click of a mouse. Recent research has shown consumers will end up with more features and spend more money when they have to remove features from a fully loaded model versus adding features to a base model (Biswas, 2009; Park & Kim, 2012). Emotion may impact these decision processes. People typically use two modes of information processing: fast and intuitive or deliberate and analytical. Past research has shown positive and neutral emotions can lead people to use a fast and intuitive information processing mode while negative emotions can lead people to use a deliberate and analytical approach (Howard & Barry, 1994; Park & Banji, 2000; Samson & Voyer, 2012; Schwarz, 2013; Schwarz & Bless, 1991). This study investigated how the specific emotions of amusement and sadness impact decisions in an option framing scenario of purchasing a car. Participants were induced with either an amusement or sadness emotion by watching a film clip and then added features to a base model car or removed features from a fully loaded car. The results confirmed past findings in that people spent more money and chose more features when presented with a fully loaded model versus a base model. Emotion did not have an effect in the final product configuration.

Affective and Deliberative Processes in Decision Making:

Option Framed Scenarios

What was the last customizable product you bought? How did you decide on which features to include and which to exclude? Did the default or starting configuration influence your decision? Did you consider whether your emotional state had an impact on your final choices?

This paper will explore how decisions are impacted by the manner in which product features are displayed. More specifically, will there be a difference in the consumers' final selection of features when the default has all the features selected and they have to remove features, versus a base model with no features selected and features need to be added? This paradigm is known as option framing. The presence of emotional states (amusement or sadness) will also be explored to see if they moderate the decision making process in option framing.

Consider the scenario of buying a personal computer from Dell. Many people will purchase online rather than in brick and mortar stores. Once someone is on Dell's website, they needed to "build" their computer from a blank slate by choosing product features such as processor speed, operating system, memory, hard drive size, video card, monitor size, DVD/ CD drive, etc. The majority of people think that their computing needs and preferences were the driving force behind their ultimate purchase. They rarely considered that the particular default options presented on the website would shape their decisions and final product configuration. Option framing research (Biswas, 2009; Cheng, Yen, Shih-Chieh, & Chia-Jung, 2013; Herrmann, Hildebrand, Sprott, &

Spangenberg, 2013; Levin, Schreiber, Lauriola, & Gaeth, 2002; Park, Jun, & MacInnis, 2000, Park & Kim, 2012) has shown that a person's ultimate decision of product features included and amount of money spent can be quite different depending on whether a product is presented with a fully configured system and the opportunity to reconfigure it by eliminating options or with a bare-bones system with the ability to add options.

Additionally, one's emotional state may influence how decisions are made. Under the umbrella of dual process theory (Chaiken & Trope, 1999; Epstein, 1991; Kahneman, 2003; Petty, Cacioppo, Kao, & Rodriguez, 1986), for example, it is believed that when someone feels good, amused or generally positive, they may be more likely to make decisions by a heuristic automatic process. When someone is feeling sad, they may tend to become quite analytical and careful about making decisions (King, Burton, Hicks, & Drigotas, 2007; Krauss, Lieberman, & Olson, 2004; Samson & Voyer, 2012).

Theoretical Framework

Decision making in its most elementary form is about making choices. It is essential to understand how people choose and make decisions for those who attempt to influence the choice process. This investigation provides an opportunity to extend the understanding of two aspects of decision making, namely, how the framing of options in a choice situation influences the decision that people make and how emotions influence this decision making process. Does it make a difference if a person starts with a bare-bones product and adds necessary and desired features to it in the process of customization when

compared to the alternative of stripping down a complete fully-featured product? Does a person's emotional state moderate the effects of the default product configuration?

The science of decision making is not new. Early theorists postulated that people are rational beings and will make decisions that are optimal (Becker, 1976; Von Neumann & Morgenstern, 1944). Driven by the field of economics, these points of view have become known as Becker's rational choice theory and Von Neumann and Morgenstern's expected utility model. The main tenet of these theories is that people will weigh all the costs, benefits and alternatives and then make the decision to maximize their benefit. Unfortunately, Becker's rational choice theory did not adequately explain many anomalies in the expected outcomes of his experiments. Many researchers have refuted that decisions are always rational or optimal (Kahneman & Tversky, 1979; Levin, Schneider, & Gaeth, 1998). Some have shown that situational factors and cognitive biases influence the way people think, act, and feel and ultimately the decision made (Blumenthal-Barby & Krieger, 2015; Frederick, Lowenstein, & O'Donoghue, 2002; Furl, Gallagher, & Averbeck, 2012; Luini, & Marucci, 2015).

Framing and decision making. Kahneman and Tversky (1979) proposed several alternatives to the rational choice and expected utility theories. One of those alternatives is prospect theory, which proposes that the way in which a situation is framed can impact the decision. People will pay more attention to losses than gains. Kahneman and Tversky argue that if a loss is the same size as an equal gain, the loss will be more painful than the gain is pleasurable. In other

words, there is an asymmetry of psychological impact around a neutral point for gains and losses.

Tversky and Kahneman's (1981) Asian Disease Problem illustrates prospect theory in a risky choice framing context. Participants had to choose a treatment for 600 people to a hypothetical unusual Asian disease outbreak in the United States. Half of the participants chose between options in which 200 people would be saved (A1) or a one-third chance that 600 people would be saved and two-thirds chance no people would be saved (A2). The other half of participants had to choose between two options in which either 400 people would die (B1) or a one-third chance that nobody would die and two-thirds chance 600 would die (B2).

Choices A1 and B1 are equivalent and A2 and B2 are equivalent. When given the options in choice set A, the vast majority of participants chose A1, but when given the B options, the clear majority of people chose B2. Participants were risk averse when the problem was framed in terms of people being saved, but risk seeking when the problem was framed in terms of people dying. In other words, when the loss was salient, people would risk more to avoid the sure loss.

Another framing paradigm is goal framing, and is also built on the principles of loss aversion. Goal framing persuades a person to participate in a certain activity, for example, exercising more (Levin et al., 1998). The goal frame either highlights the benefits of engaging in the activity or the disadvantages of not engaging in the activity. The majority of research has shown that highlighting the disadvantages in a loss frame is more effective to move people to the desired

action (Block & Keller, 1995; Levin et al., 1998; Meyerowitz & Chaiken, 1987). For example, Ganzach and Karsahi (1995) showed that consumers were more receptive to the disadvantages of not using a credit card than to the gains of using a credit card. Some studies have shown boundary conditions exist and the loss frame may not be as effective in certain populations. Shamaskin, Mikels, and Reed (2010), for example, demonstrated that older adults show a positivity effect and respond better to a gain framed message than loss framed message in the context of health messages. The present study will use a college-aged population as participants.

Much of the goal framing literature is in the health choice domain, but a growing body of studies has investigated goal framing in a consumer decision context (Levin et al., 1998). These studies use the principles of loss aversion to explain the power of possession and why we place more value on objects we already own compared to when we do not own them. This phenomenon has been labelled the endowment effect. The endowment effect demonstrates that a gap exists between the value placed on an object a person owns when compared to the cost to acquire the same object.

The framing paradigm for the present study is option framing. Option framing helps explain the influences default feature configurations have on consumer decisions. Like risky choice and goal framing, option framing is built on the principles of loss aversion and the endowment effect with the addition of anchoring effects. Anchoring effects refer to the adjustment in a person's judgment based upon information presented previously (McElroy & Dowd,

2007). Option framing will be a central thesis in this paper. Typically, when consumers are able to customize a product, they are faced with one of two defaults when beginning to choose features: a stripped down base model where they add features, or a fully loaded model, with all the bells and whistles, where they remove features to come up with their final product configuration. These two different scenarios are known as option framing (Biswas, 2009; Herrmann et al., 2013; Levin et al., 2002; Park et al., 2000, Park & Kim, 2012).

The ability to uniquely configure a product by choosing features is becoming more prevalent across many different product and service categories. Customers now expect to be able to customize products by choosing features that will meet their needs and desires without paying for features they deem unnecessary. This leads consumers to believe that they are getting a better value and are more satisfied (Dellaert & Stremersch, 2004). It is necessary for companies to offer product customization in order to stay competitive, especially as online shopping becomes an increasingly larger channel for commerce.

Option framing is often seen, but not limited to, internet purchases. Some industries that use option framing are personal computers (e.g., Dell and Hewlett Packard), pizza (e.g., Domino's Pizza), car manufacturers (e.g., Ford and Toyota) and tourism (e.g., Expedia and Travelocity).

Option framing has been explained by three related lines of research: anchoring, loss aversion and the endowment effect (Jin, He, & Song, 2012). Kahneman and Tversky (1979) demonstrated people do not make decisions in a vacuum. They use reference points as an anchor and will adjust their decision

relative to where the anchor is. This bias towards the anchor is defined as anchoring effects (Kahneman, 2003). Consumer research has shown the default position or manner in which a product is displayed (e.g., a limit of 12 per customer or five cans for $10) can cause anchoring effects, influencing purchase quantities and amount of money spent (Samson & Voyer, 2012; Wansink, Kent, & Hoch, 1998).

Option framing utilizes anchoring effects by offering a consumer one of two drastically different anchors, a product with every feature available included as the default or the same product with no features included as the default. Past option framing studies have shown when someone starts in a fully loaded condition and removes features, they will end up with more features and spend more money than when starting with a base model and adding features (Biswas, 2009; Biswas & Grau, 2008; Hilderbrand, Haubl, & Herrmann, 2014; Jin et al., 2012; Levin et al., 2002).

Option framing uses the principle of loss aversion and builds upon anchoring effect findings. Loss aversion has shown that losses are more salient and loom larger than gains (Kahneman & Tversky, 1979; Thaler, 1985). People fear losses more than they anticipate gains from their particular anchor point. In a base model condition, where consumers need to add features, the anchor is the cheapest. The monetary loss carries more weight than the gain in product utility. In the fully loaded model, the reference point is the most expensive. In this condition the monetary gain of removing features is relatively low compared to the loss of product utility. Hardie, Johnson, and Fader (1993) demonstrated loss

aversion for product utility was greater than the loss aversion of money when consumers were more sensitive to a loss in orange juice quality than a loss in the amount paid.

Additionally, the endowment effect suggests people value things they already own more than the cost to acquire the exact same item (Thaler, 1980). Once we own something or have a sense of ownership, it is very difficult to give it up. Lowenstein and Issacharoff (1994); Kahneman, Knetsch, and Thaler (1990) demonstrated the endowment effect in experiments where a coffee mug was worth significantly more to an owner than to a non-owner, even though ownership was randomly assigned. In an online shopping situation, the consumer will have a sense of ownership when they see the item(s) in their virtual shopping cart, even before they purchase the item(s), thus creating a pseudo endowment effect (Ariely & Simonson, 2003; Carmon, Wertenbroch, & Zeelenberg, 2003; Peck & Shu 2009). In an option frame scenario, when a consumer is faced with the default of all the product features included, they have a sense of ownership of these features. The value of these features is much higher in this condition than in the add frame where none of the features are chosen as the default.

Emotion and decision making. In addition to the option frame a person sees, their emotional state can influence the ultimate decision and product configuration. A person's affective state can lead them to either a quick and spontaneous or more deliberate decision processing mode (Samson & Voyer, 2012). Imagine someone is shopping for a car: Do they do a cost–benefit

analysis of every feature available or do they see the suggested default and say "that looks great, where do I sign?"?

Such decision processes can be analyzed using a dual-process decision model. There have been many similar dual-process models developed over the past 30 years that use slightly different terminology to describe the two information processing modes. The first mode, that is effortless, fast, emotion driven, has been labeled peripheral (Petty et al., 1986), heuristic (Chaiken & Trope, 1999), system 1 (Kahneman, 2003) and experiential (Epstein, 1991). The second mode is deliberate, analytical, slow and rules based and has been coined central (Petty et al., 1986), systematic (Chaiken & Trope, 1999), system 2 (Kahneman, 2003) and rational (Epstein, 1991). Of these various theories and perspective, this study will focus on Epstein's Cognitive Experiential Self Theory (CEST; see Epstein, 1994) for two reasons. First, CEST has a clear division between the two information processing systems: experiential and rational (Mikels, Cheung, Cone, & Gilovich, 2013; Slovic Finucane, Peters, & MacGregor, 2002). Second, the only other study investigating option framing in conjunction with dual process theory uses CEST (Biswas, 2009).

Emotion can influence which information processing mode (e.g., experiential or rational) a person will likely use. When someone experiences a particular emotion, it activates an information processing strategy that is familiar and congruent to that emotion (Adaval, 2003). Generally, positive emotions lead people to believe there is no threat present, which undermines their motivation to expend the cognitive effort necessary to scrutinize the situation or closely analyze

the details of a message (Howard & Barry, 1994; Samson & Voyer, 2012; Schwarz, 2013; Schwarz & Bless, 1991). The reliance on experiential information processing, under positive emotional conditions, is viewed as adaptive because it leaves a greater number of cognitive resources available if a threat should present itself (Adaval, 2003; Bless et al., 1996). Conversely, negative emotions serve as an alarm that something is wrong or needs more deliberation to find a solution, triggering the rational information processing mode (Park & Banji, 2000; Schwarz, 2013). A person will be more deliberate and analytical, using more cognitive resources, to minimize and avoid the unpleasant feelings associated with the negative affect (Adaval, 2003).

King et al. (2007) demonstrated that positive affect leads a person to use experiential processing, believing everything is okay and that the present situation does not call for deliberate and effortful evaluation of what is going on. Participants were more likely to believe in paranormal activity, UFOs and sympathetic magic when induced with a positive emotion than if induced with a neutral emotion. Similarly, Krauss et al. (2004) demonstrated the impact of experiential versus rational processing mode in the decisions a jury member would make in a capital murder trial. When the juror was directed to use an experiential processing mode, they were much more likely to use the opinion of a clinical expert rather than more scientific actuarial testimony. Jurors who were induced to use a rational decision processing mode showed the opposite result putting much more weight on the more scientific actuarial testimony than that of less scientific clinical testimony.

Additionally, Au, Chan, Wang and Vertinsky (2003) and Grable and Roszkowski (2008) showed that people making financial decisions experiencing negative emotions are more accurate in their choices than other people who are experiencing positive emotions. This was true of both professionals in the financial industry and people making personal investment decisions. Yuen and Lee (2003) showed similar effects with patients in negative moods taking less risky medical options than patients in positive moods. Further evidence supporting negative emotions leading people to a rational information processing mode comes from Storbeck and Clore (2005). Participants who were primed with a negative emotion were better at a word recall task, including fewer false memories, than participants who were induced to feel a positive emotion. Elsbach and Barr (1999) also demonstrated that negative emotions guide people to use a rational information processing mode. These individuals experiencing negative affect were more likely to complete a complex task more accurately, completely and not based on gut feelings. Negative emotions drive people to process information more carefully and deliberately taking less risk than people who are experiencing positive emotions (Au et al., 2003; Kim & Kanfer, 2009).

In a consumer behavior context, positive emotions have been shown to increase purchase quantity as well as the perceived value of, spending on, consumption of, and positive feelings about products (Strack, Werth, & Deutsch, 2006). This holds true even when the emotion is primed subliminally and not related to the product, or primed supraliminally, where the consumer is aware of the prime but not the prime's connection to the product or purchase task (Bargh,

2002; Samson & Voyer, 2012). Brendl, Chattopadhyay, Pelham, and Carvallo (2005) demonstrated that positive affect, generated by seeing a product that started with the same letter as one's own name, led to a greater likelihood of purchasing the product and higher levels of consumption than when the product did not start with the same letter as their own name. Winkelman, Berridge, and Wilbarger (2005) showed similar effects of positive emotions by subliminally priming participants with happy or sad faces: The participants primed with the happy faces poured and consumed more of a beverage, and were willing to pay more for it, than those primed with the sad face. Similarly, mimicry has been shown to induce positive affect and lead to buying behavior and increased spending (Chartland & Bargh, 1999; Strack et al., 2006; Van Barren, Holland, Steenaert, & Van Knippenberg, 2003).

Rationale

The current study contributes to the decision making, consumer behavior and emotion literature by exploring how the specific emotions of amusement and sadness impact purchase decisions in option frame scenarios. Previous research has explored the impact of emotion on decision making, but no study has looked specifically at how amusement and sadness emotions moderate decisions in option framing.

In a conceptually similar study to the present one, Biswas (2009) investigated option framing through a dual process model, but did not incorporate an emotional manipulation. He instructed participants to choose car features using either a logical or emotional decision making mode. Biswas showed that

when an emotional decision making mode, versus a rational and logic-based mode was used, option framing effects were magnified. In other words, participants using an emotional mindset were closer to their anchor starting points than people using a logic based mindset. Biswas suggested the results of a manipulation check, a cognitive efforts scale from Menon, Block and Ramanathan (2002), indicate participants used an experiential information processing mode in the emotional decision making request condition and a rational information processing mode in the request to use logic condition. The present study extends Biswas' work by investigating the link between priming specific emotions (e.g., amusement and sadness) and information processing in the context of an option framing.

The research reported in this paper aims to distinguish itself by using an emotion manipulation to induce the specific emotions of amusement or sadness. Gross and Levenson (1995) and Westermann, Stahl, and Hesse (1996) demonstrated that film clips are an effective and reliable way to induce emotion because they are easily standardized and are ecological valid in that they evoke dynamic visual and auditory external stimuli.

In the current study, participants were induced to feel a sad, neutral, or amusement emotion by watching a film clip, before choosing car features as if they were purchasing a new car for themselves. Participants started with one of two default car configurations, one where they removed features from fully loaded car, or where they added features to a stripped down car with no features selected. It was expected that participants would use an experiential information

processing mode when primed by an amusing film clip and use a rational information processing mode when primed by a sad film clip.

Statement of Hypotheses

Hypothesis I: The reported level of amusement on the Modified Differential Emotion Scale (mDES) will be greater in the amusement emotion induction condition than in the sadness and neutral emotion induction conditions. This item was used exclusively to verify that the amusement emotional manipulation was present.

Hypothesis II: The reported level of sadness on the mDES will be greater in the sadness emotion induction condition than in the amusement and neutral emotion induction condition. This item was used exclusively to verify that the sadness emotional manipulation was present.

Hypothesis III: There will be a greater number of car features selected in the subtractive (fully loaded) frame than in the additive (base) frame.

Hypothesis IV: There will be a greater amount of money spent on car features in the subtractive (fully loaded) frame than in the additive (base) frame.

Hypothesis V: There will be an interaction effect between option framing and emotion induction in terms of number of car features selected. Specifically, the differences between number of features chosen will be larger when the participant is induced with the amusement emotion when compared to the number of features chosen in the sadness emotion induction. Stated differently, it is expected that there will be a magnification of the option framing effect in the amusement induction condition relative to the sadness induction condition.

Hypothesis VI: There will be an interaction effect between option framing and emotion induction in terms of amount of money spent. Specifically, the differences between the amounts of money spent will be larger when the participant is induced with the amusement emotion when compared to the amounts of money spent in the sadness emotion induction. Stated differently, it is expected that there will be a magnification of the option framing effect in the amusement induction condition relative to the sadness induction condition.

Method

Participants and Design

Participants were 197 undergraduate students (126 female; mean age 20.5 years) from a large Midwestern private university who completed the study in exchange for course credit. They were recruited from an experimental management system hosted and administered by the psychology department of that university. The experiment utilized a 3 (Emotion Induction: amusement, sadness, neutral) × 2 (Option Framing: fully loaded/subtractive, base model/additive) between-subjects design.

Procedure

The experimental data collection was conducted in the Psychology Department laboratories of two supervising faculty members of the large Midwestern private university. When participants arrived at the laboratory, they were instructed to read and sign an informed consent form (see Appendix A) and then were randomly assigned to one of the six experimental conditions.

After the consent form was signed, participants were seated at a computer work station and were told they were participating in two short unrelated experiments, one which would test their memory using movie clips and another that investigated consumer preferences. This served as the cover story so they were unaware that the real aim of the study was looking at how emotion impacts decision making. Participants then completed the mDES with an instruction set to report how they felt then. Details regarding the mDES can be found in the Materials section below.

Next, participants will watch one of three movie clips to induce an amusement, sadness or a neutral emotion. Details regarding the film clips can be found in the Materials section below.

Next, participants were introduced to the computer-based experimental task of choosing car features as if they were actually shopping for a car, similar to the interface on toyota.com. They chose car features in one of two conditions: (1) add features to a base model or (2) subtract features from a fully-loaded model, depending on their randomly assigned category. The number of features chosen and total cost of features was collected and recorded by the computer. Details regarding the car feature selection task can be found in the Materials section below.

Next participants completed a second mDES measure based on how they felt immediately after watching the film clip. Finally, participants reported their age and gender, and were then debriefed regarding the purpose of the study.

Materials

Emotion manipulation check. This study used a modified version of the Differential Emotional Scale originally developed by Izard (1997) and further modified by Fredrickson, Tugade, Waugh, and Larkin (2003) who added several positive emotional categories to the instrument. Participants rated their emotional state on a five-point scale anchored by "never" and "most of the time." Two items were of interest in the present study, sadness and amusement, and the ratings served as checks to verify that emotional induction manipulations were effective. Participants completed this measure twice, before watching the film clip and after making the simulated car purchase. The mDES instrument is included as Appendix B.

Emotion induction manipulation. Three between-subject levels of emotional induction (sadness, neutral or amusement) were constructed. Each was operationalized by showing a short clip from a popular movie.

The amusement condition movie clip was from "When Harry Met Sally." Harry and Sally are eating lunch at Katz's delicatessen. The clip starts as the women says, "You know, I'm glad I never got involved with you…". The clip lasts 2 minutes and 35 seconds and ends with an older woman ordering her meal saying, "I'll have what she's having." This is the same clip used in Gross and Levenson (1995).

A clip from "The Champ" was used to induce a sadness emotion. The clip starts with a boxer lying on a table in a locker room saying, "Where's my boy?". The clip lasts 2 minutes and 51 seconds and ends with the boy crying and saying,

"No. No! He's not gone, he's not gone, he's not, he's not." This clip was also used in Gross and Levenson (1995).

The last clip was from "Hannah and Her Sisters." The clip starts with two women walking up the stairs at a department store. One woman says, "I just want to look so good, but I don't want to feel like I'm overdressed." The clip lasts 1 minute 32 seconds in length and ends with a woman saying, "I just hate to see you put yourself in a position where you get hurt." This clip induced a neutral emotion and is the same one used in Hewig et al., (2005).

Option framing manipulation. The second independent variable was also a between-subject design and consisted of two option frames. Participants were introduced to a computer based task of choosing car features as if they were actually shopping for a car. The user interface was modeled after the shopping interface on toyota.com. Participants were randomly assigned to one of two levels of option framing. The first group started with a basic stripped down car and chose car features to add to a base model (the *base model/additive* condition). Participants in the second condition were shown a fully-loaded car that includes many options (the *fully loaded/subtractive* condition). They were asked to eliminate or subtract those features that they did not want. A representative example of the computer screens and a table with all the available features are shown in Appendix C.

Product features included moon roof, rear spoiler, alloy wheel locks, mudguards, leather seats, body side moldings, all-weather floor mats, ashtray cups, cargo net, illuminated door sills, etc. There were a total of 20 product

features to choose from. The cost of each feature was listed next to the name and picture of the feature.

Decision making task. The decision making task was the same computer simulated automobile purchasing task described in the option framing manipulation section above. The number of features selected in their final automobile configuration and the cost of those features, as listed, were the primary dependent variables in this study.

Results

Manipulation Check: Emotion Induction

Hypotheses I and II were tested by conducting two independent group *t*-tests. The first test pooled participants who were exposed to either the sadness or the neutral emotional induction manipulation and the contrasting group consisted of participants who received the amusement induction. The dependent variable consisted of the change scores (post-induction minus pre-induction) on the Modified Differential Emotion Scale (mDES) for the amusement item. Similarly, the second *t*-test pooled participants who were in the amusement and neutral condition and contrasted them with participants who received the sadness induction. The dependent variable was change scores (post-induction minus pre-induction) in sadness as captured by the mDES.

Consistent with the Hypothesis I, the amusement manipulation was successful. There was a significant difference in the mean amusement change scores for participants in the amusement (M = 1.48, SD = 1.29) and pooled neutral and sadness (M = -.46, SD = 1.22), conditions; $t(195) = 10.33$, $p < .001$.

Consistent with Hypothesis II, the sadness manipulation was successful. There was a significant difference in the mean sadness change scores for participants in the sadness (M = 2.20, SD = 1.19) and pooled neutral and amusement (M = -.02, SD = .96), conditions; $t(195) = -14.04$, $p <$. 001.

These *t*-tests show a significant difference in mean change scores. It can be concluded that both the amusement and sadness emotion manipulations were effective. A table showing the change scores from all emotion measures between the two mDES measures are included as Appendix D.

Effects of Emotion and Option Framing on Decision Making

Hypotheses III-VI were analyzed with separate 3 (Emotion Induction: amusement, sadness, neutral) × 2 (Option Framing: fully loaded/subtractive, base model/additive) between-subjects analyses of variance (ANOVAs) for number of features chosen and final cost from the decision making task. The means and standard deviations are presented in Appendix E. Analysis of variance summary tables are included as Appendix F.

As predicted in Hypothesis III, the analysis yielded the main effect for number of features chosen in that significantly more features were chosen in the fully loaded frame (M = 11.83, SD = 4.05) than in the base model frame (M = 8.07, SD = 4.04), $F(1, 191) = 41.75$ $p < .001$.

The analysis also found a main effect for the amount of money spent, as predicted by Hypothesis IV. The amount of money spent in the fully loaded condition (M = $1924.30, SD = 764.28) was significantly more than the amount of money spent in the base model condition (M = $1460.46, SD = 808.28), F(1,

191) = 16.81 $p < .001$.

Hypotheses V and VI predicted an interaction effect between option framing and emotion induction in the number of features selected and amount of money spent. More specifically, the differences between the number of features chosen and the amount of money spent should be greater for participants in the amusement emotion induction condition (versus the sadness emotion induction condition). The same ANOVA analysis as above did not yield a significant interaction effect between option frame and emotion induction in the number of features selected, $F(2, 191) = 0.12$ $p = .89$, or the amount of money spent $F(2, 191) = 0.05$ $p = .95$. Stated differently, option framing effects were not magnified in the amusement emotion induction condition relative to the sadness emotion induction condition in either the number of car features chosen or in the amount of money spent on these features.

Discussion

The aim of this study was to explore decision processes, in the context of option framing, and how emotion impacts these decision processes. More specifically, how the emotions of amusement and sadness affect option framing decisions. The option framing results of this study are consistent with the predictions derived from Hypotheses III and VI. They support previous option framing research findings in that consumers will spend more money and settle on more features when they remove features from a fully loaded model rather than add features to a base model (Biswas, 2009; Cheng, et al., 2013; Herrmann et al., 2013; Levin, et al., 2002; Park, et al., 2000, Park & Kim, 2012).

These option framing results can be explained by three phenomena: anchoring, loss aversion, and the endowment effect. Participants were anchored to one of two extreme starting points when configuring their car (no features selected or all features selected). They then adjusted away from the anchor to come up with their final car configuration. This study's findings support Kahneman and Teversy's (1979) conclusions that starting defaults serve as anchors and adjustments are made relative to where the anchor is causing significant differences in the final product configurations.

Further, the results can be explained by loss aversion. Loss aversion occurs because losses carry more psychological impact and are more salient than equal sized gains. Consistent with findings from Kahneman and Tversky (1979) and Thaler (1985), participants in this study feared losing more than they anticipated gaining when moving away from their particular anchor point of a fully loaded car or a car with no features selected. In the base model condition, the monetary loss was more important than the gain in product utility. In the fully loaded model condition, the monetary gain of removing features was relatively low compared to the loss of product utility. Loss aversion caused the participants to stay closer to their respective anchors rather than end up with the same number of features regardless of starting position, This refutes Becker's (1976) rational choice theory and Von Neumann and Morgenstern's (1944) expected utility model which would predict no difference in the final car configurations between the base model and fully loaded model starting points.

Additionally, the endowment effect which builds on loss aversion, further explains the results of the anchoring effects observed in this study. The endowment effect suggests people place more value on things they already own than the cost to purchase the same item (Hardie et al., 1993; Thaler, 1980). Even though the participants did not own the cars, they felt a sense of ownership when they saw the features already included in their car configuration, making it is very difficult to eliminate the features. These results support the findings of online shoppers experiencing pseudo endowment effects when they have items in their virtual shopping cart (Ariely & Simonson, 2003; Peck & Shu 2009).

Hypotheses V and IV predicted that participants induced with amusement would have magnified option framing effects compared to those who were induced with a sadness emotion. The results of this study did not support these predictions. Dual process theories suggest that people experiencing positive affect will make decisions quickly and impulsively and not question default options, whereas individuals experiencing negative affect will make decisions more slowly, analytically and deliberately (King et al., 2007; Krauss et al., 2004; Samson & Voyer, 2012). Biswas (2009) demonstrated the impact of these two distinct information processing modes in an option framing scenario where participants chose car features similar to the present study. The current study differed from Biswas (2009) in that Biswas did not have an emotional manipulation to induce an information processing mode. Instead, Biswas (2009) primed the information processing mode by asking participants to make the decisions about the car features using either a strictly logical or emotional mode.

The study reported here used film clips to induce an emotion with the expectation the amusement emotion induction would influence a fast and impulsive information processing mode versus a sad emotion induction that would lead to a slow and analytical information processing mode in the car feature selection task.

This decision mode prime is an important distinction between the current study and Biswas (2009). The seemingly divergent findings can be explained due to the car feature selections in the present study may not have been made with the intended primed decision processing mode. The mDES change scores served as an emotional manipulation check and indicated that the intended emotions were primed effectively. It is possible, however, that the emotions were attenuated before the selection of the car features. Erber and Tesser (1992) and Gross, Richards, and John (2006) suggest that engaging in a demanding or effortful task will regulate an individual's mood, and even just the expectation that a task will be effortful will cause positive and negative moods to diminish (Gohm, 2003). Moods can also be tempered when an individual feels the decision has a high level of personal relevance (Forgas, 1989).

Buying an automobile is a large purchase, relative to most other purchases in someone's life—perhaps even more so for the current participants, who were undergraduate psychology students who presumably make large purchases of this type infrequently, if at all. Perhaps participants in this study viewed the decision making task as effortful because of their lack of expertise. If so, this may have led to an attenuation of the amusement and sadness emotional states. Future research should investigate the impact of emotion on option framing utilizing a

customizable product that is less of a major purchase than an automobile to reduce the chances that the decision is cognitively effortful and has less personal relevance to the decision maker.

Another area for future research to investigate is the impact of emotion on option framing by inducing emotion simultaneously with the option framing task. In the current study, the emotion induction was accomplished by having participants watch a film clip before selecting car features. This sequential order created a condition where the induced mood could attenuate. A future study could have participants listen to music to induce a mood while picking product features in an option framing task. Music has been shown to be a reliable mood induction even when presented simultaneously with other experimental tasks such as driving in a car simulator in stressful situations (Fairclough, van der Zwagg, Spiridon, & Westeerink, 2014).

This study utilized a hypothetical scenario asking an undergraduate student sample in a laboratory to act as if they were purchasing a vehicle for themselves which may raise some external validity concerns. Future option framing studies should employ real life situations with a sample more diverse than just undergraduate college students.

One of the aims of this study was to investigate how emotion leads people into an experiential or rational decision processing mode. Future studies should explore how individual differences influence decision processing modes in an option framing context. Past research has suggested individual differences exist in preference for cognitive styles when making decisions (Epstein, Pacini, Heier,

& Denes-Raj, 1996; Akinci & Sadler-Smith , 2013). These studies explored individual differences in decision making using the Rational Experiential Inventory (REI e.g., Epstein et al., 1996) based on Epstein's Cognitive Experiential Self Theory. Simon, Fagley & Halleran (2004) suggested individual differences, in the need for cognition, influence decisions in a risky choice framing context. No studies, however have investigated individual differences in option framing scenarios. It would be interesting to explore if someone who prefers an experiential cognitive style versus a rational style, based on the REI, would be more susceptible to option framing effects.

Conclusion

Option framing is becoming more prevalent in the world. Consumers have the ability to customize many products and services on the internet with just a few clicks of the mouse. This study suggests the manner in which a product is displayed can impact the ultimate product configuration. When a product is shown having all the features included as the default and a consumer has to remove unwanted features they will end up including more features and spending more money than when the product is a base model and the consumer has to add features to it. Although emotion did not impact the option framing in this study, these findings bring up new questions and future areas of research in how emotion impacts decision making. These findings have important implications for how marketers sell products and how consumers make purchases.

References

Adaval, R. (2003). How good gets better and bad gets worse: Understanding the impact of affect on evaluations of known brands. *Journal of Consumer Research, 30,* 352-367.

Akinci, C., & Sadler-Smith, E. (2013). Assessing Individual Differences in Experiential (Intuitive) and Rational (Analytical) Cognitive Styles. *International Journal of Selection & Assessment, 21*, 2

Ariely, D., & Simonson, I. (2003). Buying, bidding, playing, or competing? Value assessment and decision dynamics in online auctions. *Journal of Consumer Psychology, 13,* 113-123.

Au, K., Chan, F., Wang, D., & Vertinsky, I. (2003). Mood in foreign exchange trading: Cognitive processes and performance. *Organizational Behavior and Human Decision Processes, 91*, 322-338.

Bargh, J. A. (2002). Losing consciousness: Automatic influences on consumer judgment, behavior, and motivation. *Journal of Consumer Research, 29*, 280-285.

Becker, G. S. (1976). *The economic approach to human behavior*. Chicago, IL: University of Chicago Press.

Biswas, D. (2009) The effects of option framing on consumer choices: Making decisions in rational versus experiential processing modes. *Journal of Consumer Behavior, 8,* 284-299

Biswas, D., & Grau, SL. (2008) Consumer choices under product option framing: loss aversion principles or sensitivity to price differentials? *Psychology & Marketing, 25*, 399-415.

Bless, H., Clore, G. L., Schwarz, N., Golisano, V., Rabe, C., & Wölk, M. (1996). Mood and the use of scripts: Does a happy mood really lead to mindlessness?. *Journal of Personality and Social Psychology, 71*, 665-679.

Block, L. G., & Keller, P. A. (1995). When to accentuate the negative: The effects of perceived efficacy and message framing on intentions to perform a health-related behavior. *Journal of Marketing Research*, 192-203.

Blumenthal-Barby, J. S., & Krieger, H. (2015). Cognitive biases and heuristics in medical decision making: A critical review using a systematic search strategy. *Medical Decision Making, 35*, 539-557.

Brendl, C. M., Chattopadhyay, A., Pelham, B. W., & Carvallo, M. (2005). Name letter branding: Valence transfers when product specific needs are active. *Journal of Consumer Research, 32*, 405-415.

Carmon, Z., Wertenbroch, K., & Zeelenberg, M. (2003). Option attachment: When deliberating makes choosing feel like losing. *Journal of Consumer Research, 30*, 15-29.

Chaiken, S., & Trope, Y. (1999). *Dual-process theories in social psychology*. New York, NY, US: Guilford Press.

Chartrand, T. L., & Bargh, J. A. (1999). The chameleon effect: The perception–behavior link and social interaction. *Journal of Personality and Social Psychology*, *76*, 893-910.

Cheng, Yen, Shih-Chieh & Chia-Jung (2013) Product option framing under the influence of a promotion versus prevention focus. *Journal of Economic Psychology*, *39*, 402-413.

Dellaert, B. G. C., & Stremersch, S. (2004). *Consumer preferences for mass customization*. Maastricht, Netherlands: METEOR, Maastricht research school of Economics of Technology and Organizations.

Elsbach, K. D., & Barr, P. S. (1999). The effects of mood on individuals' use of structured decision protocols. *Organization Science, 10*, 181-198.

Epstein, S. (1991). Cognitive-experiential self-theory: An integrative theory of personality. In R. C. Curtis, R. C. Curtis (Eds.), *The relational self: Theoretical convergences in psychoanalysis and social psychology* (pp. 111-137). New York, NY: Guilford Press.

Epstein, S., Pacini, R., Heier, H., & Denes-Raj, V. (1996). Individual differences in intuitive-experiential and analytical-rational thinking styles. *Journal of Personality and Social Psychology, 71,* 390.

Erber, R., & Tesser, A. (1992). Task effort and the regulation of mood: The absorption hypothesis. *Journal of Experimental Social Psychology, 28,* 339-359.

Fairclough, S., van der Zwagg, M., Spiridon, E., & Westerink, J. (2014). Effects of mood induction via music on cardiovascular measures of negative emotion during simulated driving. *Physiology & Behavior, 129,* 173-180.

Frederick, S., Loewenstein, G., & O'Donoghue, T. (2002). Time discounting and time preference: A critical review. *Journal of Economic Literature, 40,* 351-401.

Fredrickson, B. L., Tugade, M. M., Waugh, C. E., & Larkin, G. R. (2003). What good are positive emotions in crisis? A prospective study of resilience and emotions following the terrorist attacks on the United States on September 11th, 2001. *Journal of Personality and Social Psychology, 84,* 365-376.

Forgas, J. P. (1989). Mood effects on decision making strategies. *Australian Journal of Psychology, 41,*197-214

Furl, N., Gallagher, S., & Averbeck, B. B. (2012). A selective emotional decision-making bias elicited by facial expressions. *Plos ONE, 7,* e33461.

Ganzach, Y., & Karsahi, N. (1995). Message framing and buying behavior: A field experiment. *Journal of Business Research, 32,* 11-17.

Gohm, C. L. (2003). Mood regulation and emotional intelligence: Individual differences. *Journal of Personality and Social Psychology, 84,* 594-607.

Grable, J. E., & Roszkowski, M. J. (2008). The influence of mood on the willingness to take financial risks. *Journal of Risk Research, 11,* 905-923.

Gross, J. J., Richards, J. M., & John, O. P. (2006). Emotion regulation in everyday life. In D. K. Snyder, J. A. Simpson, & J. N. Hughes (Eds.), *Emotion*

regulation in families: Pathways to dysfunction and health (pp. 13–35). Washington, DC: American Psychological Association

Gross, J. J., & Levenson, R. W. (1995). Emotion elicitation using films. *Cognition & Emotion, 9*, 87-108.

Hardie, B. G. S., Johnson, E. J., & Fader, P. S. (1993). Modeling loss aversion and reference dependence effects on brand choice. *Marketing Science, 12*, 378-394.

Herrmann, A., Hildebrand, C., Sprott, D. E., & Spangenberg, E. R. (2013). Option framing and product feature recommendations: Product configuration and choice. *Psychology & Marketing, 30*, 1053-1061.

Hewig, J., Hagemann, D., Seifert, J., Gollwitzer, M., Naumann, E., & Bartussek, D. (2005). A revised film set for the induction of basic emotions. *Cognition & Emotion, 19*, 1095-1109.

Hildebrand, C., Häubl, G., & Herrmann, A. (2014). Product customization via starting solutions. *Journal of Marketing Research, 51*, 707-725.

Howard, D. J., & Barry, T. E. (1994). The role of thematic congruence between a mood-inducing event and an advertised product in determining the effects of mood on brand attitudes. *Journal of Consumer Psychology, 3*, 1-27.

Izard, C. E. (1977). Human emotions. New York: Plenum Press.

Jin, L., He, Y., & Song, H. (2012). Service customization: To upgrade or to downgrade? An investigation of how option framing affects tourists' choice of package-tour services. *Tourism Management, 33*, 266-275.

Kahneman, D. & A. Tversky. (1979). "Prospect theory: An analysis of decision under risk. *Econometrica, 47*, 263-91.

Kahneman, D. (2003). A perspective on judgment and choice: mapping bounded rationality. *The American Psychologist, 58*, 697-720.

Kahneman, D., Knetsch, J. L, & Thaler, R. H. (1990). Experimental tests of the endowment effect and the Coase theorem. *Journal of Political Economy*, 1325-1348.

Kim, M. Y., & Kanfer, R. (2009). The joint influence of mood and a cognitively demanding task on risk-taking. *Motivation and Emotion, 33*, 362-372.

King, L. A., Burton, C. M., Hicks, J. A., & Drigotas, S. M. (2007). Ghosts, UFOs, and magic: Positive affect and the experiential system. *Journal of Personality and Social Psychology, 92*, 905-919.

Krauss, D. A., Lieberman, J. D., & Olson, J. (2004). The effects of rational and experiential information processing of expert testimony in death penalty cases. *Behavioral Sciences & the Law, 22*, 801-822.

Levin, I. P., Schreiber, J., Lauriola, M., & Gaeth, G. J. (2002). A tale of two pizzas: Building up from a basic product versus scaling down from a fully-loaded product. *Marketing Letters, 13*, 335-344.

Levin, I. P., Schneider, S. L., & Gaeth, G. J. (1998). All frames are not created equal: A typology and critical analysis of framing effects.*Organizational Behavior and Human Decision Processes, 76*, 149-188.

Loewenstein, G., & Issacharoff, S. (1994). Source dependence in the valuation of objects. *Journal of Behavioral Decision Making, 7*, 157-168.

Luini, L. P., & Marucci, F. S. (2015). Prediction–confirmation hypothesis and affective deflection model to account for split-second decisions and decision-making under pressure of proficient decision-makers. *Cognition, Technology & Work*, *17*, 329-344.

McElroy, T., & Dowd, K. (2007). Susceptibility to anchoring effects: How openness-to-experience influences responses to anchoring cues. *Judgment and Decision Making*, *2*, 48-53.

Menon, G., Block, L. G., & Ramanathan, S. (2002). We're at as much risk as we are led to believe: Effects of message cues on judgments of health risk. *Journal of Consumer Research*, *28*, 533-549.

Meyerowitz, B. E., & Chaiken, S. (1987). The effect of message framing on breast self-examination attitudes, intentions, and behavior. *Journal of Personality and Social Psychology*, *52*, 500-510.

Mikels, J. A., Cheung, E., Cone, J., & Gilovich, T. (2013). The dark side of intuition: Aging and increases in nonoptimal intuitive decisions. *Emotion*, *13*, 189.

Park, J., & Banaji, M. R. (2000). Mood and heuristics: the influence of happy and sad states on sensitivity and bias in stereotyping. *Journal of Personality and Social Psychology*, *78*, 1005.

Park, S., & Kim, M. (2012). The impact of attribute importance in the effects of option framing on choice: budget range and justification as moderators of loss aversion. *Psychology & Marketing*, *29*, 726-737.

Park C.; Jun, Sung Youl; MacInnis, Deborah J.(2000) Choosing what I want versus rejecting what I do not want: An application of decision framing to product option choice decisions. *Journal of Marketing Research, 37*, 187-202

Peck, J., & Shu, S. B. (2009). The effect of mere touch on perceived ownership. *Journal of Consumer Research, 36*, 434-447.

Petty, R. E., Cacioppo, J. T., Kao & Rodriguez, R. (1986). Central and peripheral routes to persuasion: An individual difference perspective. *Journal of Personality and Social Psychology, 51*, 1032.

Samson, A., & Voyer, B. G. (2012). Two minds, three ways: dual system and dual process models in consumer psychology. *Ams Review : Official Publication of the Academy of Marketing Science, 2*, 48-71.

Schwarz, N. (2013). Feelings as information: implications for affective influences on information processing. *Theories of Mood and Cognition: A User's Guidebook*, 159.

Schwarz, N., & Bless, H. (1991). Happy and mindless, but sad and smart? The impact of affective states on analytic reasoning. *Emotion and Social Judgments*, 55-71.

Shamaskin, A. M., Mikels, J. A., & Reed, A. E. (2010). Getting the message across: Age differences in the positive and negative framing of health care messages. *Psychology and Aging, 25*, 746.

Simon, A. F., Fagley, N. S., & Halleran, J. G. (2004). Decision framing: moderating effects of individual differences and cognitive processing. *Journal of Behavioral Decision Making, 17,* 77-93.

Slovic, P., Finucane, M., Peters, E., & MacGregor, D. G. (2002). Rational actors or rational fools: Implications of the affect heuristic for behavioral economics. *The Journal of Socio-Economics, 31*, 329-342.

Storbeck, J., & Clore, G. L. (2005). With sadness comes accuracy; with happiness, false memory: Mood and the false memory effect. *Psychological Science, 16,* 785-791.

Strack, F., Werth, L., Deutsch, R. (2006). Reflective and impulsive determinants of consumer behavior. *Journal of Consumer Psychology, 16,* 205-216.

Thaler, R. (1980). Toward a positive theory of consumer choice. *Journal of Economic Behavior & Organization, 1*, 39-60.

Thaler, R. (1985). Mental accounting and consumer choice. *Marketing Science, 4*, 199.

Tversky, A., & Kahneman, D. (1981). The framing of decisions and the psychology of choice. *Science, 211*, 453-458.

Van Baaren, R. B., Holland, R. W., Steenaert, B., & van Knippenberg, A. (2003). Mimicry for money: Behavioral consequences of imitation. *Journal of Experimental Social Psychology, 39,* 393-398.

Von, N. J., & Morgenstern, O. (1944). *Theory of Games and Economic Behavior*. Düsseldorf: Verl. Wirtschaft und Finanzen.

Wansink, B., Kent, R. J., & Hoch, S. (1998). An anchoring and adjustment model of purchase quantity decisions. *Journal of Marketing Research, 1998,* 71-81.

Westermann, R., Stahl, G., & Hesse, F. (1996). Relative effectiveness and validity of mood induction procedures: analysis. *European Journal of Social Psychology*, *26,* 557-580.

Winkielman, P., Berridge, K. C., & Wilbarger, J. L. (2005). Unconscious affective reactions to masked happy versus angry faces influence consumption behavior and judgments of value. *Personality and Social Psychology Bulletin*, *31*, 121-135.

Yuen, K. S., & Lee, T. M. (2003). Could mood state affect risk-taking decisions?. *Journal of Affective Disorders*, *75*, 11-18.

Appendix A

DePaul IRB Approved
Protocol #
<Approval date> Through <Expire date>

ADULT CONSENT TO PARTICIPATE IN RESEARCH

Affective & Deliberative Processes in Decision Making- Option Framed Scenarios

Principal Investigator: Charles Drehmer, Graduate Student

Institution: DePaul University, Chicago, Illinois, USA

Department (School, College): Psychology Department, College of Science and Health

Faculty Advisor: Joe Mikels, PhD, Psychology Department

Collaborators: Kim Quinn, PhD, DePaul University, Psychology Department

What is the purpose of this research?
We are asking you to be in a research study because we are trying to learn more about the impact of emotion on decision making. This study is being conducted by Charles Drehmer, a graduate student at DePaul University as a requirement to obtain his PhD. This research is being supervised by his faculty advisor, Joe Mikels, PhD. There may be other people on the research team assisting with the study.

We hope to include about 240 people in the research.

Why are you being asked to be in the research?
You are invited to participate in this study because you are a healthy adult aged 18 years or older. You must be age 18 or older to be in this study. This study is not approved for the enrollment of people under the age of 18.

What is involved in being in the research study?
If you agree to be in this study, being in the research involves completing several computerized tasks that evaluate how people make consumer decisions under specific emotional states. You will be asked to watch a movie clip and then complete a simulated consumer purchase on the computer. You will be randomly assigned to one of six groups. Each group will watch one of three movie clips and complete a simulated consumer purchasing scenario in one of two possible conditions.

How much time will this take?
This study will take about 30 minutes of your time.

DePaul IRB Approved
Protocol #
<Approval date> Through <Expire date>

Are there any risks involved in participating in this study?
This study will involve very minimal risk to participants. There is no risk beyond watching short clips from major motion pictures to induce positive, negative or neutral emotions and those associated with everyday decision making.

Are there any benefits to participating in this study?
The results of this study will not directly benefit participants. However, the knowledge gained could produce a benefit to society by informing future research and interventions related to consumer behavior, e-commerce and decision-making.

Is there any kind of payment, reimbursement or credit for being in this study?
You will be given 1 psychology subject pool credit for participation in the research. You must provide your subject pool number in order to be given credit.

Can you decide not to participate?
Your participation is voluntary, which means you can choose not to participate. There will be no negative consequences, penalties, or loss of benefits if you decide not to participate or change your mind later and withdraw from the research after you begin participating.

Who will see my study information and how will the confidentiality of the information collected for the research be protected?
The research records will be kept and stored securely. Your information will be combined with information from other people taking part in the study. When we write about the study or publish a paper to share the research with other researchers, we will write about the combined information we have gathered. We will not include your name or any information that will directly identify you. We will make every effort to prevent anyone who is not on the research team from knowing that you gave us information, or what that information is. However, some people might review or copy our records that may identify you in order to make sure we are following the required rules, laws, and regulations. For example, the DePaul University Institutional Review Board and/or the Data and Safety Monitoring Board may review your information. If they look at our records, they will keep your information confidential.

Who should be contacted for more information about the research?
Before you decide whether to accept this invitation to take part in the study, please ask any questions that might come to mind now. Later, if you have questions, suggestions, concerns, or complaints about the study or you want to get additional information or provide input about this research, you can contact the researcher, [Charles Drehmer, 773.325.7405, cdrehmer@depaul.edu or Faculty Sponsor: Joe Mikels, 773.325.8769, JMIKELS@depaul.edu.

DePaul IRB Approved
Protocol #
<Approval date> Through <Expire date>

This research has been reviewed and approved by the DePaul Institutional Review Board (IRB). If you have questions about your rights as a research subject you may contact Susan Loess-Perez, DePaul University's Director of Research Compliance, in the Office of Research Services at 312-362-7593 or by email at sloesspe@depaul.edu.

You may also contact DePaul's Office of Research Services if:

- Your questions, concerns, or complaints are not being answered by the research team.
- You cannot reach the research team.
- You want to talk to someone besides the research team.

You will be given a copy of this information to keep for your records.

Statement of Consent from the Subject:

I have read the above information. I have had all my questions and concerns answered. By signing below, I indicate my consent to be in the research.

Signature: _____

Printed name: _____

Date: _____

Appendix B

mDES

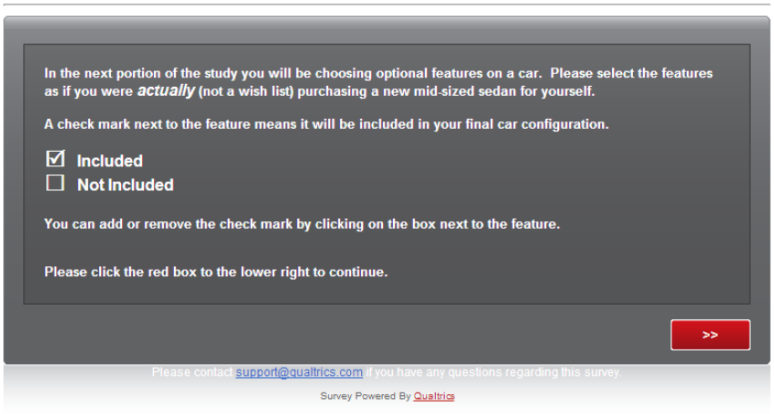
In any given circumstance, people often have a number of different feelings. Please indicate how much of each emotion you feel right now, that is, at the present moment.

	not at all	a little bit	moderately	quite a bit	extremely
	1	2	3	4	5
1. amusement	O	O	O	O	O
2. hope	O	O	O	O	O
3. fear	O	O	O	O	O
4. guilt	O	O	O	O	O
5. sadness	O	O	O	O	O
6. compassion	O	O	O	O	O
7. awe	O	O	O	O	O
8. anger	O	O	O	O	O
9. surprise	O	O	O	O	O
10. joy	O	O	O	O	O
11. shame	O	O	O	O	O
12. contempt	O	O	O	O	O
13. love	O	O	O	O	O
14. pride	O	O	O	O	O
15. contentment	O	O	O	O	O
16. embarrassment	O	O	O	O	O
17. interest	O	O	O	O	O
18. disgust	O	O	O	O	O
19. gratitude	O	O	O	O	O

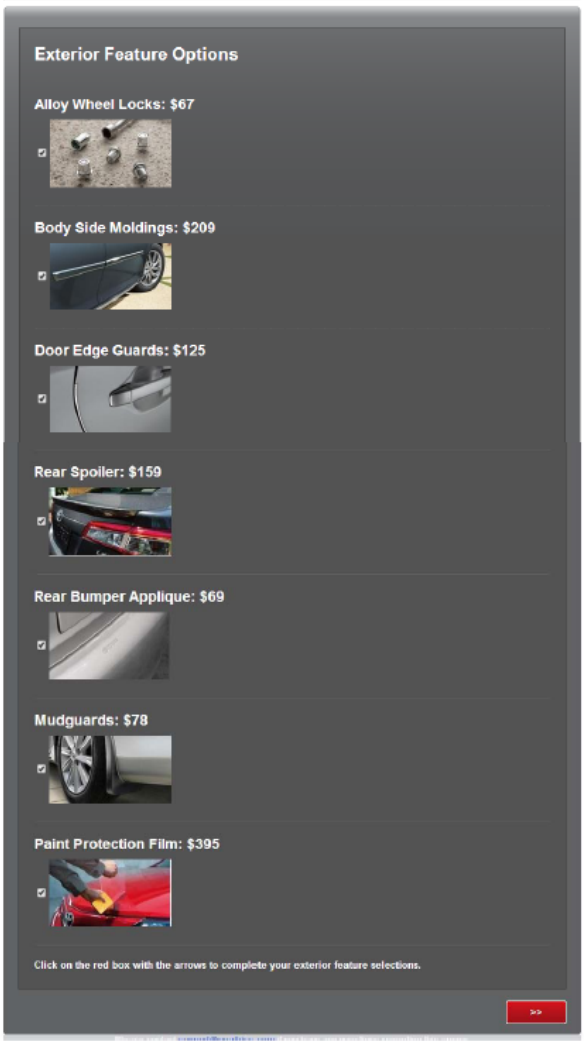
Appendix C

Car Features Screen Shots and Table

1st screen participant will see after watching film clip



2nd screen participant will see after watching film clip



Alloy Wheel Locks	$67
Body Side Moldings	$209
Door Edge Guards	$125
Rear Spoiler	$159
Rear Bumper Applique	$69
Mudguards	$78
Paint Protection Film	$395
All-weather Floor Mats	$100
Ash Tray Cups	$25
Cargo New Envelope	$49
Cargo Tote	$49
Cargo Tray	$100
Cargo Floor Mat	$130
Illuminated Door Sills	$299
Carpet Trunk Mat	$85
Glass Breakage Sensor	$299
Emergency Assistance Kit	$29
First Aid Kit	$29
Remote Engine Starter	$499
Vehicle Intrusion Protection- Security System	$359

Appendix D

mDES Change Score Table

Table 1
Means of mDES change scores- post-induction minus pre-induction

	Amusement	Neutral	Sadness
Emotion	*M*	*M*	*M*
Amusement	1.48	-0.25	-0.67
Hope	-0.76	-1.08	-0.89
Fear	-0.36	-0.15	0.14
Guilt	0.14	-0.08	0.35
Sadness	-0.32	0.29	2.20
Compassion	-0.45	-0.18	1.17
Awe	0.73	0.08	0.53
Anger	-0.12	0.14	0.47
Surprise	1.85	0.46	0.35
Joy	0.41	-0.78	-1.12
Shame	0.23	0.23	0.03
Contempt	-0.42	-0.11	-0.38
Love	-0.73	-0.92	-0.06
Pride	-0.79	-0.85	-1.06
Contentment	-0.47	-0.65	-1.20
Embarrassment	0.76	0.40	-0.15
Interest	-0.12	-0.69	-0.33
Disgust	0.32	0.29	0.30
Gratitude	-0.95	-0.94	-0.41

Note. The scale for the mDES measure was 1= not at all, 2= a little bit, 3= moderately, 4= quite a bit, 5= extremely

Appendix E

Participant Means and Standard Deviations by Condition Table

Table 2

Participant Means and Standard Deviations by Condition

	Sadness Emotion Induction		Neutral Emotion Induction		Amusement Emotion Induction	
Dependent variable	Base Frame (n=33)	Fully Loaded Frame (n=33)	Base Frame (n=32)	Fully Loaded Frame (n=33)	Base Frame (n=33)	Fully Loaded Frame (n=33)
Number of features chosen	8.15	11.58	8.19	12.30	7.88	11.61
(standard deviation)	(3.68)	(3.37)	(4.69)	(4.67)	(3.81)	(4.09)
Cost of features chosen	$1415.67	$1842.39	$1527.31	$1977.55	$1440.42	$1952.97
(standard deviation)	$705.21	$683.71	$954.02	$864.20	$770.97	$750.92

Appendix F

Analysis of Variance Tables for Number of Car Features Chosen and Amount of Money Spent by Emotion and Option Frame

Table 3

Analysis of Variance for Number of Car Features Chosen by Emotion and Option Frame

Source	SS	df	MS	F
Emotion	9.00	2	4.50	.271
Option Frame	694.59	1	694.59	41.75*
Emotion * Option Frame	3.93	2	1.97	0.12
Error	3,177.54	191	16.64	

Note. * = p < .001

Table 4

Analysis of Variance for Amount of Money Spent by Emotion and Option Frame

Source	SS	df	MS	F
Emotion	500,426.66	2	250,213.33	.398
Option Frame	10,563,972.53	1	1,056,3972.53	16.807*
Emotion * Option Frame	64,857.99	2	32,429.00	0.052
Error	120,051,143.30	191	62,8540.02	

Note. * = p < .001