

Regret, Consistency, and Choice

An Opportunity × Mitigation Framework

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In a classic experiment by Brehm (1956), female college students rated their liking for a series of household appliances and were then given an opportunity to select one of the two rated items to take home as a gift. Intriguingly, a second round of ratings indicated that participants had enhanced their liking of the appliance they selected and diminished their rating of the item they did not select. This “spreading of alternatives” phenomenon was explained in terms of cognitive dissonance (e.g., Festinger, 1957): When selecting between two options, there are attributes of the rejected option that one may find appealing and the recognition of such positive attributes (i.e., “There are things I liked about B”) is dissonant with having chosen the other option (i.e., “I chose A”). In addition to thoughts about the chosen option, however, it is also likely that such decisions evoke regret to the extent that one explicitly compares the chosen option to the rejected option (Zeelenberg & Pieters, 2007). Although cognitive dissonance theorists considered regret (e.g., Brehm & Wicklund, 1970; Festinger & Walster, 1964), they tended to conceptualize it as being merely the reversal of the initial decision. As Zeelenberg (1999a) noted, however, “Present regret research views it (reversal) as a consequence of regret and shows that regret is more than just that” (p. 103).

Over time, research programs focusing on the processes that underlie

it that the present literature only between regret and consistency- & Chen, 1995; Roese & Summer- r is to reestablish the connection e context of a theory that exam- r interact to enhance or diminish ich includes both perceptions of ices and future opportunities to *mitigation*, which is the ability to gulatory processes that allow for oth opportunity and mitigation may interact to elicit differential

IT: A CONUNDRUM

igh the regret and cognitive dis- *opportunity principle*. As defined perceived by individuals as "an ction in the service of correction, Provocatively, the crux of their breeds regret, and that feelings strongest precisely under those action are clearest. Under condi- es of cognitive dissonance reduc- work to mitigate the experience untunity, on the other hand, regret ial advantage of spurring further eelenberg & Pieters, 2004). ummerville (2005) described two eriment by Markman, Gavanski, participants played a computer- l to ensure a tie with the dealer. elieved that they would be play- eatable/high opportunity) gener- uld have won") to downward ("I rison to those who believed they eatable/low opportunity), and as r conditions of high opportunity ert and Ebert (2002). Participants aphy class were allowed to select antly, this decision was reversible

for some (i.e., they could change their mind and keep a different photo) but irreversible for others. According to Gilbert and Ebert's analysis, irreversible decisions activated the psychological immune system (e.g., dissonance reduction, emotion regulation) and thereby elevated decision satisfaction. For reversible decisions, however, Roese and Summerville (2005) noted that "the recognition of opportunity for further rectification interfered with dissonance reduction, resulting in reduced satisfaction" (p. 1274). Roese and Summerville argued that both of these key studies are consistent with a general principle that regret persists in those situations that provide opportunities for change. Indeed, such regrets "are the ones that remain to haunt people further" (p. 1275).

Although Roese and Summerville (2005) presented an intriguing argument, there remain two difficulties with the data they offered in support of it. First, neither of these key studies included a measure of regret. Second, their own original studies either inferred rather than measured opportunity, or confounded opportunity with controllability and difficulty, rendering the interpretation of their results ambiguous. In an attempt to clarify the nature of the relationship between regret and opportunity, Beike, Markman, and Karadogan (2009) experimentally manipulated perceived opportunity in two separate studies. One study employed a vignette about a hypothetical individual, and a second study asked participants to recall their own negative life events. In both studies, participants who considered nonrepeatable negative events reported feeling more regret than did those who considered repeatable negative events, findings that clearly run contrary to Roese and Summerville's (2005) framework.

Regret and Consistency Seeking

To understand the discrepancy between Roese and Summerville's (2005) conceptualization and the results obtained by Beike et al. (2009), let us return to the former's analysis of the Gilbert and Ebert (2002) study, in which they interpreted Gilbert and Ebert's results to mean that making a nonbinding choice gives rise to a perception of future opportunity to improve, thereby lessening the need to reduce cognitive dissonance and intensifying regret. There is a temporal aspect to perceived opportunity, however, that their analysis neglects. Although participants given a nonbinding choice may perceive a good deal of opportunity before they make their choice, once the choice is made they may actually perceive limited opportunities to improve their lot. In fact, a closer look at the data reveals that only *one* participant in Gilbert and Ebert's nonbinding choice condition actually changed his or her choice, despite being provided the opportunity to do so. As consistency theorists have long argued and demonstrated, even the most tentative of steps taken toward making a choice commit individuals to that course of action and render them unwilling to change later (e.g., Cialdini, Cacioppo, Bassett,

& Miller, 1978; Simon & Holyoak, 2002). By the time measures of satisfaction are administered, participants may perceive the opportunity for change as lost. Thus, choice reversibility may enhance dissatisfaction not because an opportunity for corrective action is perceived to exist in the future, but because regret is felt over not having exercised the opportunity to take corrective steps in the past.

Preoutcome Regret

To support the argument just described, however, it is useful to demonstrate that individuals experience regret *after* they make a decision, but *before* the outcome of their decision has occurred (i.e., *preoutcome* regret); that is, following the passage of time, people may often perceive nonbinding choices as lost opportunities.

According to Kirkebøen and Teigen (in press), real-life decisions (e.g., promises, plans, agreements) involve a time interval between when the decision is made and the outcome is revealed. Interestingly, individuals may commit themselves to a task (e.g., promising to help a friend finish his basement) or performance decision (e.g., giving a speech at a wedding), only to realize later that, upon closer introspection, the task or performance to which they have committed themselves is likely to be stressful or demanding and presents an uncertain outcome. Across three scenario studies and an online economic game, preoutcome regret was often *stronger* than postoutcome regret, and typically increased during the preoutcome period. According to Kirkebøen and Teigen's model, the decision process begins when one first starts to deliberate upon a particular option, and this process continues until it is no longer possible (pragmatically) to change one's mind and reverse the decision. Consistent with Roesse and Summerville's (2005) perspective, the function of preoutcome regret may be to motivate the decision maker to reconsider the ongoing decision process and reverse the initial decision.

Kirkebøen and Teigen's (in press) analysis, of course, begs the question of whether individuals actually do elect to reverse decisions they are beginning to regret. Although it is certainly possible that people can and do, the compliance, dissonance, and judgment and decision-making literatures are replete with demonstrations of how people, once committed to a given choice or decision, elect not to reverse themselves. Indeed, people's resistance to changing their minds has been empirically revealed through studies of sunk costs (Arkes & Blumer, 1985), inaction inertia (Tykocinski & Pittman, 1998), and confirmatory hypothesis testing (Nickerson, 1998). In one particularly illustrative example, Comer and Laird (1975) found that a significant number of participants remained committed to their initial (subtly coerced) decision to eat a worm, even when they were given an opportunity to change their minds about eating it! In the face of intensifying preoutcome regret, then, what allows people to continue down the same path, eventually crossing the point of no return?

Preference Construction

Arguably, choice commitment in by a countervailing tendency that phase, namely, coherence shifting theories, an important element in construction (e.g., Janis & Mann). The basic premise of these theories is that decisions are possible when one of its rivals, thereby necessitating changing the initial preferences (e.g., Holyoak, and colleagues (e.g., S Bleicher, & Holyoak, 2008; Simon). The processes involved in preference terms of models of constraint satisfaction (McClelland & Rumelhart, 1981); they suggest that coherence is elicited "in which evaluations of attributes influenced by it in return, result in alternatives" (Simon et al., 2008,

In one illustrative study, Sir preferences for a variety of attributes job offers (e.g., salary, length of contract) two attractive job offers that correlated which they had earlier stated their completion of the task, participants' preferences for the various job attributes set of ratings had shifted toward decision, meaning that ratings of the increased in strength and ratings versa for the attributes of the result that an important reason individuals choices in the face of intense pressure (in press) is because processes of shifting maintain confidence in agreeing to give the wedding speech people will remember it and pay if it goes well").

It should be noted, however, the predecisional phase tend to by Simon et al. (2008) demonstrating effect but also that these changes (Experiment 1), and even without seem to suggest that decision makers regret over and over again, even

by the time measures of satisfaction receive the opportunity for change and perceive dissatisfaction not because they perceived to exist in the future, but because they missed the opportunity to take cor-

However, it is useful to demonstrate why people make a decision, but *before* the decision (e.g., *preoutcome* regret); that is, people often perceive nonbinding choices

(in press), real-life decisions (e.g., decisions made in a brief interval between when the decision is made and when the decision is implemented). Interestingly, individuals may be motivated to help a friend finish his base-
giving a speech at a wedding), only to find that the task or performance to which they committed to be stressful or demanding and regretful. In scenario studies and an online experiment, the regret was often *stronger* than postoutcome regret during the preoutcome period. According to the research process begins when one first makes a decision, and this process continues until one changes one's mind and reverse the decision. From Lammert's (2005) perspective, regret can motivate the decision maker to reconsider and reverse the initial decision.

Analysis, of course, begs the question: How do people reverse decisions they are committed to? It is possible that people can and do, and decision-making literatures suggest that people, once committed to a given course of action, resist themselves. Indeed, people's resistance to change is empirically revealed through studies on inertia (Tykocinski & Pittman, 2000; Nickerson, 1998). In one particular study, Lammert (1975) found that a significant number of people did not reverse their initial (subtly coerced) decision when given an opportunity to change their mind. In intensifying preoutcome regret, people take the same path, eventually cross-

Preference Construction

Arguably, choice commitment in the face of preoutcome regret is maintained by a countervailing tendency that is often exhibited during the predecisional phase, namely, coherence shifting. According to a number of decision-making theories, an important element to solving decisional conflict is preference construction (e.g., Janis & Mann, 1977; Montgomery, 1983; Svenson, 1992). The basic premise of these theories is that confident and justifiable decisions are possible when one of the decision alternatives becomes superior to its rivals, thereby necessitating the "spreading apart" of alternatives by changing the initial preferences of the decision's attributes. Recently, Simon, Holyoak, and colleagues (e.g., Simon & Holyoak, 2002; Simon, Krawczyk, Bleicher, & Holyoak, 2008; Simon, Krawczyk, & Holyoak, 2004) formalized the processes involved in preference construction and coherence shifting in terms of models of constraint satisfaction (e.g., Holyoak & Thagard, 1989; McClelland & Rumelhart, 1981; Read & Miller, 1994). In brief, such models suggest that coherence is elicited by means of a bidirectional process "in which evaluations of attributes influence the emerging decision and are influenced by it in return, resulting in a gradual spreading apart of choice alternatives" (Simon et al., 2008, p. 10).

In one illustrative study, Simon et al. (2004) had participants rate their preferences for a variety of attributes that could be useful in deciding between job offers (e.g., salary, length of commute). Next, participants chose between two attractive job offers that contained some of the previous attributes for which they had earlier stated their preferences. Finally, at some point prior to completion of the task, participants were asked to rate once again their preferences for the various job attributes. According to the results, the second set of ratings had shifted toward providing support for the emerging decision, meaning that ratings of the positive attributes of the chosen alternative increased in strength and ratings of negative attributes diminished, and vice versa for the attributes of the rejected offer. It is useful to speculate, then, that an important reason individuals commit themselves to nonbinding choices in the face of intense preoutcome regret (e.g., Kirkebøen & Teigen, in press) is because processes of preference construction and coherence shifting maintain confidence in the chosen course of action (e.g., "I regret agreeing to give the wedding speech, but I'm going to do it anyway, because people will remember it and pay me compliments for the rest of the evening if it goes well").

It should be noted, however, that the preferences constructed during the predecisional phase tend to be rather transient. A recent set of studies by Simon et al. (2008) demonstrated not only the typical preference shifting effect but also that these changes receded back to baseline after 1 week (Experiment 1), and even within 15 minutes (Experiment 2). This would seem to suggest that decision makers are vulnerable to experiencing decision regret over and over again, even for the same types of decisions, because the

preference construction process needs to reboot each time in order to justify the choice commitment.

Indeed, even in the longer term, such preference construction regarding regrettable outcomes may serve only to intensify regret further. According to the selective accessibility model (Mussweiler, 2003), when a comparison is made between two items, such as a chosen and unchosen option, an initial quick screening is conducted to determine whether the two are overall similar or dissimilar. If the two items are deemed fairly similar (e.g., they belong to the same category), then information about the target item that is consistent with the other item becomes accessible and is used as the basis for judgment. If, on the other hand, the two items are deemed fairly dissimilar (e.g., they belong to different categories), then information about the target item that is inconsistent with the other item becomes accessible instead. In the case of a regretted decision, the choice one has made is the target, and the unchosen alternative, the standard. Having to choose forces one to engage in dissimilarity rather than similarity processing, thereby making distinct features of the two items accessible. In the aftermath of a decision with an unhappy outcome, decision makers likely look back on their choices to determine what went wrong. Why did the chosen option lead to such unhappiness? Continued dissimilarity processing is therefore likely, which will make accessible the unique (better) attributes of the unchosen option, and the glorious life one could have had if only one had chosen it in the past.

The Lost Opportunity Principle

In the preceding sections, we have provided arguments supporting our notion that choice reversibility may enhance dissatisfaction not because an opportunity for corrective action is perceived to exist in the future, but because regret is felt over not having exercised the opportunity to take corrective steps in the past (e.g., Gilbert & Ebert, 2002). Because the temporal nature of opportunity appears to be critical to the experience of regret, we now draw a distinction between *past opportunities* and *future opportunities*. In contrast to Roese and Summerville's (2005) future opportunity principle, Beike et al. (2009) argued that it is really perceptions of missed or *lost opportunities* that play a more pivotal role in accounting for the experience of regret. Beike et al. defined a *lost opportunity* as an undesired outcome that could have been avoided or prevented at the time of its occurrence (high past opportunity) but can no longer be remedied at the present time (low future opportunity). Thus, intense regrets are brought about by inconsistencies between how much opportunity is perceived to have existed in the past, and how little opportunity is perceived to exist in the future. The *lost opportunity principle* stresses that regret requires not only the recognition of a better foregone option (or imagined foregone option) but, critically, the subjective sense that one had ample opportunity to make a different choice in the past

(but did not), and yet future opportunities closed.

For example, Roese and Summerville's surveys of life regrets showed that education was a domain that had the greatest potential for change ("I wish I had spent more time in education throughout life.... You can always go back to school. Education is the most commonly regretted domain among adults surveyed (e.g., Hattiangadi & Karoly, 1994; Wrosch & Heckhausen, 2003). Whereas Roese and Summerville (2005) argued that people regret not having taken advantage of opportunities to take corrective action, Beike et al. (2009) argued that people feel regret *not* because they perceive the past as a lost opportunity, but because they can not argue that such regrets might have been avoided by continuing education classes, which would have provided people with more opportunities to take corrective action.

Beike et al. (2009) moved beyond the future opportunity principle that provide empirical support for the future opportunity principle. In a study of people aged from 40 to 73 were asked to rate their regret about not having taken advantage of opportunities to take corrective action in each of the 12 life domains. Beike et al. (2005) meta-analysis. If Roese and Summerville's (2005) argument that education is a domain in which people regret not having taken advantage of future opportunities, then education should have the highest opportunity ratings. However, Beike et al. (2009) found that education was perceived as offering the lowest opportunity for future improvement, and that education appears to be the most regretted domain because it represents a lost opportunity.

MITIGATING

Regret and Dissonance

Cognitive dissonance theorists argue that regret arises from a comparison between a chosen and unchosen option (e.g., Festinger, 1957; Brehm, 1976), and that a spread of effort is used to attempt to justify the decision. Likewise, regret has been theorized to be a result of what did happen and what could have happened.

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(but did not), and yet future opportunities to rectify the choice are now fore-closed.

For example, Roese and Summerville's (2005) meta-analysis of existing surveys of life regrets showed that the life domain regretted most frequently was education, a domain that Roese and Summerville alleged to offer the greatest potential for change ("Education is open to continual modification throughout life... You can always go back to school"; p. 1274). Critically, education is the most commonly regretted life domain, even among the oldest adults surveyed (e.g., Hattiangadi, Medvec, & Gilovich, 1995; Lecci, Okun, & Karoly, 1994; Wrosch & Heckhausen, 2002). Clearly, however, 70-year-olds lack the opportunities available to 18-year-olds to advance their education. Whereas Roese and Summerville (2005) argued that older adults feel regret about failing to take advantage of educational opportunities *because* they will have opportunities to take corrective action in the future, we argue that older adults feel regret *not* because they are looking toward the future, but because they perceive the past as a lost opportunity. Although we certainly would not argue that such regrets might spur older adults to take advantage of continuing education classes, we do take issue with the premise that older people feel regret *because* they perceive future opportunities.

Beike et al. (2009) moved beyond speculation and instead collected data that provide empirical support for this argument. In one study, adults ranging in age from 40 to 73 were asked to indicate the extent to which they felt that they would have future opportunities to better or improve themselves in each of the 12 life domains identified in Roese and Summerville's (2005) meta-analysis. If Roese and Summerville were correct in assuming that education is a domain in which individuals see high opportunities for future improvement, then education should come out near the top in terms of opportunity ratings. However, the data indicated exactly the opposite. Whereas domains such as spirituality and self were perceived as offering the highest opportunity for future improvement, career and education were perceived as offering the lowest opportunity for future improvement. Thus, education appears to be the most frequently regretted life domain precisely because it represents a lost opportunity.

MITIGATION AND REGRET

Regret and Dissonance

Cognitive dissonance theorists have long conceptualized postdecisional dissonance as arising from a comparison between the attributes of the chosen and unchosen option (e.g., Brehm, 1956; Festinger, 1964; Wicklund & Brehm, 1976), and that a spreading of alternatives subsequently occurs in an attempt to justify the decision and thereby mitigate feelings of dissonance. Likewise, regret has been theorized to arise from a comparison between what did happen and what could have happened (e.g., Gilovich & Med-

vec, 1995; Kahneman & Tversky, 1982; Roese, 1997). Thus, from the perspective of postdecisional dissonance, regret should arise to the extent that the unchosen option looks superior to the chosen option, and spreading of alternatives may be an attempt to mitigate feelings of regret. Indeed, Roese and Summerville (2005) argued that regret occurs when individuals fail to reduce their dissonance, suggesting an intimate relationship between the two phenomena.

However, dissonance and regret are not one and the same. Whereas dissonance theory postulates that *dissonance* is evoked by an inconsistency between the choice one made and the perception that the other choice might have been better, the present conceptualization postulates that regret arises from a different type of inconsistency, namely, an inconsistency between perceptions of past opportunity and future opportunity. In other words, for regret to be evoked, it is critical that something better really had the opportunity to happen in the past, yet no longer has the opportunity to happen in the future. For regret to occur, individuals need to feel that they really were considering or debating between two or more options, and that they had an opportunity to make a different choice. Dissonance theory, on the other hand, is surprisingly silent on this point. In the typical free-choice paradigm (FCP; Brehm, 1956; see Chen & Risen [2010] and Risen & Chen [2010] for a systematic review and criticism of the FCP), participants rank a series of items and then are asked whether they would like to take, for example, either their fifth- or sixth-ranked item home with them. Spreading of alternatives is typically observed following the choice. Importantly, however, although dissonance theory requires that individuals feel that they have freely *made* a choice in order to experience dissonance in the FCP (e.g., Festinger, 1957), little or no attention has been paid to whether participants really considered both options. To the extent that participants did *not* find the unchosen option to be particularly desirable, it is difficult to understand why dissonance would be evoked. Indeed, in such cases the subsequently observed spreading of alternatives phenomenon may really be a function of preference construction and coherence shifting, or of postoutcome searching for reasons why one is unhappy, as discussed earlier.

Opportunity and Mitigation

We tentatively refer to our conceptualization of regret as the opportunity \times mitigation framework ($O \times M$). According to the $O \times M$, two parallel processes influence regret. One process involves a judgment of future relative to past opportunity (i.e., the "bindingness" of a choice, the "lostness" of an opportunity). The other process involves the success of efforts directed toward ameliorating or mitigating feelings of regret and dissatisfaction about the choice (Connolly & Zeelenberg, 2002; Inman & Zeelenberg, 2002; Zeelenberg & Pieters, 2007). Moreover, the two processes are often independent. The mere absence of future opportunity may or may not lead to successful justifi-

cation. Rather, successful justification of the options involved in the choice.

Roese and Summerville (2005) argued that there may be greater effort in making decisions that are binding, and Roese (1984) did in fact demonstrate that regret decreases over time when decisions are irreversible. In a study where decisions participants are asked to justify, they sense that the items have been perceived as of limited relevance for the self (e.g., "I ranked sixth").

For small regrettable decisions, individuals are adept at engaging in justification and mitigation of regret that may have been produced. For example, a participant who will match the color of the couch ("I ranked sixth"). On the other hand, for large decisions (e.g., marriage, childbearing, career, etc.), the difficulty of formulating adequate justification often leads to a failure to ameliorate their regret. In the context of the FCP, choices made are often and incomparable in a way that makes it difficult for other means of justifying the decision. The choice was simply neither evident nor was it evident that it was evident but the choice (Gilovich & Medvec, 1995) is an equivalent number of positive alternatives to make the right choice. In such cases, the choice undermines subsequent attempts at mitigation.

To illustrate, consider the all-time regret of a teenager who engages in unprotected sex where abortion is not an option. The teenager regrets the choice through spreading of alternative options (e.g., waiting and birth control) so strongly that she made the right choice. The choice was simply neither evident nor was it evident that it was evident but the choice (Gilovich & Medvec, 1995) is an equivalent number of positive alternatives to make the right choice. In such cases, the choice undermines subsequent attempts at mitigation.

Figure 15.1 depicts our two-process model of regret experiences of varying levels of regret. The analysis technically includes three components: opportunity needs to be high in or

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Roese and Summerville (2005) and Gilbert and Ebert (2002) have argued
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 (1984) did in fact demonstrate that spreading apart of alternatives tends to
 decrease over time when decisions are reversible, but tends to increase over
 time when decisions are irreversible. It should be noted, however, that the
 decisions participants are asked to make in the typical FCP are small, in the
 sense that the items have been pretested to be about equal in desirability, and
 of limited relevance for the self (e.g., record albums, photographs, posters).

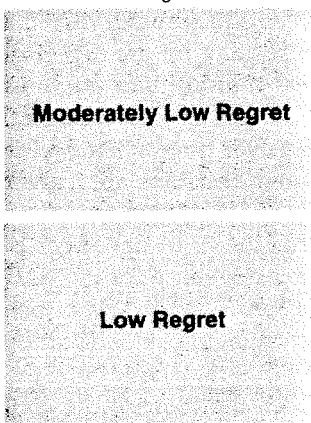
For small regrettable decisions such as these, people are probably quite
 adept at engaging in justification processes that ameliorate any small amount
 of regret that may have been produced (e.g., "The poster I ranked fifth really
 will match the color of the couch in my dorm room better than the poster
 I ranked sixth"). On the other hand, for large regrettable decisions such as
 marriage, childbearing, career, and educational choices, people may have
 difficulty formulating adequate justifications for their decisions and thereby
 fail to ameliorate their regret. In contrast to studies that employ some ver-
 sion of the FCP, choices made in the real world are often quite disparate
 and incomparable in a way that makes spreading of alternatives or some
 other means of justifying the decision impossible. It may be that the better
 choice was simply neither evident nor foreseeable at the time the decision
 was made, that it was evident but the individual lacked the courage to make
 the choice (Gilovich & Medvec, 1995), or that each alternative had a nearly
 equivalent number of positive and negative attributes that made it difficult
 to make the right choice. In such cases, the disparate nature of the choice
 undermines subsequent attempts to mitigate regret.

To illustrate, consider the all-too-familiar scenario of an unmarried teen-
 ager who engages in unprotected sex, resulting in an unplanned pregnancy
 where abortion is not an option. In order to mitigate dissonance and regret
 through spreading of alternatives, she would have to believe even more
 strongly that she made the right choice at the time (i.e., having unprotected
 sex), and that waiting to have sex later or employing birth control was a very
 undesirable option. It would seem difficult to construct such justifications.
 Later on, the mother's love for the child may enable her to mitigate some of
 her regret, but the fact remains that it is difficult to raise a child as an unwed
 teenager, and she will never be able to escape the fact that her initial decision
 to have unprotected sex at an earlier age was ill-advised. Her other options at
 the time (i.e., waiting and birth control) had more unique positive features.

Figure 15.1 depicts our two-dimensional analysis ($O \times M$) of how (per-
 ceived) future opportunity and ability to mitigate regret interact to elicit
 regret experiences of varying levels of intensity. It should be noted that our
 analysis technically includes three dimensions given that perceived past
 opportunity needs to be high in order to elicit regret (i.e., little or no regret is

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ework. All cases represent high past

Thus, the 2x2 analysis depicted conditions of high past opportunity. The combination of high future opportunity (lower right-hand quadrant) should elicit low regret, as perceived future opportunities and goal achievement, and such hope (Snyder, 2002) and diminished to the extent that one's decisions elicit feelings of regret should be further reduced with low future opportunity (upper left-hand quadrant) should elicit higher regret when people feel that they could not now perceive limited opportunities. Although Roese and Summerville and other emotion regulation conditions, Beike et al. (2009) showed that more regret than do repeatable events should intensify still further if it has a "silver lining" (i.e., engage in psychological repair work, 1995) in the choice. When future opportunity but high ability to mitigate regret should experience moderately low levels of regret, individuals in the past processes at their disposal that

can help justify the decision and/or deflect responsibility from the self. In addition to spreading alternatives and finding a silver lining, individuals can deny outcome foreseeability (e.g., "I couldn't have known that the economy was going to tank"; Markman & Tetlock, 2000), or engage in retroactive pessimism and deny that any other alternative outcome was possible (e.g., "It wouldn't have mattered what I did, the outcome would have been the same"; Tykocinski, 2001; Tykocinski, Pick, & Kedmi, 2002; Tykocinski & Steinberg, 2005; see also McCloy & Byrne, 2002).

Finally, conditions of high future opportunity but low ability to mitigate (lower left-hand quadrant) should elicit moderately high levels of regret. In essence, individuals know that they have made poor choices or decisions in the past, and there is little they can do to justify those choices or decisions, but there are opportunities to take corrective steps toward making better decisions in similar situations in the future. Consistent with Roese and Summerville's (2005) formulation, these are the conditions under which we believe that regret is most likely to motivate corrective action (Inman & Zeelenberg, 2002; Zeelenberg, 1999b). For instance, after buying a product that turns out to be dissatisfying, regret can motivate individuals to ask for their money back, or to switch to another supplier of services or product the next time around (Ratner & Herbst, 2005; Zeelenberg & Pieters, 2004; Zeelenberg, van der Pligt, & Manstead, 1998).

Mitigation and Psychological Closure

To address the question of how decision makers manage their regrets over time, Zeelenberg and Pieters (2007) proposed a series of regret regulation strategies that are "decision-, alternative-, or feeling-focused, and implemented based on their accessibility and their instrumentality to the current overarching goal" (p. 11). Many of the specific strategies they describe (e.g., decision justification, responsibility denial, spreading of alternatives, psychological repair work) have been alluded to in this chapter. More globally, Beike et al. (2009) suggested that a critical factor in accounting for the intensity of experienced regret is closure, conceptualized as the subjective sense of "pastness" surrounding a remembered life experience, or, the extent to which an event feels "open" as opposed to "closed" (Beike, Adams, & Wirth-Beaumont, 2007; Beike & Wirth-Beaumont, 2005; Skitka, Bauman, & Mullen, 2004). Importantly, low closure is elicited when one's memory for an experience evokes emotions, allowing the past event to feel psychologically unfinished and unresolved (Savitsky, Medvec, & Gilovich, 1997). With regard to regret, Beike et al. (2009) noted that low closure should be associated with increased regret, because low closure renders lost opportunities salient. Beike et al. (Study 3) found that feelings of lack of closure significantly predicted regret intensity ($r = -.38, p < .005$), even after controlling for a host of demographic variables, as well as ratings of disappointment and personal responsibility.

Closure would appear to be an individual's subjective sense that he or she has succeeded (or not succeeded) at mitigating feelings of regret through the regulation strategies and emotional regulation processes we have described. Thus, is it important for individuals not only to feel that they have the ability to mitigate their feelings of regret, but also that they have successfully done so. This subjective sense of success (or failure) at mitigation yields feelings of completeness (or incompleteness) that contribute substantially to the regret experience.

Dissonance Reduction versus Psychological Closure

Dissonance reduction occurs when individuals resolve inconsistencies between their beliefs and their behaviors, resulting in reduced psychological discomfort (Elliot & Devine, 1994). *Psychological closure* occurs when individuals reflect upon a life experience from a more distanced perspective, resulting in reduced emotional reactions to memories of the experience (Beike et al., 2007; Beike & Wirth-Beaumont, 2005). Moreover, psychological closure seems to protect against the unpleasant feelings that can arise from inconsistencies between memories and one's sense of self (Beike & Landoll, 2000). The first few moments following a binding decision would seem ripe for the experience of postdecisional dissonance and is probably the primary source of immediate feelings of regret. However, the psychological immune system will diminish the immediate surge of regret fairly quickly (Gilbert, Morewedge, Risen, & Wilson, 2004; Gilbert, Pinel, Wilson, Blumberg, & Wheatley, 1998). Indeed, Roese and Summerville (2005) argued precisely this when they suggested that individuals should experience less regret in low-opportunity domains. Where our lost opportunity principle and their future opportunity principle diverge, however, is that our formulation recognizes that the experience of regret *may recur* when individuals reflect on a decision that led to an undesired outcome months or perhaps years later. We argue that at that temporally distant point, dissonance reduction efforts take a backseat to mitigation and emotion regulation mechanisms that occur during reflection, and give rise to more versus fewer feelings of closure that moderate the intensity of experienced regret.

Consistent with our O × M framework, in Beike et al.'s (2009) Study 3, a survey of adults' greatest life regrets, perceived future opportunity and successful mitigation (closure) were indeed independent ($[r(146) = .06]$). Moreover, the most intense regret was experienced by those who perceived both low opportunity and unsuccessful mitigation ($M = 6.1$ on a 1- to 7-point scale); the least intense regret was experienced by those who perceived both high opportunity and successful mitigation ($M = 5.4$); and moderate levels of regret were experienced by those who perceived either low opportunity or unsuccessful mitigation (both M 's = 5.9). In short, opportunity and mitigation exerted independent main effects on regret intensity as predicted.

ACTION:

We now use our O × M framework to explore the literature: the asymmetry between "regrets of inaction" (or "regrets of anything") and regrets of inaction. A demonstration of this asymmetry involves asking participants to predict who would experience more regret after selling his stock and who would experience more regret after holding onto his stock. The individual who would experience more regret after selling his stock indicated that the individual who would experience more regret after holding onto his stock. This *action effect*, has proven to be fairly robust (Connolly, Ordoñez, & Coughlin, 1990; Landman, 1987).

One of the commonly offered explanations for this *norm theory* (Kahneman & Miller, 1982) is that the response to an event is amplified when the event is a loss because individuals have a tendency to focus on the loss which a different outcome can bring. This is a well-known problem, Kahneman and Miller (1982) argued that it is easier to imagine oneself abstaining from an action than carrying out actions that would have elicited the loss. This is more than regret elicited by maintaining the status quo (Landman, 1987; Miller & Taylor, 1995).

Yet when Gilovich and Miller (1982) asked about their greatest life regrets, regret of inaction was often more than regrets stemming from action. This is a reflection of the inaction effect focus on the status quo over a systematic time course—a temporal asymmetry in the experience of regret when choosing between actions over the long run the maintenance of the status quo.

Over time, a number of processes in the O × M framework work to decrease the intensity of regret taken, and to increase the intensity of regret avoided. Among a multitude of factors, one of the most important is the asymmetry in the extent to which individuals focus on behaviors for poor outcomes than for good outcomes. Specifically, they argued that individuals tend to correct their regrettable actions that have occurred. For instance, when someone regrets that he or she can take corrective steps to avoid the regret. However, when someone fails to take corrective steps to begin a potentially rewarding

lual's subjective sense that he or she ating feelings of regret through the ation processes we have described. uly to feel that they have the ability o that they have successfully done ure) at mitigation yields feelings of ntribute substantially to the regret

Psychological Closure

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ACTIONS AND INACTIONS

We now use our O × M framework to discuss a perennial puzzle in the regret literature: the asymmetry between regrets of action ("I wish I hadn't said anything") and regrets of inaction ("I wish I had spoken up"). In an early demonstration of this asymmetry, Kahneman and Tversky (1982) asked participants to predict who would experience more regret, a person who lost money after selling his stock and buying stock in a different company, or a person who held onto his stock rather than selling. An overwhelming 92% indicated that the individual who lost money after switching his stocks would experience more regret than the individual who lost the same amount of money after deciding to retain his stock. This phenomenon, deemed the *action effect*, has proven to be fairly robust (e.g., Byrne & McEleney, 2000; Connolly, Ordoñez, & Coughlin, 1997; Gilovich et al., 1995; Gleicher et al., 1990; Landman, 1987).

One of the commonly offered explanations for this effect derives from *norm theory* (Kahneman & Miller, 1986), which asserts that one's emotional response to an event is amplified if its causes are deemed to be abnormal, because individuals have a tendency to react more strongly to events for which a different outcome can be easily imagined. With regard to the investor problem, Kahneman and Miller argued that because it is usually easier to imagine oneself abstaining from actions that one has carried out (normal) than carrying out actions that were not in fact performed (abnormal), regret elicited by changing the status quo should be experienced more intensely than regret elicited by maintaining the status quo (Baron & Ritov, 1994; Landman, 1987; Miller & Taylor, 1995; Spranca, Minsk, & Baron, 1991).

Yet when Gilovich and Medvec (1995) asked respondents to indicate their greatest life regrets, regrets stemming from *inactions* were listed more often than regrets stemming from actions. Gilovich and Medvec's explanation for the inaction effect focused on how the experience of regret follows a systematic time course—a temporal pattern of regret. Although individuals experience more regret when changing the status quo in the short run, in the long run the maintenance of the status quo hurts them the most.

Over time, a number of psychological processes consistent with our O × M framework work to decrease the intensity of regrets due to actions taken, and to increase the intensity of regrets due to actions not taken. Among a multitude of factors, Gilovich and Medvec (1995) highlighted an asymmetry in the extent to which individuals can engage in ameliorative behaviors for poor outcomes that result from actions as opposed to inactions. Specifically, they argued that individuals are more likely to take steps to correct their regrettable actions than to correct their regrettable inactions. For instance, when someone regrets the decision to marry a particular individual, he or she can take corrective steps by obtaining a divorce. Conversely, however, when someone fails to take action and thereby misses an opportunity to begin a potentially rewarding long-term relationship, there is little he or

it the individual is no longer available. It is suggested that individuals' memory initially inhibited them from acting in real time, making it difficult for individuals to realize they failed to do something they wanted to do, and therefore to mitigate their regret. Thus, without having a satisfactory closure, regret over inactions is intensified.

shown to apply here as well. For example, it is noted that the amount of regret felt over chosen actions as opposed to inactions to act or not act is with his or her orientation). From the perspective of the present instance, inactions are inconsistently regretted.

It is staying are particularly likely to be regretted. The likelihood that one may learn the "I should have switched/I should have switched, because one may actually have been elected to switch to the wrong choice. According to Kruger, Wirtz, and O'Donoghue (2002), the correct answer to a wrong answer is more likely than failing to change a wrong answer. The more general principle that, inactions are more easily imagined than actions. However, although it would argue that the act of having inaction—seizing defeat from the jaws of defeat because it represents an egregious violation of one's self-verification formulation (Swann, O'Donoghue, Seroussi, & Giesler, 1992; Swann, O'Donoghue, & Seroussi, 1992) is more consistent for consistency and coherence concepts. For this reason, any self-congruent with one's self-concept is a positive tension state that individuals answer to a wrong answer should feel regret, because such behavior undermines one's decision-making capabilities. In line with the regret theory, recent work by Pietschmann (2009) provides theoretical support for this perspective by demonstrating that inconsistency amplifies regret (i.e., to justify), independent of the out-

come variable (i.e., decision type) for choice and Markman (2011) to consider

whether decision type would interact with future opportunity perceptions to yield differential levels of regret. Their study adopted the "Monty Hall paradigm" first employed by Gilovich et al. (1995). Upon arrival at the laboratory, participants were paired with a confederate posing as another student. The pair members were informed that, as a team, they would be playing a game called "Let's Make a Deal." To manipulate future opportunity, half of the participants were told that they would be given a chance to replay the game regardless of the outcome they obtained (*repeatable* condition), whereas the other half were told that they would only be playing the game once (*nonrepeatable* condition).

An experimenter then explained that the pair would choose one of three boxes, two of which contained a card indicating a "modest" prize and one that contained a card indicating a "grand" prize. Based on pilot testing, *modest prizes* contained items such as an Ohio University bumper sticker and mug, and *grand prizes* contained items such as an Ohio University sweatshirt and tickets to a local movie theater. During this initial decision stage, confederates behaved passively and allowed participants to make the selection. Confederates and participants (with chosen box in hand to create a sense of ownership) were then escorted to another laboratory. While the pair entered its demographic information into a computer, another experimenter switched the boxes in the first laboratory to ensure the proper outcome. The pair was then led back to the first laboratory, where an experimenter opened one of the unchosen boxes to reveal a modest prize: an Ohio University mug. The pair was then asked to make a second decision—whether to keep the initially chosen box or to exchange it for the remaining unchosen box. Further, the pair members were told that they had to reach a consensus and would each receive the same modest or grand prize.

The confederate's role was to ensure that the final decision aligned with each participant's randomly assigned decision-type condition—to stay with (*inaction*) or switch from (*action*) the initial choice. The confederate posed questions designed to elicit common intuitions to encourage participants to stay (e.g., "Isn't it 50-50 either way?") or to switch (e.g., "Didn't we have a one chance in three of picking the grand prize initially?"). Once the pair reached an agreement, the participant was directed to open the unchosen, which always contained a grand prize: a card for an Ohio University sweatshirt. Thereafter, the participant opened the chosen box that always contained a modest prize: a card for an Ohio University bumper sticker. After the outcome was revealed, participants rated how much regret they felt about the outcome.

The predictions for regret were as follows. Switching from the best choice to a suboptimal choice represents a consistency violation. Importantly, however, the feedback that participants receive is *informative* with respect to how they should choose in the future (i.e., "Do not repeat the same mistake twice—stick with your first instinct"). Consistent with the lost opportunity principle (Beike et al., 2009), awareness of a second chance (repeatable condi-

because participants feel confident, better choice the next time. On the other hand, if opportunities are unavailable (nonrepeatable), regret is more intense because participants do not believe they can make a better choice in the future. The opportunity to correct a past decision—first—but the opportunity to correct circumstances should heighten decision-making capabilities and result would replicate Gilovich et al. (1995) (regretting a wrong choice) elicits more regret than the absence of any manipulation of

switch), however, Karadogan and Wirth-Beaumont (2005) found that when an undesired outcome occurs, the outcome feedback is important for future choice. Participants probably believe they should choose consistently. However, despite the desire to maintain the status quo, they would have liked to switch. Moreover, participants who chose inaction should be particularly regretful because of the opportunity they should have had to switch. In addition, the negative affect resulting from regret, and resulting from regrettable

findings, depicted in Figure 15.2, suggest that, in this experiment, then, seem to offer support for the opportunity principles. Regret intensity was moderated by the choice from action versus inaction. However, the influence of opportunity on regret is mediated through reduction of

regret and choice, we described in the experience of regret. The

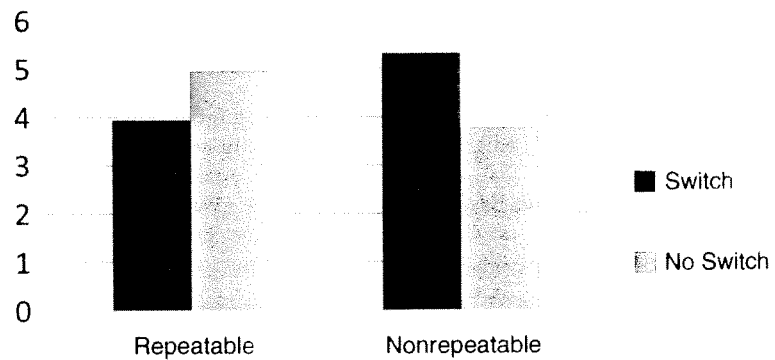


FIGURE 15.2. Regret as a function of opportunity and decision type.

Our research highlights the importance of perceived opportunity, the ability to mitigate negative affect, psychological closure, and actions versus inactions as key determinants and moderators of regret intensity. Furthermore, we suggested that consistency- and coherence-seeking motives are at work during multiple stages of the regret experience—when reality is compared to a more preferable alternative reality, when preoutcome coherence shifts occur, and when justification processes work to mitigate postoutcome dissatisfaction. We hope that our perspective generates research that further enhances our understanding of choice and regret.

REFERENCES

Arkes, H. R., & Blumer, C. (1985). The psychology of sunk costs. *Organizational Behavior and Human Decision Processes*, 35, 124–140.

Baron, J., & Ritov, I. (1994). Reference points and omission bias. *Organizational Behavior and Human Decision Processes*, 59, 475–498.

Beike, D. R., Adams, L. P., & Wirth-Beaumont, E. T. (2007). Incomplete inhibition of emotion in specific autobiographical memories. *Memory*, 15, 375–389.

Beike, D. R., & Landoll, S. L. (2000). Striving for a consistent life story: Cognitive reactions to auto biographical memories. *Social Cognition*, 18, 292–318.

Beike, D. R., Markman, K. D., & Karadogan, F. (2009). What we regret most are lost opportunities: A theory of regret intensity. *Personality and Social Psychology Bulletin*, 35, 385–397.

Beike, D. R., & Wirth-Beaumont, E. T. (2005). Psychological closure as a memory phenomenon. *Memory*, 13, 574–593.

Brehm, J. W. (1956). Post-decision changes in desirability of alternatives. *Journal of Abnormal and Social Psychology*, 52, 384–389.

Brehm, J. W., & Wicklund, R. A. (1970). Regret and dissonance reduction as a function of postdecision salience of dissonant information. *Journal of Personality and Social Psychology*, 14, 1–7.

- Byrne, R. M. J., & McEleney, A. (2000). Counterfactual thinking about actions and failures to act. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, 26, 1318-1331.
- Chen, M. K., & Risen, J. L. (2010). How choice affects and reflects preferences: Revisiting the free-choice paradigm. *Journal of Personality and Social Psychology*, 99, 573-594.
- Cialdini, R. B., Cacioppo, J. T., Bassett, R., & Miller, J. A. (1978). Low-ball procedure for producing compliance: Commitment then cost. *Journal of Personality and Social Psychology*, 36, 463-476.
- Comer, R., & Laird, J. D. (1975). Choosing to suffer as a consequence of expecting to suffer: Why do people do it? *Journal of Personality and Social Psychology*, 32, 92-101.
- Connolly, T., Ordoñez, L. D., & Coughlin, R. (1997). Regret and responsibility in the evaluation of decision outcomes. *Organizational Behavior and Human Decision Processes*, 70, 73-85.
- Connolly, T., & Zeelenberg, M. (2002). Regret in decision making. *Current Directions in Psychological Science*, 11, 212-216.
- Elliot, A. J., & Devine, P. G. (1994). On the motivational nature of cognitive dissonance: Dissonance as psychological discomfort. *Journal of Personality and Social Psychology*, 67, 382-394.
- Festinger, L. (1957). *A theory of cognitive dissonance*. Evanston, IL: Row, Peterson.
- Festinger, L. (1964). *Conflict, decision, and dissonance*. Stanford, CA: Stanford University Press.
- Festinger, L., & Walster, E. (1964). Post-decision regret and decision reversal. In L. Festinger (Ed.), *Conflict, decision, and dissonance* (pp. 100-112). Stanford, CA: Stanford University Press.
- Frey, D., Kumpf, M., Irl, M., & Gniech, G. (1984). Re-evaluation of decision alternatives dependent upon the reversibility of a decision and the passage of time. *European Journal of Social Psychology*, 14, 447-450.
- Gilbert, D. T., & Ebert, J. E. J. (2002). Decisions and revisions: The affective forecasting of changeable outcomes. *Journal of Personality and Social Psychology*, 82, 503-514.
- Gilbert, D. T., Morewedge, C. K., Risen, J. L., & Wilson, T. D. (2004). Looking forward to looking backward: The misprediction of regret. *Psychological Science*, 15, 346-350.
- Gilbert, D. T., Pinel, E. C., Wilson, T. D., Blumberg, S. J., & Wheatley, T. (1998). Immune neglect: A source of durability bias in affective forecasting. *Journal of Personality and Social Psychology*, 75, 617-638.
- Gilovich, T., & Medvec, V. H. (1995). The experience of regret: What, when, and why. *Psychological Review*, 102, 379-395.
- Gilovich, T., Medvec, V. H., & Chen, S. (1995). Commission, omission and dissonance reduction: Coping with regret in the Monty Hall problem. *Personality and Social Psychology Bulletin*, 21, 182-190.
- Gleicher, F., Kost, K., Baker, S. M., Strathman, A. J., Richman, S. A., & Sherman, S. J. (1990). The role of counterfactual thinking in judgments of affect. *Personality and Social Psychology Bulletin*, 16, 284-295.
- Hattiangadi, N., Medvec, V. H., & Gilovich, T. (1995). Failing to act: Regrets of Terman's geniuses. *International Journal of Aging and Human Development*, 40, 175-185.
- Holyoak, K. J., & Thagard, P. (1989). *Cognitive Science*, 13, 295-355.
- Inman, J. J., & Zeelenberg, M. (2000). Attenuation role of decision justification. *Journal of Personality and Social Psychology*, 78, 128.
- Janis, I. L., & Mann, L. (1977). *Decisions Under Stress*. New York: Free Press.
- Kahneman, D., & Miller, D. T. (1988). *Psychological Review*, 93, 1-16.
- Kahneman, D., & Tversky, A. (1982). *Journal of Economic Perspectives*, 2, 263-291.
- Karadogan, F., & Markman, K. D. (2005). *Manuscript under review*.
- Kirkeboen, G., & Teigen, K. H. (in press). *Journal of Behavioral Decision Making*.
- Kruger, J., Wirtz, D., & Miller, D. T. (2002). The automaticity of the hindsight bias: A test of the automaticity of the hindsight bias. *Journal of Personality and Social Psychology*, 82, 503-514.
- Landman, J. (1987). Regret and elaboration. *Social Psychology Bulletin*, 13, 503-514.
- Lecci, L., Okun, M. A., & Karoly, F. (1995). Factors of psychological adjustment. *Journal of Personality and Social Psychology*, 68, 731-741.
- Markman, K. D., Gavanski, I., Sherman, S. J., & Miller, D. T. (1993). The simulation of better and worse. *Journal of Personality and Social Psychology*, 64, 87-109.
- Markman, K. D., & Tetlock, P. E. (1993). The effects of foreseeability and counterfactuals. *Social Psychology Quarterly*, 56, 313-325.
- McClelland, J. L., & Rumelhart, D. E. (1981). Text effects in letter perception. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, 7, 375-407.
- McCloy, R., & Byrne, R. M. J. (2000). *Journal of Experimental Psychology: Applied*, 6, 41-67.
- Miller, D. T., & Taylor, B. R. (1995). How to avoid kicking yourself: *Journal of Personality and Social Psychology*, 68, 1-16.
- Miller, D. T., & Taylor, B. R. (1995). *Journal of Personality and Social Psychology*, 68, 1-16.
- Montgomery, H. (1983). Decision making: Towards a process model of decision making. In A. Vari (Eds.), *Analysis and Application of Decision Making* (pp. 1-16). North Holland.
- Mussweiler, T. (2003). Comparison and consequences. *Psychological Review*, 110, 1-16.
- Nickerson, R. S. (1998). Confirmation bias: A review of general psychology. *Review of General Psychology*, 2, 1-16.
- Pieters, R., & Zeelenberg, M. (2000). Intention-behavior inconsistency. *Journal of Personality and Social Psychology*, 78, 1-16.
- Ratner, R. K., & Herbst, K. C. (2005). *Journal of Personality and Social Psychology*, 88, 1-16.

- impact of affect on switching behavior. *Organizational Behavior and Human Decision Processes*, 96, 23–37.
- Read, S. J., & Miller, L. (1994). Dissonance and balance in belief systems: The promise of parallel constraint satisfaction processes and connectionist modeling approaches. In R. C. Schank & E. J. Langer (Eds.), *Belief, reason, and decision making: Psycho-logic in honor of Bob Abelson* (pp. 209–235). Hillsdale, NJ: Erlbaum.
- Risen, J. L., & Chen, M. K. (2010). How to study choice-induced attitude change: Strategies for fixing the free-choice paradigm. *Social and Personality Psychology Compass*, 4, 1151–1164.
- Roese, N. J. (1997). Counterfactual thinking. *Psychological Bulletin*, 121, 133–148.
- Roese, N. J., & Summerville, A. (2005). What we regret most ... and why. *Personality and Social Psychology Bulletin*, 31, 1273–1285.
- Savitsky, K., Medvec, V. H., & Gilovich, T. (1997). Remembering and regretting: The Zeigarnik effect and the cognitive availability of regrettable actions and inactions. *Personality and Social Psychology Bulletin*, 23, 248–257.
- Seta, J. J., McElroy, T., & Seta, C. E. (2001). To do or not to do: Desirability and consistency mediate judgments of regret. *Journal of Personality and Social Psychology*, 6, 861–870.
- Simon, D., & Holyoak, K. J. (2002). Structural dynamics of cognition: From consistency theories to constraint satisfaction. *Personality and Social Psychology Review*, 6, 283–294.
- Simon, D., Krawczyk, D. C., Bleicher, A., & Holyoak, K. J. (2008). The transience of constructed preferences. *Journal of Behavioral Decision Making*, 21, 1–14.
- Simon, D., Krawczyk, D. C., & Holyoak, K. J. (2004). Construction of preferences by constraint satisfaction. *Psychological Science*, 15, 331–336.
- Skitka, L. J., Bauman, C. W., & Mullen, E. (2004). Political tolerance and coming to psychological closure following the September 11, 2001, terrorist attacks: An integrative approach. *Personality and Social Psychology Bulletin*, 30, 743–756.
- Snyder, C. R. (2002). Hope theory: Rainbows of the mind. *Psychological Inquiry*, 13, 249–275.
- Spranca, M., Minsk, E., & Baron, J. (1991). Omission and commission in judgment and choice. *Journal of Experimental Social Psychology*, 27, 76–105.
- Svenson, O. (1992). Differentiation and consolidation theory of human decision making: A frame of reference for the study of pre- and post-decision processes. *Acta Psychologica*, 80, 143–168.
- Swann, W. B., Jr., & Read, S. J. (1981). Self-verification: How we sustain our self-conceptions. *Journal of Experimental Social Psychology*, 17, 351–372.
- Swann, W. B., Jr., Rentfrow, P. J., & Guinn, J. S. (2003). Self-verification: The search for coherence. In M. R. Leary & J. P. Tangney (Eds.), *Handbook of self and identity* (pp. 367–383). New York: Guilford Press.
- Swann, W. B., Jr., Stein-Seroussi, A., & Giesler, R. B. (1992). Why people self-verify. *Journal of Personality and Social Psychology*, 62, 392–401.
- Tykocinski, O. E. (2001). I never had a chance: Using hindsight tactics to mitigate disappointments. *Personality and Social Psychology Bulletin*, 27, 376–382.
- Tykocinski, O. E., Pick, D., & Kedmi, D. (2002). Retroactive pessimism: A different kind of hindsight bias. *European Journal of Social Psychology*, 32, 577–588.
- Tykocinski, O. E., & Pittman, T. S. (1998). The consequences of doing nothing: Inaction inertia as avoidance of anticipated counterfactual regret. *Journal of Personality and Social Psychology*, 75, 607–616.
- Tykocinski, O. E., & Steinberg, N. (2002). Retroactive pessimism and motivational bias. *Journal of Experimental Social Psychology*, 41, 5–14.
- Wicklund, R. A., & Brehm, J. W. (1985). *The psychology of reactance*. Hillsdale, NJ: Erlbaum.
- Wrosch, C., & Heckhausen, J. (2002). Regret and bad for old adults. *Psychology of Women Quarterly*, 26, 1–14.
- Zeelenberg, M. (1999a). Anticipation and regret. *Journal of Behavioral Decision Making*, 12, 1–14.
- Zeelenberg, M. (1999b). The use of regret to evaluate the functionality of regret. *Personality and Social Psychology Bulletin*, 25, 1273–1285.
- Zeelenberg, M., & Pieters, R. (2000). A review and new findings on bias in failed services. *Journal of Behavioral Decision Making*, 13, 1–14.
- Zeelenberg, M., & Pieters, R. (2007). The psychology of regret. *Journal of Personality and Social Psychology*, 92, 3–18.
- Zeelenberg, M., Van der Pligt, J., & Pieters, R. (2000). Apologizing and inaction. *Personality and Social Psychology Bulletin*, 26, 1273–1285.

nizational Behavior and Human Deci-

Balance in belief systems: The prom-
esses and connectionist modeling
(Eds.), *Belief, reason, and decision mak-*
09–235). Hillsdale, NJ: Erlbaum.

ly choice-induced attitude change:
m. *Social and Personality Psychology*

ological Bulletin, 121, 133–148.

regret most ... and why. *Personality*

. Remembering and regretting: The
ity of regrettable actions and inac-
n, 23, 248–257.

r not to do: Desirability and consis-
f *Personality and Social Psychology*, 6,

namics of cognition: From consis-
onality and Social Psychology Review,

oak, K. J. (2008). The transience of
Decision Making, 21, 1–14.

04). Construction of preferences by
15, 331–336.

. Political tolerance and coming to
ber 11, 2001, terrorist attacks: An
Psychology Bulletin, 30, 743–756.

the mind. *Psychological Inquiry*, 13,

n and commission in judgment and
gy, 27, 76–105.

ion theory of human decision mak-
- and post-decision processes. *Acta*

tion: How we sustain our self-con-
logy, 17, 351–372.

(2003). Self-verification: The search
7 (Eds.), *Handbook of self and identity*

. B. (1992). Why people self-verify.
1, 392–401.

ng hindsight tactics to mitigate dis-
gy Bulletin, 27, 376–382.

Retroactive pessimism: A different
cial Psychology, 32, 577–588.

nsequences of doing nothing: Inac-
terfactual regret. *Journal of Personal-*

- Tykocinski, O. E., & Steinberg, N. (2005). Coping with disappointing outcomes: Retroactive pessimism and motivated inhibition of counterfactuals. *Journal of Experimental Social Psychology*, 41, 551–558.
- Wicklund, R. A., & Brehm, J. W. (1976). *Perspectives on cognitive dissonance*. Hillsdale, NJ: Erlbaum.
- Wrosch, C., & Heckhausen, J. (2002). Perceived control of life regrets: Good for young and bad for old adults. *Psychology and Aging*, 17, 657–670.
- Zeelenberg, M. (1999a). Anticipated regret, expected feedback and behavioral decision-making. *Journal of Behavioral Decision Making*, 12, 93–106.
- Zeelenberg, M. (1999b). The use of crying over spilled milk: A note on the rationality and functionality of regret. *Philosophical Psychology*, 13, 326–340.
- Zeelenberg, M., & Pieters, R. (2004). Beyond valence in customer dissatisfaction: A review and new findings on behavioral responses to regret and disappointment in failed services. *Journal of Business Research*, 57, 445–455.
- Zeelenberg, M., & Pieters, R. (2007). A theory of regret regulation 1.0. *Journal of Consumer Psychology*, 17, 3–18.
- Zeelenberg, M., Van der Pligt, J., & Manstead, A. S. R. (1998). Undoing regret on Dutch television: Apologizing for interpersonal regrets involving actions and inactions. *Personality and Social Psychology Bulletin*, 24, 1113–1119.