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POSITIVE VERSUS NEGATIVE SUNK COST DECISION FRAMES

Dr. Ross B. Steinman
Professor, Psychology Department
Widener University, Chester, Pennsylvania, USA

Abstract

This research reports the findings from a factorial experiment on the interactive effect of decision frame and sunk cost magnitude on consumer attitude and choice. Participants were randomly assigned to one of six conditions and presented with a fictional description that varied on the positivity or negativity of the decision frame as well as the magnitude of the sunk cost on a continuum ranging from high to low. Consumer variables including choice, loyalty, behavioral intentions, and attitudes were utilized as outcome measures. There was evidence of an interactive effect of decision frame and sunk cost magnitude on self-reported consumer behavior. The implications of the findings in various consumer decision making environments are highlighted.

Keywords: Decision Frame, Sunk Costs, Consumer Choice

INTRODUCTION

Decision makers demonstrate the sunk cost effect when they continue to expend resources even though future utility would improve by terminating the plan or choosing a better option (Bornstein & Chapman, 1995). Sunk costs are viewed as expenditures, often financial, that have already been incurred and cannot be recovered (Thaler, 1980). Since these costs cannot be recovered, it is posited that they should not influence individuals when attempting to make decisions about future behaviors (Moon, 2001). However, individuals frequently acquiesce to the sunk cost effect when making decisions. This ultimately leads to engagement in a biased decision making process. The wide-ranging literature on the sunk cost effect depicts irrational decision making in various scenarios including: consumer behavior (Steinman & Jacobs, 2015; Steinman, 2018), finance (Garland, 1990), personal behavior (Arkes & Blumer, 1985), social behavior (Garland & Newport, 1991), and animal behavior (Magalhaes & White, 2014). In addition, the sunk cost effect has been used to explain why participants select vacation options (Tan & Yates, 1995) as well as explain why fans attend or do not attend various professional sporting events (Gourville & Soman, 1998).

Overall, there continues to be support for the notion that if an investment has already been made by individuals then they are more likely to attempt to finish the proposed project regardless of potential negative outcomes. This effect is largely referred to as “throwing good money after bad” (Arkes & Blumer, 1985). The sunk cost effect is frequently examined in a monetary content but also can be extended to the cost of time. Time-based costs, or “spending time”, are an important variable to examine in sunk cost research as temporal factors can influence consumer choice when inevitable losses are presented. Research suggests that consumers are less likely to give up assets that do not have a defined monetary value but required a significant effort of temporal accumulation (Steinman, 2018).

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The underlying mechanisms for sunk cost effects continues to warrant empirical research. In their highly regarded research, Arkes and Blumer (1985) proposed that the psychological mechanism for the sunk cost effect is the desire not to appear wasteful. Arkes and Blumer (1985) found that participants' reluctance not to complete assigned tasks in their experimental paradigm could be explained as their desire to avoid a guaranteed loss as the defining outcome. This is consistent with what Kahneman and Tversky (1979) found in a variety of hypothetical decision making scenarios across many areas of inquiry. Overall, individuals often more favorably value outcomes that are viewed as certainties in comparison to those that are considered probable. This occurs even if the expected values, by definition a mathematical computation, dictate otherwise.

One variable that is of interest to researchers is how a decision making scenario is framed to the consumer. The framing effect refers to an individual's often inconsistent decision making process based on how a consumer situation is positioned. This concept stems from Kahneman and Tversky's (1979) prospect theory research. According to prospect theory, subjective certainty magnifies both positive and negative values before one engages in the decision making process. One important thing to note about prospect theory is that consumers are dealing with perceived certainty; one's perception of what is likely to occur, not necessarily the actual outcome, drives their choice behavior. Most individuals do not fully understand statistical probabilities in everyday decision making. Their decisions are reflective of their best efforts to apply probabilities under temporal and informational constraints. There are many mechanisms underlying prospect theory. However, one overarching finding is that individuals greatly overvalue gains and undervalue losses in a decision making context. Individuals therefore respond differently to identical situations depending on if there is priming of a positive or negative frame. In the context of this description, the decision frame typically refers to its general valence. For example, most individuals would select a guaranteed gain over a guaranteed loss. For example, one would assume that when faced with a choice of winning or losing one thousand dollars, overwhelming, individuals will select winning one thousand dollars. In more complex decision frame scenarios, research suggests that individuals tend to be risk-averse when a positive frame is presented; when there is a negative frame they tend to be loss-averse.

Steinman and Jacobs (2015) found evidence that high sunk cost magnitude manipulations resulted in attitudinal and behavioral change across various consumer-brand relationship and product alternative dimensions. Participants in the high sunk cost, violation of consumer-brand relationship, no product alternatives condition were less likely to leave the brand in comparison to those in the low sunk cost alternative. In a follow-up study, Steinman (2018) conducted experimental research on the interactive effect of temporal accumulation of non-monetary assets, sunk costs, and violations of the consumer-brand relationship on consumer attitude and choice in a decision making environment. Steinman (2018) found that participants in high sunk cost conditions, using temporal accumulation (instead of monetary accumulation), viewed the brand in less favorable terms but they were less likely to leave the brand even though their perceptions of the brand might have changed. Even though participants did make financial sacrifices, their temporal sunk costs impacted their consumer decision making. This can be attributed to the notion that there was likely a significant expenditure to accumulate the rewards and that the participants used mental accounting to attribute a perceived value on them. This research added

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to an emerging literature on temporal and non-monetary factors influencing sunk costs in the field of consumer behavior.

The aforementioned research did not use monetary frames, as is often the case in sunk cost research. Conversely, consumer rewards accumulation was the primary topic of interest in relation to sunk cost effects. Many companies in today's business climate utilize incentive programs to entice customers to begin as well as continue using their products and services. These consumer rewards can take a significant amount of time to accrue, and it is posited that consumers might be reluctant to relinquish said rewards after "earning" them. Although these rewards do not have a defined monetary value in a traditional economic sense, they often have monetary associations. For example, in the travel and hospitality industry, individuals spend money to make reservations with specific airlines or hotel chains to maintain an enhanced loyalty status. In the process of doing so they then accumulate rewards points that can be redeemed at a later date for free travel or lodging. Therefore, the sunk cost effect has the potential to be expressed in powerful terms in non-monetary contexts.

Another variable to examine in the context of sunk costs is how the sunk cost dilemma is framed. For example, the potency of the decision frame, on a continuum from positive to negative, including the personal versus impersonal nature of the marketing environment as an intervening variable in sunk cost scenarios, can be an important factor in the decision making process. It is possible that positively framed sunk costs situations will be perceived by consumers as less damaging that negatively framed sunk cost scenario. A more comprehensive understanding of the effect of the decision frame (i.e. positive versus negative) on traditional sunk cost outcomes will continue to extend the cognitive decision making literature into the field of consumer behavior. This has the potential to add clarity to the role of the consumer-brand relationship as well as the consumer's psychological makeup in the decision making process. This research has practical applications because if consumers are more informed, or self-aware, about their choices then they are more likely to engage in productive consumer behaviors from both individual and societal perspectives. Overall, the broad research questions under investigation include: 1) Will the sunk cost effect be magnified when an individual has to make a consumer decision in a complex marketing environment that has the potential to significantly impact their self-identity?; 2) Will the sunk cost effect be mitigated by external factors unrelated to the psychological self?; and 3) What is the role of positive versus negative decision frames in accounting for sunk cost effects?

METHODOLOGY

In this research, students enrolled in introductory courses at a university in the United States of America were randomly assigned to one of six conditions: 1) low sunk cost magnitude, positive decision frame (LP); 2) medium sunk cost magnitude, positive decision frame (MP) 3) high sunk cost magnitude, positive decision frame (HP); 4) low sunk cost magnitude, negative decision frame (LN); 5) medium sunk cost magnitude, negative decision frame (MN); and 6) high sunk cost magnitude, negative decision frame (HN). Sunk cost magnitudes (low/medium/high), and decision frames (positive/negative) were experimentally manipulated. As such, a single decision scenario, adapted for use in each of the appropriate conditions, was used for all participants.

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Differences were based on the aforementioned variables and participant assignment to the six levels across the two variables. This paradigm reflects extant research on sunk costs and escalation of commitment (Roth, Robbert, & Straus, 2015). It also replicates and extends the research paradigm used to examine non-monetary accumulation in sunk cost frames (Steinman & Jacobs, 2018). In each condition, participants were asked to read a fabricated scenario involving frequent flyer points with a fictional airline. This scenario was uniform for all participants, except for the aspects of the aforementioned manipulated variables, to eliminate confounds. A manipulation check revealed that participants viewed the materials to have pragmatic realism; in addition, reliability and validity were established. The fictional scenario provided pertinent information about the airline's recent news events (this provided a framework for the brand as a well-known carrier), a brief history of the airline (this provided a framework for the brand as reputable), a description of the consumer's investment in the airline (this provided a framework for the traveler's lifetime monetary commitment), information about the airline's traveler incentives (this provided a framework for the airline's rewards program), and information about other potential options for the consumer (providing a framework for typical alternatives as it pertains to consumers and brands).

After random assignment to one of the six conditions, participants were then asked to complete a series of consumer attitude, brand relationship, choice, and behavioral intention measures. All participants completed the measures in the same order. The same fictional airline carrier was used in all conditions; the only difference among these six conditions was the description of sunk cost level magnitude and decision frame. Therefore, interactive effect of these variables on subsequent consumer attitudes and behaviors could be examined. At the conclusion of the session, the participants were thanked and debriefed.

RESULTS

Factorial analyses of variance (ANOVA) were performed to examine differences among the following six conditions: 1) low sunk cost magnitude, positive decision frame (LP); 2) medium sunk cost magnitude, positive decision frame (MP) 3) high sunk cost magnitude, positive decision frame (HP); 4) low sunk cost magnitude, negative decision frame (LN); 5) medium sunk cost magnitude, negative decision frame (MN); and 6) high sunk cost magnitude, negative decision frame (HN). This allowed the researcher to examine the interactive effect of sunk cost level and decision frame. Main effect analyses were also utilized to investigate the effect of sunk cost magnitude and decision frame as individual variables, respectively. In addition, logistic regressions were used to predict consumer choice and future behavior among the six conditions.

For the composite measure assessing prospective consumer choice, there were differences when comparing the conditions for participants. Participants assigned to the high sunk cost magnitude, positive decision frame (HP) were less likely to leave the brand compared to those assigned to the low sunk cost magnitude, positive decision frame (LP). The opposite pattern emerged for the comparison between high sunk cost magnitude, negative decision frame (HN) and low sunk cost magnitude, negative decision frame (HN) conditions. In addition, differences were found for the comparison among the high sunk cost magnitude, positive decision frame (HP), low sunk cost magnitude, positive decision frame (LP), and high sunk cost magnitude, negative decision frame

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(HN) conditions. However, there were no differences found when examining the medium sunk cost magnitude conditions, both positive and negative decision frames, to the high sunk cost magnitude conditions.

For the composite measure assessing consumer-brand relationship, there were differences when comparing the conditions for participants. Participants assigned to the high sunk cost magnitude, positive decision frame (HP) reported attitudes consistent with a strong consumer-brand relationship compared to those assigned to the low sunk cost magnitude, positive decision frame (LP). The opposite pattern emerged for the comparison between high sunk cost magnitude, negative decision frame (HN) and low sunk cost magnitude, negative decision frame (HN) conditions. In addition, differences were found for the comparison among the high sunk cost magnitude, positive decision frame (HP), low sunk cost magnitude, positive decision frame (LP), and high sunk cost magnitude, negative decision frame (HN) conditions. However, there were no differences found when examining the medium sunk cost magnitude conditions, both positive and negative decision frames, to the high sunk cost magnitude conditions.

For the composite measure assessing broad-based consumer attitudes toward the brand, there were differences when comparing the conditions for participants. The same pattern emerged as noted above for consumer choice and consumer-brand relationship outcome variables. More specifically, participants assigned to the high sunk cost magnitude, positive decision frame (HP) were less likely to leave the brand based on broad-based attitudinal measures compared to those assigned to the low sunk cost magnitude, positive decision frame (LP). Once again, the opposite pattern emerged when comparing the high sunk cost magnitude, negative decision frame (HN) and low sunk cost magnitude, negative decision frame (HN) conditions. Moreover, differences were found for the comparison among the high sunk cost magnitude, positive decision frame (HP), low sunk cost magnitude, positive decision frame (LP), and high sunk cost magnitude, negative decision frame (HN) conditions, respectively. However, no significant differences were found when examining the medium sunk cost magnitude conditions, both positive and negative decision frames, to the high sunk cost magnitude conditions.

Overall, the findings were replicated across the various dependent measures used to directly compare the effect of the following six experimental conditions of: 1) low sunk cost magnitude, positive decision frame (LP); 2) medium sunk cost magnitude, positive decision frame (MP) 3) high sunk cost magnitude, positive decision frame (HP); 4) low sunk cost magnitude, negative decision frame (LN); 5) medium sunk cost magnitude, negative decision frame (MN); and 6) high sunk cost magnitude, negative decision frame (HN). This provided support that there was an interactive effect when examining sunk cost magnitude and decision frame on consumer decision making.

DISCUSSION

A major finding from this research was that participants in the high sunk cost magnitude, positive decision frame (HP) condition were less likely to leave the brand as measured by the composite prospective choice outcome variable in comparison to those in the low sunk cost magnitude, positive decision frame (LP) condition. Differences also occurred when comparing

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the high sunk cost magnitude, negative decision frame (HN) and low sunk cost magnitude, negative decision frame (LN) conditions. Temporally based non-monetary redemption alternatives were utilized to highlight potential differences across decision frames in a sunk cost context where financial aspects were diminished. Strictly rational consumer decision makers would eschew the sunk cost, regardless of decision frame, and be more likely to leave the brand in pursuit of a better opportunity. Conversely, the results of this research suggest that this did not occur. It can be implied from this research that consumers are using ineffective cognitive tools in their decision making.

A secondary finding was that interactive effects were found when examining the six levels across the manipulated variables of sunk cost magnitude and decision frame. This provides support that individuals did not evaluate sunk cost levels proportionately to the valence of the presented decision frame (Steinman, 2018). A pattern was observed among the high sunk cost magnitude, positive decision frame (HP), low sunk cost magnitude, positive decision frame (LP), and high sunk cost magnitude, negative decision frame (HN) conditions whereby the sunk cost effect was magnified or diminished depending on the valence of the decision frame. From these findings, it appears that positive decision frames might have the ability to reduce consumer deflection to a competitor. However, in negative decision frame scenarios, even with high sunk cost magnitudes, consumers might exit the brand. In effect, they are leaving their temporal, non-monetary loyalty rewards, ones that they most likely spent many years accumulating, because of a negative interaction with the brand. This also provides support that mitigating negatively oriented decision frames is important for marketers in their attempt to preserve a strong consumer-brand relationship. In some cases, it might be expensive for brands as they attempt to retain their consumers when there are product or service failures. However, a short-term monetary loss is more beneficial that sacrificing the lifetime value of consumers.

Overall, these results provide support for the sunk cost effect as it pertains to positive versus negative decision making frames. Although the sunk cost effect in the decision making literature is widely discussed, research is still fragmented (Roth, Robbert, & Straus, 2015). This research was an attempt to examine sunk costs using a non-monetary but important consumer outcome variable. In particular, this research finds support for the idea that the sunk-cost effect is impacted by the valence of the decision frame presented to consumers. As noted, participants in high sunk cost magnitude conditions viewed the brand in less favorable terms but they were less likely to leave the brand even though their perceptions of the brand might have changed. The sunk cost effect was attenuated when the messaging from the brand was positive. However, this was not the case when the decision frame was more pejorative in presentation. This an interesting dilemma for consumers, one they might encounter in a real-world marketing environment. For example, in this research participants could have decided that redemption of their frequent flyer miles was no longer important. However, it can be concluded that the decision frame in conjunction with the temporal aspect of accumulation is a key reason for their reluctance to leave their brand. Maintenance and prolongation of their original consumer choice was a focal point even when other cognitive factors were taken into account.

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As is often the case with self-report research, a primary limitation of this factorial experiment is that it did not include an actual behavioral outcome variable. Hypothetical decision making scenarios were utilized. Although one can extrapolate from the findings, there are often differences between what participants report and actual behavior. The researcher emulated marketing realism by using accurate and representative fictional scenarios, ones that consumers might face in their daily lives. Accumulation of temporal non-monetary rewards in airline industry is one such situation. However, participants did not surrender their own, earned airline rewards; as such, this could have changed their decision making. These outcomes are often used in consumer decision making research studies due to pragmatic and logistic challenges in capturing true consumer behavior as it occurs in real-time situations. Future research in this area attempt to replicate and extend the findings of this experimental research by using similar sunk cost magnitude scenarios. This will enhance the generalizability of the results, even if measurement of actual behavior variables remains an ongoing issue. In general, there are many opportunities for application, for both marketers and consumers, in temporal, non-monetary reward settings in travel, hospitality management, and other overlapping industries. Research in this area will continue to increase our understanding of utilization decisions that play a role in the sunk cost effect.

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