Considering Roads Taken and Not Taken:
How Psychological Distance Impacts the Framing of Choice Events

DISSERTATION

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Abstract

After people make choices, there are two main ways in which they might think about or, frame, the choice event: in terms of the option they chose, or in terms of the option they did not choose. How people frame past choice events is likely to impact their reactions to those choice events, but what determines the extent to which people frame choice events in terms of each option?

This dissertation examines two factors – social distance and temporal distance – that have the capacity to influence framing. Chapter 1 discusses how, as dimensions of the broader concept of psychological distance, changes in social and temporal distance influence the extent to which people mentally represent an event in terms of its primary, or defining features (at greater distance), versus its secondary, or incidental features (at lower distance). I argue that, after a choice has been made between two, mutually exclusive options, the choice event’s primary feature is the option that was chosen, while the choice event’s secondary feature is the non-chosen option. It thus follows that decreases in psychological distance from a choice event should lead to a greater tendency to frame a past choice event in terms of the non-chosen option, relative to the chosen option. Four experiments test this hypothesis.

Chapter 2 describes the results of two experiments that show support for the idea that decreases in social distance from a decision maker lead to a greater tendency to frame a past choice event in terms of the non-chosen option. Chapter 3 describes two
additional experiments that conceptually replicate these effects using a manipulation of temporal distance. And one of these experiments demonstrates that changes in temporal distance change only the salience of the non-chosen option – in particular, decreasing distance increases its salience – and do not change the salience of the chosen option.

Chapter 4 integrates the results of the present research with existing theories and findings in social cognition and judgment and decision making, and describes some potential implications of these findings for understanding which emotions people feel after choice events, how post-decision dissonance is resolved, and how choices are made.
Dedication

To my parents
Acknowledgments

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CHAPTER 1

INTRODUCTION

Two roads diverged in a yellow wood,
And sorry I could not travel both
And be one traveler, long I stood
And looked down one as far as I could
To where it bent in the undergrowth

-Robert Frost, *The Road Not Taken*

We often face dilemmas of the sort that Frost describes: there are two alternatives and we must choose one to the exclusion of the other. Some of these choices are of a seemingly inconsequential nature, such as whether to eat scrambled eggs or a bowl of oatmeal for breakfast. However, other times, choices are unmistakably significant. For example, they may involve a large expense of money (e.g., whether to buy the Toyota Prius or the Chevy Malibu). They may dramatically change the direction one’s life is going (e.g., whether to take a job in Tokyo or New York City). Or they may have outcomes that are of great consequence (e.g., whether to undergo a relatively safe or more risky medical procedure). Regardless of the significance of the choice,
understanding how people think about their choices, once a choice has been made, has implications for understanding why people react to choice events the way they do, and for understanding how past choices influence behavior in the present and future.

After people make choices, it would seem natural for them to continue to think about the option they chose, given that they actually experience the consequences of what they chose. However, people can, and do, also think about what they gave up. For example, economic theories of choice behavior contend that making choices involves taking into account opportunity costs or, what one gives up by not choosing the next best alternative (McConnell, Brue, & Flynn, 2012; McEachern, 2009). As another example, after making a choice, people often engage in counterfactual thinking, sometimes considering what other choices they could have made and how those outcomes might have been different (Roese, 1997). To experience regret or rejoicing requires a comparison between the outcome associated with one’s choice and a forgone outcome, and which emotion occurs depends on whether the forgone outcome would have been better (regret) or worse (rejoicing; e.g., Mellers, Schwartz, Ho, & Ritov, 1997; Zeelenberg, Van Dijk, Van der Pligt, Manstead, Van Empelen, & Reinderman, 1998). And, people’s feelings toward what they did not choose sometimes change after they make a choice, either becoming more positive due to a sense of loss (Carmon, Wertenbroch, & Zeelenberg, 2003), or becoming more negative due to post-decision dissonance reduction strategies (Brehm, 1956). All of these examples are consistent with the idea that people do, in fact, consider the option they did not choose, after a choice event.
What determines the extent to which people will think about a past choice event in terms of the option they chose relative to the option they did not choose? For example, after choosing to buy the Toyota Prius over the Chevy Malibu, what determines to what extent one focuses on the fact that one chose and now owns the Prius, or that one did not choose and does not own the Malibu? Existing work addresses the question of when people are ever likely to generate counterfactuals (i.e., consider ways in which choices might have turned out differently; Epstude & Roese, 2008; Gilbert & Ebert, 2002; Isen & Geva, 1987; Markman & Tetlock, 2000; Roese & Summerville, 2005; Sanna & Turley, 1996; Teigan, 1995; Tsiros & Mittal, 2000); however, that work does not directly address the question of when people are likely to focus those counterfactuals on the chosen versus non-chosen options.

As one exception, one series of studies shows that when decisions are made by rejecting options, people who are dissatisfied with the outcome of their choice tend to think more about the non-chosen option than people who made an identical choice through the process of selection (Machin, 2006). In this example, an aspect of the decision process – that is, whether it involved rejection or selection – influences the extent to which people consider the chosen and non-chosen options after a choice event. Furthermore, the observed effects are confined to instances in which the decision maker is unhappy with the choice outcome. The present research seeks to explore which factors other than the decision process might influence the extent to which people think about choice events in terms of the chosen and non-chosen options. As will become apparent soon, the factors under consideration are likely to be independent of the decision process,
and can likely be applied to instances in which the decision maker is either dissatisfied or satisfied with the decision outcomes.

In particular, the present research concerns events in which a choice is made between two, mutually exclusive alternatives. And the experiments that are presented examine whether the degree to which a choice event is psychologically close to (versus distant from) oneself influences the extent to which one will think about the choice event in terms of the chosen and non-chosen options. I predict that, regardless of whether the decision maker is satisfied or dissatisfied with the outcomes of the decision, choice events that are psychologically closer to oneself will be more likely to be framed in terms of the non-chosen option, relative to the chosen option. The way people frame choice events likely has implications for understanding how people feel after those events, how they resolve post-decision dissonance, and how they make future choices. The General Discussion will expand upon these points. The next few sections will describe the concept of psychological distance, two particular aspects of psychological distance relevant to the present research, and the rationale for my hypothesis.

**Social and Temporal Distance Influence Availability of Information**

People directly experience the present moment and their current location, the so-called “here-and-now”; everything else is psychologically distant from them (Trope & Liberman, 2010). Psychological distance varies on a continuum, such that some objects and events are psychologically more distant than others (Trope & Liberman, 2010). There are a few different dimensions of distance, two of which – social distance and temporal distance – will be examined in the current research for their potential to influence the
extent to which people will think about a prior choice event in terms of the chosen and non-chosen options.

Described simply, social distance refers to the degree of closeness in the relationship between oneself and another person. There are a number of ways in which social distance manifests itself. For example, people who are similar to oneself are less socially distant than people who are different; people with whom one shares the same amount of social status are less distant than those who have much more or less social status than oneself; people who are members of groups to which one belongs are less distant than those who are members of groups to which one does not belong (Liberman, Trope, & Stephan, 2007). In the present research, in which the context is making choices, social distance refers to whether the decision maker is oneself or a socially close other, or a person one has never met.

Everyday experience suggests that social distance from a decision maker influences the extent to which people think about a choice event in terms of the chosen and non-chosen options. For example, after choosing between two options, the decision maker herself typically can name both the option she chose, and the option she did not choose. However, when it comes to thinking about a choice that another person has made, it is common for people to know the option that the decision maker chose but not have any information about the option the decision maker did not choose; it is less common for people to know nothing about the chosen option, but have information about the option that was not chosen. For example, while Julie, herself, may know that, after a long debate, she chose to buy the Toyota Prius and not the Chevy Malibu, Julie’s
acquaintance that catches a ride home with her one day knows which car Julie chose, but will not know which car Julie passed up. Thus, compared with her acquaintance, a socially distant other, Julie is more likely to think about the choice event in terms of the option she did not choose. This example suggests that decreasing one’s social distance from the decision maker (i.e., considering a choice made by a close other or oneself, versus a distant other), should increase the likelihood that one will think about the decision in terms of the non-chosen option.

Similar predictions can be made for temporal distance, which refers to how long ago a past event occurred, or how soon from the present moment a future event will occur. Using the present moment as a starting point, events that have already occurred or that will occur in the future vary on a continuum of temporal distance, according to the objective amount of time that separates these events from the present moment. In the present research, all of the choice events are set in the past, and thus temporal distance refers to whether the choice was made relatively recently, or a long time ago.

Again, experience suggests that temporal distance from the choice event influences the extent to which people think about the choice event in terms of the chosen and non-chosen options. At the point at which the decision maker makes a choice between two options, the decision maker typically can name both the option she chose and the option she did not choose. However, as the choice event becomes a part of the past, it seems reasonable to expect that the decision maker will be less likely to think about, or even recall, the option she did not choose, relative to the option that she did choose – if only because the option she did choose is present in her life. For example, the
day that Julie goes to the dealership to sign the papers to purchase her Toyota Prius, she can easily name the car she is passing up; however, in ten years, Julie will be less likely to recall the car she passed up than the car she drives on a daily basis. Thus, conceptually consistent with the example for social distance, decreasing temporal distance from a choice event (i.e., considering a choice that occurred more recently) should increase the likelihood that one will think about the choice event in terms of the non-chosen option.

The examples just discussed draw on the idea that as distance increases between an individual and a choice event, information about the non-chosen option will become relatively less available in memory than information about the chosen option. However, in cases where information about the chosen and non-chosen options remains equally available to socially close and distant others, or for temporally close and distant choice events, an information availability account would not predict that distance would influence the extent to which someone thinks about the event in terms of the chosen and non-chosen options. A different way to think about the above examples is that social and temporal distance, as dimensions of psychological distance, influence the process by which people mentally represent events (Trope & Liberman, 2010). As explained next, this other theoretical account predicts that even in instances in which information about the chosen and non-chosen options is equally available to socially close and socially distant others, and for temporally close and temporally distant choice events, social and temporal distance will nevertheless influence the extent to which people think about the choice event in terms of the chosen and non-chosen options.

Social and Temporal Distance Influence Mental Representation
According to one theory of psychological distance (Construal Level Theory; Trope & Liberman, 2010), as psychological distance from an object or event decreases, people use increasingly lower level mental representations to understand those objects or events. The shift from higher to lower level representations implies a shift in emphasis on the primary versus secondary features of objects or events. Primary features of an object or event are those that are essential or central to defining the object or event; if these features were to change, the overall meaning of the object or event would be different. Secondary features are less defining of an object or event; these more incidental features could be altered or left out without the overall meaning changing significantly. In other words, an object or event as a whole would change more if a primary feature were to be changed than if a secondary feature were to be changed. To give an example offered by Trope & Liberman (2010), “a lecture would change more when the speaker is changed than when the room is changed,” which suggests that the speaker is more of a primary feature, the room more of a secondary feature of the lecture event.

When an individual uses lower level mental representations to understand events, the individual thinks about the events less in terms of their primary or central features, and more in terms of their secondary or incidental features, compared with when the individual uses higher level mental representations (Trope & Liberman, 2010). Thus, as distance decreases, individuals’ judgments and behaviors will be relatively more likely to reflect the influence of the event’s secondary versus primary features. It is important to note that at lower distances, it is not necessarily the case that people’s responses to an event will be driven more by the event’s secondary features than by its primary features.
Instead, the theory predicts and much empirical work demonstrates that it is the relative emphasis placed on secondary features versus primary features that will be greater at lower distances; thus, it might still be the case that people’s responses will reflect the influence of primary features more than secondary features at lower distances, but this relatively greater influence of primary features will be smaller at low distance than at high distance (Trope & Liberman, 2010).

In the prior example of the primary and secondary features of a lecture, the lecture was one event that was discussed in terms of its primary (speaker) and secondary (room) features. Likewise, in deriving the hypotheses for the present research, the notions of primary and secondary features are applied to a choice event as a whole, as opposed to applying these notions to each individual choice option within that choice event. In particular, I propose that when it comes to events in which an individual made a choice between two options, the primary, defining, essential feature of the entire choice event becomes what the decision maker chose to do. And, I propose that the option that the decision maker did not choose is of more of a secondary, incidental nature, when thinking about the choice event as a whole. Described next are a few different lines of existing research that, taken together, logically support this assumption that the chosen option is better described as a primary feature of a choice event, whereas the non-chosen option is better described as a secondary feature of a choice event. Later on I will return to the question of how, given this assumption, psychological distance should influence the extent to which people think about the event in terms of the chosen and non-chosen
options. Then I will describe experiments designed to examine this question, in particular.

**Chosen as Primary, and Non-chosen as Secondary**

**Support from research on forecasting reactions to the outcomes of non-chosen options.** As a first example, work on affective forecasting is consistent with the idea that the primary feature of a choice event is the chosen option and the secondary feature the non-chosen option. People often overestimate how strong their affective reactions to future events will be (Wilson & Gilbert, 2003); however, when it comes to predicting affective reactions to events in which people decide not to pursue some course of action, people tend to underestimate the strength of the affect they will experience upon learning about the outcomes of this non-chosen path (Andrade & Van Boven, 2010). For example, in one study, participants were given the opportunity to keep the entire amount of money they had earned by participating in an experiment, or to gamble some of it in a fairly risky game. After making their choice, participants who decided not to gamble then predicted how good or bad they would feel upon learning they would have won, and upon learning they would have lost. Then participants were shown the gamble’s actual outcome, and indicated how they felt at that moment. Comparisons between participants’ predicted and experienced affect showed that participants who would have won underestimated how bad they would have felt for missing a good outcome, while participants who would have lost underestimated how good they would have felt for avoiding a bad outcome. Thus, people tended to underestimate how good or
bad they would feel upon learning about the outcomes of the gamble they did not choose to take (Andrade & Van Boven, 2010).

The results of a follow-up study suggested that this underestimation is due, at least in part, to the fact that people believe they will feel less responsible for the outcomes of non-chosen options than the outcomes of chosen options. And the researchers contend that these differences in perceptions of responsibility occur because people tend to “construe decisions as the intentional selection of actions taken rather than the selection of actions not taken” (Andrade & Van Boven, 2010, p. 707). In the context of a choice between two, mutually exclusive alternatives, this implies that after the choice event, the option people select is considered more of a primary feature of a choice event, whereas the option people do not select is considered more of a secondary feature.

Support from social judgment research. Another reason to suggest that the primary feature of a choice event is the chosen option and the secondary feature the non-chosen option comes from work on how people make social judgments. This work on social judgment is not related to the domain of thinking about choice events, in particular, yet its principles can be applied to this domain. In particular, work on social judgment suggests that when inferring the causes of a social event, people tend to pay less attention to details of the environment or the situation that the person was in, than to what the person actually did (Gilbert, Pelham, & Krull, 1988; Jones & Harris, 1967; Ross, Amabile, & Steinmetz, 1977). For example, when inferring the cause of someone’s reckless driving, people are less likely to acknowledge the possibility that the driver might have been rushing to the hospital to visit a dying relative – a situational or
environmental cause of his behavior – than to simply attribute the driver’s behavior to his reckless disposition.

Another way of describing the process by which people typically make social judgments is that people treat the individual’s behavior as primary and the person’s environment as secondary. In line with this claim, decreasing psychological distance has been shown to increase the extent to which people incorporate (secondary) environmental factors into their judgments (Henderson, Fujita, Trope, & Liberman, 2006; Nussbaum, Trope, & Liberman, 2003). In addition, people expect both others and themselves to demonstrate less cross-situational consistency in their behaviors, as psychological distance decreases (Nussbaum et al., 2003); in other words, (secondary) environmental factors are expected to be more likely to influence one’s behavior at lower distances.

Thus, in the domain of social judgment, the individual’s behavior is primary and the individual’s environment is secondary. Applied to the domain of choice events with two mutually exclusive options, once the choice has been made, the act of choosing an option becomes the decision maker’s behavior. And, once the choice has been made, the option that was not chosen now seems like a relatively incidental detail of the decision maker’s environment, relative to the chosen option. Given this logic, once a choice has been made, the primary feature of that past choice event is the chosen option, whereas the secondary feature of that choice event is the non-chosen option.

**Support from work on the “omission bias.”** People demonstrate a preference for “harm caused by omissions over equal or lesser harm cause by acts” (p.74, Baron & Ritov, 2004). This phenomenon can be explained by the fact that people tend to believe
that behaviors that harm others involve more malicious intent, more effort, and play more of a causal role in producing the negative outcomes than non-behaviors (Spranca, Minsk, & Baron, 1991). If behaviors are believed to play a causal role in producing the outcomes in any given event, while non-behaviors are not linked as directly to event outcomes, it suggests that changing one’s behavior would be more likely to change the outcome (or overall meaning of the event) than would changing a non-behavior. Primary features of events are those that, if they were to change, would change the meaning of the object or event, while secondary features are less defining of an object or event; these more incidental features could be altered or left out without the overall meaning changing significantly (Trope & Liberman, 2010). Thus, it seems reasonable to map the concept of primary features onto behaviors, and the concept of secondary features on to non-behaviors.

In the context of choices between two mutually exclusive options, when people choose an option, they often engage in a behavior with regard to that option. Meanwhile, not choosing the non-chosen option often does not require any particular behavior with regard to that non-chosen option. For example, choosing to order the salmon dish at a restaurant involves engaging in the act of expressing one’s preference to the waiter (“Can I please have the salmon?”), while not ordering the chicken involves engaging in no behavior at all with regard to the chicken. Thus, according to the logic expressed at the end of the prior paragraph, the chosen option, with its associated behavior, is primary, and the non-chosen option, with its non-behavior, is secondary.
Support from work on inferring personal attitudes from non-behaviors. The claim that the primary feature of a choice event is the chosen option and the secondary feature the non-chosen option is also broadly consistent with work showing that people infer that opinions expressed by engaging in some behavior are more extreme than those expressed by not engaging in a behavior (Fazio, Sherman, & Herr, 1982). For example, in one study, participants watched a series of cartoons and rated each using a 6-point scale ranging from Very Funny to Very Unfunny. However, before participants made these scale ratings, they indicated via either a behavior or a non-behavior whether they found the cartoon funny or unfunny (a dichotomous judgment). In particular, half of the participants were instructed to press a button if they found the cartoon funny and not press that button if they found the cartoon unfunny; the other half were instructed to press the button if they found the cartoon unfunny, and not press it if they found it funny. Among participants who, according to the dichotomous judgment, found a cartoon funny, those who had indicated this judgment by pressing the button, compared with those who had indicated the same judgment by not pressing the button, gave more extreme ratings of funniness on the scale measure. Parallel results emerged for cartoons thought to be unfunny according to the dichotomous judgment (Fazio et al., 1982).

Thus, people believe that behaviors are more diagnostic of, or are more central to defining, their opinions than non-behaviors. Another way of thinking about this idea is that when inferring their own opinion after an event, people tend to treat what they do as a primary feature of that event, and what they do not do as a secondary feature. This tendency can also be applied to the context of thinking about decisions, in the way
described in the previous section. When people choose an option, they have engaged in a behavior with regard to that option. Meanwhile, the act of not choosing the non-chosen option often does not require any particular behavior with regard to that non-chosen option. Thus, according to the logic expressed earlier, the chosen option, with its associated behavior, would be primary, and the non-chosen option, with its non-behavior, would be secondary.

**Support from work on self-other differences in inferences from non-behaviors.** That behaviors provide more information about opinions than non-behaviors has been used to explain, in part, why people infer that other decision makers’ choices are motivated more by a desire to obtain the chosen option, than by a desire to avoid a clearly unattractive alternative option (Miller & Nelson, 2002). This tendency was revealed even in cases where participants acknowledged that their own identical choices were motivated by a desire to avoid the clearly unattractive alternative (Miller & Nelson, 2002). In other words, people’s inferences about the underlying motivations of other (socially distant) decision makers’ choices are based more on what those decision makers are choosing, less on the alternative option that they are avoiding, or not choosing, than are people’s judgments about their own motivations. For one’s own choices, one is relatively more likely to acknowledge that one chose a given option due to a dislike of the alternative (i.e., due to characteristics of the non-chosen option).

When considered in light of existing work on psychological distance, these different inferences for self and other are consistent with my proposal that the chosen option is a primary feature of a choice event and the non-chosen a secondary feature. In
other words, given that increasing social distance encourages people to think more in terms of primary features, and less in terms of secondary features (Trope & Liberman, 2010), if my proposal is correct, it follows that the tendency to draw more extreme inferences from chosen options (primary) than from non-chosen options (secondary) would indeed be stronger when thinking about choices made by distant others than oneself. Thus, the Miller and Nelson (2002) results are consistent with my proposal that the chosen option is a primary feature of a choice event and the non-chosen option a secondary feature.

Furthermore, it seems possible that the reason why observers are drawing more extreme inferences from chosen options (primary) than from non-chosen options (secondary) for distant others is due to the way observers are framing the choice event. In other words, observers may be treating the selection of a choice option (i.e., “choosing X”) as a more appropriate description of distant others’ choice behavior than of their own choice behavior (or vice-versa, that is, treating the rejection of a choice option (i.e., “not choosing Y”) as a more appropriate description of their own choice behavior than of distant others’). The present research does not examine inferences from choice events, but rather directly tests whether describing a choice event in terms of the chosen option is more likely (and, vice-versa, the non-chosen option is less likely) when thinking about a socially distant other’s than one’s own choice behavior. The present research will also examine whether conceptually similar results will occur for temporally near versus temporally distant choice events.
Overview of the Present Research

Four experiments examine whether psychological distance influences the extent to which people think about a choice event in terms of the chosen and non-chosen options, after a decision is made. Chapter 2 contains two experiments that pertain to social distance from the decision maker, while Chapter 3 contains two experiments that pertain to temporal distance from the decision event. For all four experiments, participants read a series of scenarios in which an individual made a choice. After reading each scenario, participants indicated whether they were thinking about the choice event in terms of the chosen option or in terms of the non-chosen option. Across all four experiments I predict that decreasing distance should increase the relative likelihood of thinking about the choice event in terms of the non-chosen option relative to the chosen option. In Chapter 4 the implications of the research are discussed, along with directions for future research.
CHAPTER 2
SOCIAL DISTANCE AND FRAMING

Experiment 1

In Experiment 1 participants read two scenarios about individuals who made bad choices. Social distance was manipulated by varying whether the decision maker in the scenario was the participant him- or herself, or another, hypothetical individual (i.e., a distant other). Then participants responded to questions that assessed whether they were framing the choice event in terms of the chosen or non-chosen option. This measure of framing required participants to indicate which of two descriptions of the choice event best described the event to them, with one description focused on the chosen option and the other focused on the non-chosen option. This type of dichotomous measure is similar to that used in other work on psychological distance that shows that distance influences how people mentally represent events (Fujita, Henderson, Eng, Trope, & Liberman, 2006, Study 1; Liberman & Trope, 1998, Study 1; Wakslak, Trope, Liberman, & Alony, 2006, Study 7). I predicted that decreasing distance would increase people’s tendency to frame the choice event in terms of the non-chosen option, relative to the chosen option. In particular, participants who read a scenario in which they made a choice would be more
likely to describe the choice event in terms of the non-chosen option, compared with participants who read about the same choice made by a distant other.

**Method**

**Participants**

One hundred and seven undergraduates (54 males and 53 females) participated in exchange for partial course credit in an introductory psychology course.

**Procedure**

Participants signed up for an online experiment described as thinking about decisions, and upon signing up received an email containing a link to a secure website where they could complete the questionnaire. At the beginning of the questionnaire participants were instructed to turn off all media devices in their immediate environment, and to complete the questionnaire in one sitting and without talking to anyone else. Participants first completed some tasks for an unrelated study, and then received instructions for the current study.

Depending on condition, participants were either told that they would read “one scenario about a decision you make, and one scenario about a decision that another person makes,” or that they would read “one scenario about a decision another person makes, and one scenario about a decision that you make.” Thus, social distance was manipulated between-subjects for each scenario, but within-subjects across the two scenarios. The decision topic in the first scenario – who to visit for a weekend trip – was
the same for all participants, as was the decision topic in scenario two— which movie to see when on a date.

After receiving this introductory information, participants advanced to the next screen to read the first scenario, which pertained to a decision about whether to visit an old high school friend or to visit one’s family for the weekend. Participants reading about a choice that they, themselves, made saw the following scenario:

You have to decide whether you should spend your weekend visiting your family at home, or visiting your friend Alex at college. You decide to go visit your friend at college. Alex’s university turned out to be located in a very boring town, and Alex’s roommate was messy, loud, and obnoxious. When you get back to school after the weekend, you find out from your mom that your favorite cousins had come for a surprise visit, and that your family had had a great time all weekend.

Participants in the other condition read a scenario identical to the one above, with the exception of the decision maker in the scenario: instead of the decision maker being referred to as “you,” the decision maker was an individual named “Kendra.” Thus, across both conditions, in scenario one the chosen option was visiting Alex at college, and the non-chosen option was visiting one’s family.

After reading scenario one, participants encountered the dependent measure for that scenario, designed to assess participants’ framing of the choice event. To be specific, on each of the three subsequent screens there appeared two possible descriptions of the event from the scenario: one description corresponded to the chosen option and the other corresponded to the non-chosen option. For each of the three questions, participants were
asked to “select the statement that best fits the events in the story”; they were informed that there were no right or wrong answers to these questions. The three questions appeared in the same order for all participants, and the response options for each of the three questions were worded such that they referred to the decision maker as “you” or “Kendra,” depending on condition.

For example, the first question for the “self” version of the scenario asked participants to indicate which one of the following two statements best fit the story: “You chose to visit your friend and had a pretty lousy time,” (chosen option framing) or “You didn’t choose to visit your family and you could have had a lot of fun with them” (non-chosen option framing). The other version of this question contained statements that were identical except that the words “you” and “your” were replaced by “Kendra” and “her.” The order in which the two response options appeared was determined randomly for each participant for each question. (See Appendix A for the exact wording of all three questions from scenario one.)

After responding to the three questions about scenario one, participants read scenario two in which the decision maker was either an individual named John or the participant him- or herself, depending on condition. Scenario two pertained to a choice between two possible movies to see on a date. Participants reading about a choice that they, themselves, made saw the following scenario:

You want to go to a movie with your date and you have to decide whether to see

*The Darkness Beneath Us* or *Strangers Around the Corner*. You decide to suggest that the two of you go to see *The Darkness Beneath Us*. The movie was poorly
acted and not at all scary, and your date seemed a little bored. When leaving the theatre, you notice that *Strangers Around the Corner* had added two new show times for that night because it was so popular, and you overhear people talking about how scary it was.

After reading the scenario, participants encountered the dependent measure for scenario two, which was conceptually similar to that of scenario one. Each of three subsequent screens contained two descriptions of the scenario, one of which corresponded to the chosen option and the other of which corresponded to the non-chosen option. As in the measure for scenario one, the order of the three questions remained the same for all participants, while the order in which the two response options appeared was determined randomly for each participant for each question. (See Appendix A for the exact wording of all three questions from scenario two.) Participants then answered some additional questions about themselves, unrelated to the hypotheses of the current study, and received a full debriefing.

**Results and Discussion**

Three participants did not agree to complete the experiment under the conditions specified in the introduction to the questionnaire and were excluded from the analyses. Two of these participants were in the condition in which scenario one was about Kendra and scenario two about the self, while one of these participants was in the other condition in which scenario one was about the self and scenario two about John. In addition, two participants did not provide answers to all six dependent measures (one participant from
each condition) and were excluded from the analyses. The final sample contained 102 participants (53 in the condition in which scenario one was about Kendra and scenario two about the self, and 49 in the condition in which scenario one was about the self and scenario two about John).

I predicted that participants who read a scenario in which they, themselves, made the choice would be more likely to frame the choice event in terms of the non-chosen option, compared with participants who read about the same choice made by a distant other. Given that the dependent measure was composed of three questions for each scenario, participants could have selected the non-chosen option framing three possible times for each scenario. For each participant I first computed two composite measures, one for each scenario, that contained the number of times the non-chosen option was selected (scenario one: range = 0 to 3, $M = 1.65$, $SD = 1.07$; scenario two: range = 0 to 3, $M = 1.35$, $SD = .96$). Two separate t-tests predicting these composite scores from social distance condition were conducted. Social distance from the decision maker did not influence the extent to which participants framed the choice event in terms of the non-chosen option, neither in scenario one ($t < 1$, $p > .40$), nor in scenario two ($t < 1$, $p > .40$).

However, examining the effect of social distance on the first of the three questions for each scenario provides support for my hypothesis. For the first measure from scenario one, the proportion of participants who framed the choice event in terms of the non-chosen option differed depending on whether the decision maker in the scenario was the participant, him- or herself, or a distant other, $\chi^2(1, N = 102) = 5.57$, $p < .05$. In particular, 64% ($n = 34$) of participants framed the choice event in terms of the non-
chosen option when the decision maker was the participant, him- or herself, compared with 41% (n = 20) when the decision maker was a distant other. For the first measure from scenario two, the results of an analogous analysis were significant and consistent with the results from scenario one, $\chi^2(1, N = 102) = 4.61, p < .05$. In particular, 49% (n = 24) of participants framed the choice event in terms of the non-chosen option when the decision maker was the participant, him- or herself, compared with 28% (n = 15) when the decision maker was a distant other (see Table 2.1). In summary, Experiment 1 provides some initial support for the idea that decreasing social distance from a decision maker increases the likelihood of framing the decision in terms of the non-chosen option.

<table>
<thead>
<tr>
<th></th>
<th>Self</th>
<th>Distant Other</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Scenario One</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chosen Option</td>
<td>36% (n = 19)</td>
<td>59% (n = 29)</td>
</tr>
<tr>
<td>Non-chosen Option</td>
<td>64% (n = 34)</td>
<td>41% (n = 20)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>100% (n = 53)</td>
<td>100% (n = 49)</td>
</tr>
<tr>
<td><strong>Scenario Two</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chosen Option</td>
<td>51% (n = 25)</td>
<td>72% (n = 38)</td>
</tr>
<tr>
<td>Non-chosen Option</td>
<td>49% (n = 24)</td>
<td>28% (n = 15)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>100% (n = 49)</td>
<td>100% (n = 53)</td>
</tr>
</tbody>
</table>

Table 2.1. Proportion of participants who framed the decision in terms of the chosen and non-chosen options, depending on social distance from the decision maker, in the first question of scenarios one and two in Experiment 1.
Experiment 2

In the psychological distance literature, manipulations of social distance typically involve varying whether the target individual is a socially close or socially distant other, and therefore it seemed sensible to examine the impact of this sort of social distance manipulation on framing. For that reason Experiment 2 manipulated social distance completely between-subjects using three levels of distance instead of two. Experiment 2 involved the same two scenarios and questions as Experiment 1. For both scenarios that participants encountered, the decision maker was either the participant him- or herself, a close friend of the participant (close other), or a typical undergraduate student of their same sex (distant other).

In line with my predictions for, and the results of, Experiment 1, I predicted that participants who read scenarios in which they, themselves, made the choice would be more likely to frame the choice event in terms of the non-chosen option than participants who read about the same choices made by a distant other. Given that people often consider close others as included in the self and that self-other differences are sometimes reduced when the other is a close other (Aron, Aron, Tudor, & Nelson, 1991), I predicted that participants who read about choices made by a close other would be just as likely as participants who read about choices made by themselves to frame these choice events in terms of the non-chosen option. And I predicted that participants reading about choices made by close others would be more likely to frame the event in terms of the non-chosen option than they would for choices made by distant others.
Method

Participants

One hundred eighteen undergraduates (45 males, 68 females, 5 unidentified) participated in exchange for partial course credit in an introductory psychology course.

Procedure

Participants signed up for an online experiment described as involving thinking about decisions, and upon signing up received an email containing a link to a secure website where they could complete the questionnaire. Participants were randomly assigned to one of three social distance conditions – self, close other, or distant other – which determined the decision maker for both scenarios participants would read. Thus, in Experiment 2, social distance was manipulated between-subjects, and there was no within-subjects manipulation.

As in Experiment 1, at the beginning of the questionnaire participants were instructed to turn off all media devices in their immediate environment, and to complete the questionnaire in one sitting and without talking to anyone else. They were also asked to take the study in good faith and to follow all the instructions to the best of their ability. All participants reported some demographic information – year in college, age, sex, and whether English was their native language – and then reported their current mood. Sex of participant would be used later to match the sex of the decision maker in the distant other scenarios.

Next participants received instructions for the main part of the study, and at this point the questionnaire differed by condition. Participants in the self condition learned
that they would “read two scenarios about decisions you might make,” while participants in the distant other condition learned that they would “read two scenarios about decisions that John/Kendra [depending on participant sex], a typical undergraduate, might make.” Participants in the close other condition learned that they would “read two scenarios about decisions that someone close to you might make,” and then were asked to type the first name of a close friend in a text box on the same screen, and to indicate the sex of this person by selecting “male” or “female.” All participants were also told that they would answer a few questions after reading each scenario, and that there were no right or wrong answers to those questions.

The content of the scenarios and the key dependent measures were the same as they were in Experiment 1. For participants in the self condition, both scenarios and their response options contained “you” as the subject. For participants in the distant other condition, both scenarios and their response options contained either the name “John” for male participants or “Kendra” for female participants, as well as the appropriate sex-matched pronouns (e.g., “his,” “her”). For participants in the close other condition, both scenarios and their response options contained the name of the close friend that participants had typed in earlier, as well as the appropriate sex-matched pronouns, which were based on the sex of the close friend that participants had indicated earlier. At the end of the questionnaire participants received a full debriefing.

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After the three dichotomous choice framing questions for scenario one, I asked one additional question each about the chosen and non-chosen options, in an attempt to measure framing in a way that did not involve a forced choice between the two framings. In hindsight, the wording of these additional questions and their response options did not allow for a good test of my hypothesis.
Results and Discussion

Ten participants did not agree to complete the experiment under the conditions specified in the introduction to the questionnaire (three in self condition, five in close other condition, and two in distant other condition) and were excluded from all analyses. Four additional participants did not provide answers to all six dependent measures (two in self condition, two in distant other condition) and were likewise excluded from all analyses, leaving a final sample of 104 participants (35 in self condition, 34 in close other condition, 35 in distant other condition). I predicted that participants who read scenarios in which they made the decision would be equally likely to frame the decision in terms of the non-chosen option as participants who read about the same decisions made by a close other, and that these two groups would be significantly more likely to frame the decision in terms of the non-chosen option than participants who read about the same decisions made by a distant other.

Because in Experiment 2 social distance had been manipulated fully between-subjects, I was able to compute a composite measure, for each participant, of the total number of times across the two scenarios that the participant selected the non-chosen option (range = 0 to 6, $M = 3.38$, $SD = 1.57$). I submitted this composite measure to an analysis of variance using social distance condition as the predictor (coded such that distant other = -1, close other = 0, and self = 1). Overall, social distance did not significantly influence framing when a composite of all six framing measures was used as the dependent variable, $F(2,101) = 1.41, p > .20$. Furthermore, a planned contrast analysis
examining differences between the distant other condition, and the close other and self conditions combined, was non-significant, \( t(101) = 1.47, p > .10 \).

Given the results of Experiment 1, it seemed reasonable to expect that the predicted effect of social distance would only emerge on the very first of the three questions for each scenario. Because in Experiment 2 social distance had been manipulated fully between-subjects, I computed an additional composite measure for each participant, containing the number of times the participant selected the non-chosen option in the first question that followed each of the two scenarios (range = 0 to 2, \( M = .80, SD = .74 \)). I submitted this new composite measure to an analysis of variance using social distance condition as the predictor (coded such that distant other = -1, close other = 0, and self = 1). This time, there were marginally significant differences in the extent to which participants framed the decision in terms of the non-chosen option, across the three social distance conditions, \( F(2,101) = 2.75, p < .10 \) (see Figure 2.1).
As predicted, participants who read scenarios in which they, themselves, made the decision were equally likely to frame the decision in terms of the non-chosen option as participants who read about the same decisions made by a close other, $t < 1, p > .50$.

More important, a planned contrast analysis indicated that, as predicted, participants reading about decisions made by themselves or close others were significantly more likely to frame the decision in terms of the non-chosen option than participants reading
about decisions made by distant others, $t(101) = 2.26, p < .05$ (self/close other combined $M = .91, SD = .74$; distant other $M = .57, SD = .70$).

Experiments 1 and 2 manipulated social distance and the results suggest that decreasing psychological distance from a decision maker increases the likelihood of framing the decision in terms of the non-chosen option, relative to the chosen option. In Experiments 3 and 4 I examine whether analogous results would be found if psychological distance were varied via changes in retrospective temporal distance or, how long ago the individual made the decision. In these next two studies, social distance from the decision maker was held constant by identifying the decision maker as a socially distant other for all participants. That the decision maker was a socially distant other may provide a strong test of my hypothesis that temporal distance will influence framing, given suggestions that manipulations of distance on one dimension (e.g., temporal distance) should have weaker effects when the event is distant on another dimension (e.g., social distance; Trope & Liberman, 2010).
CHAPTER 3
TEMPORAL DISTANCE AND FRAMING

Experiment 3

In Experiment 3 participants read two scenarios about decisions made by other people, and responded to one question per scenario that assessed whether they were framing the decision in terms of the chosen or non-chosen option. In this experiment I manipulated temporal distance, by varying whether the decision had been made last week or last year. I predicted that decreasing distance would increase the likelihood of framing the decision in terms of the non-chosen option. In particular, participants who read about a decision made last week would be more likely to frame the decision in terms of the non-chosen option, compared with participants who read about the same decision made last year.

One additional purpose of Experiment 3 was to examine whether the effect of distance on framing holds both for decisions that turn out poorly and those that turn out well. People who experience positive outcomes are typically less likely than those experiencing negative outcomes to think about counterfactuals or, “what could have been” had they done differently (Epstude & Roese, 2008; Isen & Geva, 1987; Tsiros & Mittal, 2000). Even so, I predicted that the effects of distance would hold for decisions
with positive outcomes. To examine whether this was the case, in Experiment 3 I varied both temporal distance and whether the outcome of the decision was bad or good. I expected that decreasing distance would increase the likelihood of framing the decision in terms of the non-chosen option, regardless of the valence of the outcome.

**Method**

**Participants**

One hundred fifty-two undergraduates (69 males and 83 females) participated in exchange for partial course credit in an introductory psychology course.

**Procedure**

Participants signed up for a laboratory experiment that involved reading scenarios about decisions that people made, and answering questions about those scenarios. When participants arrived at the lab, they were seated in individual cubicles to complete a computerized questionnaire. They were randomly assigned to read scenarios about decisions with either bad or good outcomes, which took place either last week or last year. Thus, Experiment 3 contained a 2 (temporal distance: last week vs. last year) x 2 (decision outcome: bad vs. good) fully between-subjects design. The scenarios used in Experiment 3 were different than those used in Experiments 1 and 2; however, they were conceptually similar in that they involved deciding between two, mutually exclusive options.

At the beginning of the questionnaire participants were told that for each scenario, they should read and understand it and then continue on to the following screen to answer
a question about it. Depending on temporal distance condition, the scenario either began with the words “last week” or “last year.” Participants in the bad outcome conditions learned that the option chosen by the decision maker was associated with bad outcomes, while the non-chosen option would have been associated with good outcomes. Thus, the scenarios in the bad outcomes conditions in Experiment 3 were conceptually similar to all of the scenarios used in Experiments 1 and 2 in that the decision makers made choices that turned out poorly. Participants in the good outcome conditions learned that the option chosen by the decision maker was associated with good outcomes, while the non-chosen option would have been associated with bad outcomes.

The first scenario for all participants in Experiment 3 involved an individual named Erica, and pertained to a decision about which Friday night event to attend: her high school’s football game or a party. Participants in the bad outcome conditions read the following scenario, which varied depending on temporal distance condition:

_Last week_ [Last year] Erica had the choice of going to her high school’s football game or going to a party out of town that same evening. In the end, Erica decided to go to the football game, instead of going to the party. When Erica got to the football game, it was cold and rainy. Her seats were so bad that she couldn’t see half of the field, and the team lost badly. Erica called her friend to see how she was enjoying the party, and her friend was having an awesome time! Erica found out that the party had tasty food and beverages, and great music.

Scenario one for participants in the good outcome conditions began with the same opening sentence as above, but went on to explain how Erica chose the option with good
outcomes (i.e., the party) and did not choose the option with bad outcomes (i.e., the football game):

_Last week_ [Last year] Erica had the choice of going to her high school’s football game or going to a party out of town that same evening. In the end, Erica decided to go to the party, instead of going to the football game. The party had tasty food and beverages, and great music, and Erica had an awesome time! Erica called her friend to see how she was enjoying the football game. Her friend told her that it was cold and rainy, that their seats were so bad that they couldn’t see half of the field, and that the team was losing badly.

After reading the scenario about Erica, all participants advanced to the next screen where they encountered the dependent measure for that scenario, designed to assess whether they were framing Erica’s choice in terms of the chosen or non-chosen option. In particular, participants were asked to consider the question, “When Erica tells someone about this event, how is Erica most likely to begin the conversation?” They were asked to select from two possible responses. The first response corresponded to the chosen option, the second response corresponded to the non-chosen option. Both contained the temporal distance manipulation.

In particular, participants in the bad outcome conditions were asked to select between “I regret that I went to that high school football game _last week_ [last year]” (chosen option framing) and “I regret that I didn’t go to that party _last week_ [last year]” (non-chosen option framing). Participants in the good outcome conditions were asked to select between “I’m glad that I went to that party _last week_ [last year]” (chosen option
framing) and “I’m glad that I didn’t go to that high school football game last week [last year]” (non-chosen option framing). There was only one dependent measure for each scenario, as opposed to three as in the prior experiments.

After choosing their response, all participants read the second scenario, which was about an individual named Jim and pertained to a decision about which classmate to choose as a partner for a History class presentation: Mary or Sarah. Participants in the bad outcome conditions read a scenario in which Jim chose Mary (a bad choice) instead of Sarah (a good choice), whereas participants in the good outcome conditions read a similar scenario in which Jim made the opposite choice. Temporal distance was manipulated in the same way as in scenario one. After reading the scenario, all participants encountered the dependent measure for scenario two, which was conceptually similar to that of scenario one. (See Appendix B for full scenarios and wording for dependent measures.) At the end of the questionnaire all participants reported some demographic information and received a full debriefing.

**Results and Discussion**

No participants needed to be removed from the sample for skipping any of the dependent measures and, therefore, analyses included all 152 participants, with between 37 and 39 per condition. I predicted that participants who read a scenario in which the decision was made last week would be more likely to frame the decision in terms of the non-chosen option, compared with participants who read about the same decision made last year, regardless of the valence of the outcome.
To examine whether this was in fact the case, I first computed a composite measure, for each participant, containing the number of times the participant selected the non-chosen option across the two scenarios (range = 0 to 2, $M = .95$, $SD = .76$). I submitted this composite measure to a 2 (decision outcome: bad vs. good) x 2 (temporal distance: last week vs. last year) analysis of variance. Decision outcome significantly influenced the likelihood of framing the decision in terms of the non-chosen option ($F(1,148) = 25.25$, $p < .001$), such that decisions with bad outcomes were more likely to be framed in terms of the non-chosen option than decisions with good outcomes (bad outcomes: $M = 1.24$, $SD = .76$; good outcomes: $M = .67$, $SD = .64$). This finding is consistent with work suggesting that people experiencing bad outcomes will be more likely to think about “what could have been” than people experiencing good outcomes (Epstude & Roese, 2008; Isen & Geva, 1987; Tsiros & Mittal, 2000).

More important, and as predicted, temporal distance also significantly influenced framing ($F(1,148) = 4.14$, $p < .05$), such that decisions made last week were more likely to be framed in terms of the non-chosen option than decisions made last year (last week: $M = 1.07$, $SD = .79$; last year: $M = .84$, $SD = .71$; see Figure 3.1). Also as predicted, the effect of temporal distance on framing did not depend on the valence of the outcome, $F < 1$, $p > .70$. 
Figure 3.1
Number of times participants framed the decision in terms of the non-chosen option, depending on outcome of decision and temporal distance from the decision maker, combined across scenarios one and two in Experiment 3.

The results of Experiments 1 through 3 suggest that decreasing psychological distance from a choice event will increase the likelihood of framing the event in terms of the non-chosen option relative to the chosen option. However, to this point, framing has been measured by asking participants to respond to a dichotomous measure in which selecting the non-chosen option description always means not selecting the chosen option description, and vice-versa. This type of measure makes it difficult to distinguish whether decreases in distance made participants more likely to prefer the non-chosen option description, less likely to prefer the chosen option description, or both. Understanding how the salience of each option changes over time may allow for more precise predictions about the downstream consequences of distance on people’s reactions to
choice events. For this reason, Experiment 4 uses two measures of framing, one focused on the non-chosen option and one focused on the chosen option, in an attempt to tease apart these alternative interpretations of the results of Experiments 1 through 3.

Another purpose of Experiment 4 is to address a minor limitation of the dependent measures in Experiments 1 and 2. In particular, in both Experiments 1 and 2, the hypothesized effects of social distance emerged on the first framing question following each of the two scenarios, but failed to emerge on the second and third framing questions. A likely explanation for this inconsistency relates to the order in which the questions were asked. In the first question following each scenario, participants were presented with both a description of the scenario in terms of the chosen option, and a description of the scenario in terms of the non-chosen option. It seems probable that, as a result, the chosen and non-chosen options were equally salient to participants after responding to the first question, even if the two options were differentially salient to them when they read the scenarios. For that reason, administering additional dichotomous framing questions after the initial one likely did not allow for a valid test of the hypothesis.

Another possible explanation for this inconsistency is that the particular wording of the first pairs of response options was somehow better suited to test the hypothesis than was the wording of the second and third pairs. However, there is no apparent theoretical reason why this would be the case and, moreover, the measures in Experiment 3, which did reveal the predicted effects, were different from the first set of measures in Experiments 1 and 2. Additional research that varies the order of appearance of the three
pairs of response options from Experiments 1 and 2 could test this order explanation directly. However, providing converging evidence for my hypothesis using a different type of dependent measure could also help allay any concerns that the effects observed across the first three experiments are limited to the particular questions and response options used. Thus, an added benefit of Experiment 4 is that it uses a different type of framing measure. In particular, framing is measured indirectly through measures of accessibility, rather than directly through self-report.

**Experiment 4**

In Experiment 4, participants read about the same two bad outcome decisions as in Experiment 3 and learned that these events had occurred either last week or last year. Framing was measured by measuring the accessibility of the chosen and non-chosen options, with the logic that higher accessibility of an option should be associated with a higher likelihood of framing the choice event in those terms. Thus, I predicted that decreasing temporal distance would have different effects on the accessibility of the chosen and non-chosen options. I predicted that the non-chosen option would be more accessible among participants who read about decisions that occurred last week, compared with those who read about decisions that occurred last year.

My predictions for the accessibility of the chosen option were less certain. As noted earlier, existing work in psychological distance demonstrates that as distance decreases, the relative weight placed on secondary versus primary features in judgments, increases. Some of this work shows that at lower distances, people both weigh primary
features significantly less and secondary features significantly more than at higher distances (e.g., Henderson et al., 2006, Study 3; Liberman & Trope, 1998, Study 3). However, in other studies, distance changes the weight placed on either the secondary or the primary features, depending on the study (e.g., Henderson et al., 2006, Study 4; Liviatan et al., 2008, Study 2). Thus, it seemed possible that in Experiment 4, the chosen option, a primary feature, would be equally accessible across temporal distance conditions, or that it would be less accessible among participants who read about decisions that occurred last week, compared with last year.

Method

Participants

Seventy undergraduates (42 males and 28 females) participated in exchange for partial course credit in an introductory psychology course.

Procedure

Participants signed up for a laboratory experiment that involved thinking about decisions that others made, and answering questions about those decisions. When participants arrived at the lab, they were seated in individual cubicles to complete a computerized questionnaire. At the beginning of the questionnaire participants were asked to take the study in good faith and to follow all instructions to the best of their ability. All participants agreed to these terms.

Participants learned that they would read about some decisions made by a student either “just last week” or “last year,” depending on the temporal distance condition to
which they had been randomly assigned. Then they were told that for each scenario, they should read and understand it and continue on to answer some questions about it. They were instructed that some of the questions that they would answer during the study would be answered by clicking with the mouse, whereas others would involve pressing one of two keys on their keyboard, the F or the J key, depending on the side of the screen on which the answer appeared.

Before reading the scenario, participants had a chance to practice what it would be like to answer a question about the scenario using the F and J keys. This practice question also served as a reinforcement of the manipulation of temporal distance. Participants were instructed to put their hands on the keyboard, with their thumbs resting on the spacebar, their left pointer finger on the F key, and their right pointer finger on the J key. They were told to press the spacebar with their thumbs when they were ready to see a question about the scenario. On the next screen, the question, “When did the scenario occur?” appeared in the top, center of the screen for all participants. Underneath appeared two possible responses to this question, “last week” and “last year,” one on the bottom left side of the screen and the other on the bottom right of the screen (see Appendix C).

For this practice question, the correct response appeared on the left side of the screen (F key) for all participants. In other words, for participants who had been told that they would read about a decision made by a student “just last week,” the phrase “last week” appeared on the left side of the screen above the text “(press ‘F’ key),” whereas the phrase “last year” appeared on the right side of the screen above the text “(press ‘J’ key).” Meanwhile, for participants who had been told that they would read about a
decision made by a student “last year,” the phrase “last year” appeared on the left and “last week” on the right sides of the screen. Having the correct response to the practice question appear on the same (left) side for all participants meant that temporal distance condition was not confounded with which key should have been used to answer the practice question correctly. This procedural detail helped reduce the possibility that readiness to respond with one key versus the other could explain any temporal distance condition differences on the key dependent measure questions that appeared later.

Regardless of participants’ response to the practice question, all participants were then reminded that the scenarios they were about to read took place either “last week” or “last year,” depending on temporal distance condition. They were then asked to indicate whether they understood how to answer questions using the keyboard, by selecting “Yes” or “No.” At this point, all participants continued on to read the bad outcome version of the first scenario in Experiment 3, which pertained to Erica’s decision to attend her high school’s football game instead of a party. The instructions for the accessibility measure appeared across the following two screens. Participants were instructed to answer the next two questions as quickly as they could, while trying to be as accurate as they could. Then they received the same instructions as in the practice question, about placing their hands on the keyboard such that their pointer fingers lay on the F and J keys, and their thumbs on the spacebar. They pressed the spacebar with their thumbs to begin.

On the next two screens, participants saw the following questions (one per screen): “Which event did Erica attend?” and “Which event did Erica NOT attend?” As with the practice question, the question text for these two questions appeared in the top,
center of the screen. The response options were the same for both questions, and the same for all participants: “football game” always appeared on the bottom left side of the screen and required an F key press, while “party” always appeared on the bottom right side of the screen and required a J key press (see Appendix C). The order in which the two questions appeared was counterbalanced across participants. The time it took to select “football game” (the chosen option) in response to the question, “Which event did Erica attend?”, was used as the measure of accessibility of the chosen option. And, the time it took to select “party” (the non-chosen option) in response to the question, “Which event did Erica NOT attend?”, was used as the measure of accessibility of the non-chosen option.

Participants then went on to answer the same dichotomous choice framing question about Erica that appeared in Experiment 3, and two additional dichotomous choice framing questions of the same nature (but not in Experiment 3). They also responded to one question about the likelihood of Erica attending another football game and one question about her likelihood of attending another party. Participants answered these last two questions using 7-point, fully-labeled scales with the endpoints “extremely unlikely” and “extremely likely,” and the midpoint “neither unlikely nor likely.”

At this point all participants continued on to read the bad outcome version of the second scenario from Experiment 3, which pertained to Jim’s decision about a class presentation partner. (This scenario was identical to the one in Experiment 3 with the

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2 All of these questions were intended to measure framing; however, it was uncertain as to whether these questions would provide a good test of the hypothesis given their placement after the primary dependent measure, the accessibility questions. These additional questions are included here because they came in between the main dependent measure for scenario one, and scenario two.
exception of the names used; the chosen partner became “Beth,” while the non-chosen partner became “Allie” in Experiment 4.) The procedure for scenario two and its corresponding measures was the same as that followed for scenario one. After reading the scenario, participants responded to two questions that measured the accessibility of the chosen and non-chosen options – “Which partner did Jim choose?” and “Which partner did Jim NOT choose?” – to which the correct responses were “Beth” and “Allie,” respectively. Then participants answered the same dichotomous choice framing question about Jim that appeared in Experiment 3, two additional dichotomous choice framing questions of the same nature (but not in Experiment 3), and then one question each about the likelihood of Jim choosing Beth and Allie as partners for another presentation. Participants answered these last two questions using scale that was identical to the one from scenario one. Before leaving the session participants answered some additional questions about themselves, including their demographic characteristics, and received a full debriefing.

**Results and Discussion**

Two participants indicated in the manipulation check question after the practice response time task that they did not understand the instructions (1 in last week condition, 1 in last year condition). Seven participants gave incorrect responses on at least one of the four response time dependent measures (4 in last week, 3 in last year). Three additional participants had mean reaction times for the chosen and non-chosen questions that were greater than three standard deviations from the sample means for these two sets of
questions (2 in last week condition, 1 in last year condition). These 12 participants were excluded from analyses, leaving a final sample of 58 participants, with 33 in the last week condition and 25 in the last year condition.

Accessibility of the Chosen and Non-chosen Options

I predicted that the non-chosen option would be more accessible among participants who read about a decision that occurred last week, compared with those who read about a decision that occurred last year. My predictions for the accessibility of the chosen option were less clear, as it seemed possible that the chosen option would be equally accessible across temporal distance conditions, or that it would be less accessible among participants who read about a decision that occurred last week, compared with last year. To investigate my hypotheses, I first computed two composite measures of accessibility that combined data across both scenarios. I averaged the response times to the question for which the chosen option (i.e., football game [scenario one] and Beth [scenario two]) was the correct response \((r = .49, p < .001)\), to create a composite measure of accessibility of the chosen option, and I averaged the response times to the question for which the non-chosen option (i.e., party [scenario one] and Allie [scenario two]) was the correct response \((r = .74, p < .001)\), to create a composite measure of accessibility of the non-chosen option.

Then I performed a repeated measures analysis of variance predicting the accessibility of the chosen and non-chosen options from temporal distance condition, order in which the questions appeared (i.e., chosen first, non-chosen second, versus non-chosen first, chosen second), and their interaction. Overall, the chosen option was more
accessible than the non-chosen option, $F(1,54) = 26.87, p < .001$ (chosen option: $M = 1929$ ms, $SD = 77.37$; non-chosen option: $M = 2352$ ms, $SD = 87.64$). More important, as predicted, decreasing temporal distance had a marginally different effect on the accessibility of the chosen and non-chosen options, $F(1,54) = 3.72, p = .059$ (see Figure 3.2). The non-chosen option was more accessible when the decision was made last week, compared with last year, $F(1,54) = 4.02, p = .05$ (last week: $M = 2176$ ms, $SD = 115.30$; last year: $M = 2528$ ms, $SD = 132.02$), whereas the chosen option was equally accessible regardless of whether the decision was made last week or last year, $F < 1, p > .80$.

![Figure 3.2](image)

*Figure 3.2*
Response times to correctly indicate the chosen and non-chosen options, depending on temporal distance from the decision maker, combined across scenarios one and two in Experiment 4.

This effect of temporal distance on the accessibility of the chosen and non-chosen options was not moderated by the order in which the chosen and non-chosen questions
appeared, $F < 1, p > .30$. There was, however, an unpredicted main effect of order, such that participants who responded to the non-chosen question first were slower, overall, than participants who responded to the chosen question first ($F(1,54) = 5.20, p < .05$). This order effect was qualified by an unpredicted interaction between order and chosen/non-chosen question type, $F(1,54) = 93.77, p < .001$. The pattern of this interaction reveals that the difference between the response times to answer the chosen and non-chosen questions was greater when the non-chosen question came first ($F(1,54) = 104.06, p < .0001$), than when the chosen question came first ($F(1,54) = 10.80, p < .01$).

**Framing in Terms of the Chosen or Non-chosen Option on Self-report Framing Measures**

**Dichotomous choice framing measures.** I also examined whether decreasing temporal distance increased participants’ likelihood of framing the choice events in terms of the non-chosen option as assessed by the dichotomous choice framing questions. I computed a composite measure of the total number of times participants selected the non-chosen option across all the questions for the two scenarios (range = 0 to 6, $M = 3.60$, $SD = 1.38$). Temporal distance did not significantly influence the likelihood that participants would frame the decision in terms of the non-chosen option, $t(56) = 1.14, p > .20$. Given that only the first dichotomous measure in scenario one and in scenario two had been used in Experiment 3, I next examined whether temporal distance would influence the likelihood that participants would frame the decision in terms of the non-chosen option.
on a composite measure composed of only these two questions. There was also no effect of temporal distance on framing as assessed by these two questions, $t < 1, p > .50$.

The lack of an effect of temporal distance on these measures of framing is perhaps not surprising given that the dichotomous framing measures were administered directly after participants had responded to the two questions that required them to indicate which option had been chosen and not chosen by the decision maker. Thus, the questions designed to measure accessibility likely made the two options equally accessible, which may have eliminated the possibility of observing any effect of temporal distance on participants’ responses to the dichotomous framing measures.

**Future likelihood framing measures.** Finally, I examined whether temporal distance influenced participants’ judgments about the likelihood of decision makers in the scenarios choosing each of the two options, if faced with a similar choice in the future. Presumably, the more participants framed the events in terms of the (bad) chosen option, the more likely they would be to report that the decision maker would be unlikely to pursue that option again. The more they framed the event in terms of the non-chosen option, the more likely they would be to report that the decision maker would be likely to pursue that option next time. The likelihood scales ranged from “extremely unlikely” (-3), to “neither unlikely nor likely” (0), to “extremely likely” (+3). Thus, in particular, I predicted that participants in the last year condition (who were predicted to frame the event more in terms of the chosen option) would have more extreme negative values on the two questions about the chosen options, than participants in the last week condition. And I predicted that participants in the last week condition would have more extreme
positive values on the two questions about the non-chosen options than participants in the last year condition.

I computed a composite measure of participants’ judgments about how likely each of the two decision makers would be to choose the original chosen option again, by averaging the responses to the equivalent question across both scenarios \((r = .33, p < .05; M = -1.30, SD = .85)\). I also computed a composite measure of how likely each of the two decision makers would be to choose the original non-chosen option, in a similar manner \((r = .74, p < .001; M = 1.99, SD = .92)\). Temporal distance did not significantly influence the likelihood judgments, neither for the chosen option \((t < 1, p > .9)\), nor the non-chosen option \((t(56) = 1.24, p > .2)\), although participants did readily acknowledge that the decision makers would be more likely to pursue the non-chosen option than the chosen option \((t(57) = 20.42, p < .0001)\). It seems likely that the earlier questions related to accessibility, which did show the predicted effects of temporal distance, along with the dichotomous choice questions that followed, made the chosen and non-chosen options equally accessible for all participants, and thus did not provide a valid test of my hypothesis.
CHAPTER 4
GENERAL DISCUSSION

Four experiments demonstrate that as choice events become psychologically closer, people become increasingly more likely to frame those events in terms of the non-chosen option. Experiment 1 revealed that when a bad choice is made by oneself, compared with a socially distant other, this choice event is more likely to be framed in terms of the non-chosen option. Experiment 2 extended these results by demonstrating that a bad choice made by either oneself or a close other was more likely than a bad choice made by a distant other, to be framed in terms of the non-chosen option. Experiment 3 used a different set of scenarios to examine whether the effects from the first two experiments would hold when psychological distance came in the form of temporal distance, and when the choice outcomes were good. Conceptually consistent with the results from Experiments 1 and 2, this experiment showed that at lower temporal distances people were more likely to frame the event in terms of the non-chosen option. In addition, this effect held for choice events with good outcomes.

Using a response time measure of accessibility of the chosen and non-chosen options, Experiment 4 helped to clarify the nature of the effects observed in Experiments 1 – 3. In particular, Experiment 4 provided some initial evidence that the effects of distance on the dichotomous measures of framing in the first three experiments were due
to changes only in the salience of the non-chosen option, and not due to changes in the salience of the chosen option. As an added benefit, Experiment 4 provided converging evidence for the proposed effect of distance on framing using a measure of framing that was different from that used in the first three experiments. This suggests that those earlier findings were not simply an artifact of the particular type of framing measure used. These findings have implications for understanding how people feel after choice events, how they resolve post-decision dissonance, and how they make future choices. The following pages discuss some questions inspired by the results of these four experiments and integrate the results of the present research with existing theories and findings in social cognition and judgment and decision making.

**Applicability of the Findings to Real-life Decisions**

Generalizing from the present findings to real-life decisions suggests that people should be more likely to frame their own or a close other’s real decision, and a personal decision from their own recent past in terms of the non-chosen option, compared with choice events that are more distant on these dimensions. However, isolating the role of psychological distance in this effect, apart from information availability, may be more challenging in real-life decision contexts than it was in the scenario methodology of the present experiments. One possibility for holding constant the availability of information about the chosen and non-chosen options within real-life decisions might involve asking participants in an initial session to list the chosen and non-chosen options for a choice event that is either psychologically close or distant. A later session would measure the
framing of this choice event using a dichotomous measure similar to the ones in the present experiments but customized to include response options matching the content of the particular chosen and non-chosen options participants indicated earlier. Requiring participants to list both the chosen and non-chosen options in the initial session helps to ensure that information about both choice options is equally available, while delaying the measure of framing helps to ensure that the two options are not equally salient.

Replicating the present findings with real-life choice events will provide converging evidence for the proposed relationship between psychological distance and framing, and will contribute to demonstrating the broader implications of these findings. One might wonder to what extent thinking about psychologically closer choice events in terms of the non-chosen option is an adaptive tendency? One way in which it may be adaptive relates to how people behaviorally cope with bad decisions. When behavioral coping strategies are targeted at the non-chosen option, they will likely be more effective the closer the choice event is temporally or spatially. For example, exchange polices for product purchases often have an expiration date. Thus, temporally near choice events allow the possibility of exchanging the chosen for non-chosen more so than temporally distant events. Choice events that occurred in a spatially near location also allow for an easier time exchanging the chosen for the non-chosen than choice events occurring in spatially distant locations. At higher distances, there may be less of a reason for the non-chosen to be salient, because often one cannot obtain the non-chosen option from a distance.
Links to Construal Level Theory

The results of Experiments 1 and 2, which pertain to social distance, were conceptually consistent with the results of Experiments 3 and 4, which pertain to temporal distance. According to construal level theory, temporal and social distance are dimensions of psychological distance and as such should similarly influence the process by which people mentally represent events (Trope & Liberman, 2010). As another dimension of psychological distance, one’s spatial distance from the location of the choice event should similarly influence how the event is framed, with events occurring in nearby locations more likely to be framed in terms of the non-chosen option than events occurring in more distant locations. In addition, while the present research examined how retrospective temporal distance influences framing, it is worthwhile to consider whether the present findings will generalize to choice events that occur in the near or distant future, and the implications these findings might have. (A later section will discuss this possibility in more detail.)

A construal level theory account of the present findings suggests that changes in psychological distance led to changes in the process by which choice events were mentally represented, which led to the observed effects on the framing measures. Thus, if a measure of information-processing were to be administered before the framing measures in the present experiments, participants who read about more psychologically close choice events should demonstrate that they are processing incoming information in lower-level terms. In addition, if the process of mental representation were manipulated directly – that is, if participants were induced to process any incoming information in
either lower-level or higher-level terms – and then participants were exposed to
information about a choice event, I would expect to see conceptually similar effects as
those observed in the present experiments; in particular, those induced to process
information in lower-level (versus higher-level) terms would be more likely to frame the
choice event in terms of the non-chosen option.

**Contribution to determining which features are primary versus secondary.**
The results of the present research suggest another way to identify which aspects of
events should be considered “primary,” and which should be considered “secondary.”
Existing work suggests that primary features of objects or events are those that are related
to the individual’s goals or values (Trope & Liberman, 2010). Accordingly, one’s goals
and values have been shown to guide one’s judgments, intentions, and behaviors more
strongly as distance increases and as events are construed in higher-level terms (e.g.,
Eyal, Sagristano, Trope, Liberman, & Chaiken, 2009; Fujita, Trope, Liberman, & Levin-
Sagi, 2006). However, in the scenarios in the present experiments, the chosen options
were not designed to be more relevant to people’s goals or values than the non-chosen
options. For example, there is no reason to believe that undergraduates should value
visiting friends (“chosen” in Experiment 1) more than visiting family (“non-chosen” in
Experiment 1), or attending a high school football game (“chosen” in Experiment 3) more
than attending a party (“non-chosen” in Experiment 3).

Thus, given that the chosen options were no more goal-relevant or valued than the
non-chosen options (and vice-versa) – at least not consistently for all participants across
all scenarios – construal level theory would not predict that distance would influence
framing on the basis of value differences. However, if, all else equal in terms of the value-relevant nature of the chosen and non-chosen options, chosen options are primary features and non-chosen options are secondary features of choice events, then construal level theory would make the predictions that are supported by the present findings. Therefore, the results of the present research provide some initial evidence that chosen options are primary features and non-chosen options are secondary features of choice events, which suggests that construal level theory has even broader applicability than previously demonstrated.

Psychological distance and the experience of different types of emotions. It is also interesting to think about how the differential salience of the chosen and non-chosen options caused by changes in psychological distance may lead to different types of emotional experiences after choice events. The interaction pattern in Experiment 4 suggests that when choice events are less distant, there is a higher likelihood that both the chosen and non-chosen options will be salient, compared with when the choice events are more distant (where, it is relatively more likely that the chosen option will be more salient than the non-chosen). Thus it seems possible that thinking about choice events in the near term is more likely to lead one to compare the outcomes of the chosen and non-chosen options than thinking about choice events in the distant term. At the same time, thinking about more distant choice events might be more likely to lead to a comparison of the outcome of the chosen option to one’s expectations about how the chosen option should have turned out (given that the non-chosen option is relatively less salient at greater distances).
While Experiment 3 focused on regret as the emotion that would be elicited upon learning of a decision’s bad outcomes, disappointment is an emotion that also can occur in the presence of bad outcomes – in particular when these outcomes disconfirm one’s expectations. Thus, it seems possible that choice events gone wrong might be more likely to lead to regret when psychological distance is lower because this is when a comparison between the chosen and non-chosen is more likely. When psychological distance is greater, feelings of disappointment may be more likely than feelings of regret, because at this point comparisons are more likely to take the form of comparisons between the chosen option and one’s expectations for the chosen option (not between the chosen option and the missed outcomes associated with the non-chosen option).

Disappointment and regret are associated with different action tendencies. For example, regret leads to more active attempts to undo the negative outcomes, and anticipating regret leads people to deliberate longer and gather more information about choice options (Reb, 2008; Zeelenberg & Pieters, 2004; Zeelenberg, Van Dijk, Manstead, Van der Pligt, 1998). Disappointment after a choice event leads to attending to other goals and blaming the circumstances or other people for what happened, and possibly to pursuing safer options in a future choice (Zeelenberg & Pieters, 2004; Zeelenberg, Van Dijk, Manstead, Van der Pligt, 1998). Given these differences, distinguishing exactly which emotion people are experiencing becomes important.

That psychological distance from an event might influence the particular types of emotions that one experiences has recently been proposed (Trope & Liberman, 2010). In particular, Trope and Liberman propose that certain emotions require a more high-level
construal of the situation than others. Regret is identified as one of these emotions because, as a counterfactual emotion, regret “involve[s] consideration of hypothetical alternatives to reality,” (p. 456). Hypotheticality is a dimension of psychological distance, such that construing situations in higher-level terms makes it more likely that hypothetical events will be considered (Trope & Liberman, 2010). Their reasoning implies that regret would be more intense at greater distances, while the present findings and the logic outlined earlier imply the opposite.

One key difference between the types of regrettable events from the present research and the types of regrettable events that are necessary to make the prediction that Trope and Liberman make is the nature of the non-chosen option. In particular, in the present research there is one specific, non-chosen alternative that has specific and actual (but unattained) outcomes. It seems more likely that Trope and Liberman are referring to situations in which there may be many, unspecified non-chosen alternatives and many, unspecified possible outcomes associated with them. Thus it seems possible that distance could either increase or decrease the intensity of regret, depending on how much specific information is available about the outcome of the non-chosen option.

**Prospective temporal distance, choices, and opportunities.** It seems worthwhile to think about whether the present findings are applicable to decisions that will be made at some point in the future. For example, it is often the case that people know about an upcoming choice that they will have to make. And in some cases they even have an idea of what they will choose, even though, if pressed, they may be able to name an alternative, less preferred option. Would prospective temporal distance from the
choice event influence the salience of each option? The present findings suggest that accessibility for the less preferred, soon-to-be non-chosen option will be higher among participants thinking about a near future decision than a distant future decision. If this is the case, there may be some interesting implications.

One potential implication starts with the idea that decisions can be classified either as “choices” or as “opportunities” (Jones, Frisch, Yurak, & Kim, 1998). By this distinction, the type of decision most relevant to the present research is better termed a choice, that is, “a decision in which an individual explicitly considers two or more alternative courses of action and must choose between them” (Jones et al., 1998, p. 213). Other types of decisions, better termed “opportunities,” involve “a situation in which an individual decides whether or not to pursue a single option that is presented to him or her” (Jones et al., 1998, p. 213). Even though people do tend to understand this distinction and can categorize decisions from their own lives on this basis (Jones et al., 1998), it seems that many decisions could easily be converted from one of these categories to the other.

For example, a man might have his heart set on buying a new, top-of-the-line Samsung® LED HDTV, and he may know that once he receives his yearly bonus he will have the opportunity to purchase it. He may spend weeks thinking about this future purchase opportunity and, when the bonus arrives, make his way to the electronics store. At that point, however, he may be tempted for the first time by other brands of televisions and other, equally priced items. Thus, what once was an opportunity to buy the Samsung® has turned into a choice, given that other options are salient. Thus it seems
possible that changing psychological distance could influence whether the decision as a whole is better classified as a choice or an opportunity. At greater prospective temporal distance, people may already have in mind an opportunity they want to pursue. As temporal distance from the “moment of truth” nears, however, this opportunity starts to seem more like a choice between the previously considered course of action, and one or more courses of action not previously considered.

**Psychological distance and counterfactual thinking.** The present findings may have implications for the relationship between psychological distance and counterfactual thinking. In particular, these findings suggest the possibility that people consider different types of alternatives to reality or, counterfactual thoughts, when events are psychologically near versus distant. In each experiment participants were provided with information about the actual outcomes of both the chosen option and the non-chosen option. Thus, each decision maker in the scenarios (and participants as they were reading them) could have pondered two types of alternative realities: one in which the chosen option had not been chosen and the associated outcomes not obtained, and/or one in which the non-chosen option actually had been chosen and the associated, previously missed outcomes actually obtained.

The former is known as a subtractive counterfactual because events that actually occurred are removed to construct an alternative reality in which those events did not occur, while the latter is known as an additive counterfactual because new antecedents are added to construct an alternative reality in which they did occur (Roese & Olson, 1993). One way of thinking about the present findings is that by decreasing distance
people’s tendency to consider additive counterfactuals, relative to subtractive counterfactuals, is enhanced. This interpretation must be stated tentatively, however, because the particular measures used in the present experiments did not provide a good test of this idea. In particular, the response options were worded factually (e.g., “You chose to visit your friend” and “You chose not to visit your family”), not counterfactually (e.g., “If only you hadn’t chosen to visit your friend” and “If only you had chosen to visit your family”).

The relationship between distance and counterfactual thinking has not received much attention in the literature. While some existing work suggests that temporal distance, and level of construal more generally, do not impact counterfactual thinking (Burrus & Roese, 2006), that work did not examine any specific types of counterfactual thoughts. Future studies targeted toward exploring the relationship between distance and counterfactual thinking could provide more direct support for the proposal that decreasing psychological distance increases the relative proportion of additive versus subtractive counterfactual thoughts generated.

Links to Work on Post-decision Dissonance

The present research also has implications for determining the strategies by which people resolve post-decision dissonance after a difficult choice. After people make choices between equally favorable (or unfavorable) alternatives, they often experience dissonance given that, generally, the chosen option will have at least some bad attributes that the non-chosen does not and that the non-chosen will have at least some good
attributes that the chosen does not. And dissonance is reduced after people change their evaluation of the chosen option to be more favorable, and/or change their evaluation of the non-chosen option to be less favorable (e.g., Brehm, 1956; Festinger, 1964). This spreading of evaluations has been shown to be driven by increases in the evaluation of the chosen option in cases where both choice options are relatively favorable, but by decreases in the evaluation of the non-chosen when both options are relatively unfavorable (Shultz, Leveille, & Lepper, 1999). However, other than this factor, little is known about the factors that drive the particular pattern of spreading – in other words, that determine the extent to which people’s post-decision evaluations of the chosen option will become more positive, their evaluations of the non-chosen option will become more negative, or their evaluations of both options will change (Harmon-Jones, Harmon-Jones, Fearn, Sigelman, & Johnson, 2008).

In the present research, temporal and social distance influenced the extent to which people thought about the choice event in terms of the chosen and non-chosen option. Thus, it seems possible that psychological distance may be an additional factor that influences how spreading occurs. In particular, at lower distances, the alternatives may be spread by both increasing the evaluation of the chosen and decreasing the evaluation of the non-chosen, while at higher distances alternatives may be spread mostly by increasing the evaluation of the chosen option. Using temporal distance as an example, this proposal would suggest that if Julie made a decision to purchase the Toyota Prius over the Chevy Malibu yesterday, she will resolve any post-decision dissonance she is experiencing today by increasing her evaluation of the Prius and denigrating the
Malibu. But when Julie thinks back on this decision years from now, her attitude toward the Malibu should be less negative than it is today.

In addition, people are capable of experiencing vicarious dissonance and subsequent attitude change if a member of an in-group with which they are identified engages in an attitude-discrepant behavior; higher identification with the in-group is associated with more vicarious dissonance and more subsequent attitude change (Cooper & Hogg, 2007). Although the work on vicarious dissonance thus far has been confined to only one dissonance paradigm (induced-compliance), there is no apparent reason why the free-choice paradigm described earlier would not produce similar effects. That is, spreading of alternatives would occur among observers of an in-group member who makes a difficult decision among two options, and this spreading would be larger the more socially close the decision maker (i.e., in-group member) is to the observer.

Combined with the work on vicarious dissonance, the present findings suggest the possibility that the differences in the amount of spreading after choices are made by a close versus distant other would be produced by changes in the amount that the non-chosen option is denigrated, not by changes in the amount the chosen is enhanced. So for closer others, the alternatives may be spread by both increasing one’s own evaluation of the chosen and decreasing one’s evaluation of the non-chosen, while for relatively more distant others alternatives may be spread mostly by increasing one’s evaluation of the chosen option.
**Links to Work in Decision Making**

The present research contributes to existing work on the framing of decisions, most of which shows that changing the way choice options are framed (e.g., in terms of gains versus losses; Tversky & Kahneman, 1981) can change preferences. The present research addresses framing in a slightly different way. While past research pertained to the framing of individual options, the present research pertains to the framing of the entire choice event (in terms of either one option or the other), and while past research investigated the effects of framing on people’s preferences, the present research investigates the causes of framing after a choice has been made.

**Relation to action and inaction regrets.** Given that the majority of the scenarios employed in the present research pertained to decisions with bad outcomes for the decision maker, it seems relevant to consider how the implications of the present research might overlap with the implications suggested by existing work on regrettable events. In particular, the differences between regrettable actions (e.g., asking out a romantic interest only to get bluntly turned down) and regrettable inactions (e.g., not asking out a romantic interest and spending many years alone) have received much attention. For example, feelings of regret for one’s actions have been proposed to decrease over time, while feelings of regret for one’s inactions have been proposed to remain constant or even increase over time (Gilovich & Medvec, 1995). And, broadly consistent with this claim, over time, the perceived consequences of regretted actions remain constant, whereas the perceived consequences of regretted inactions increase (Rajagopal, Raju, & Unnava, 2006).
In addition, regretted actions and failures to act tend to elicit different categories of emotions. Regretted actions elicit mostly “hot” emotions, such as anger and guilt, while failures to act elicit despair or wistfulness (Gilovich, Medvec, & Kahneman, 1998). Other work suggests that when not acting is seen as the norm or when one has a natural inclination to not act, actions with bad outcomes produce more regret than failures to act, but this reverses when action is seen as the norm or when one has a natural inclination to act (Seta, McElroy, & Seta, 2001; Zeelenberg, Van den Bos, Van Dijk, & Pieters, 2002). And, failing to act on an opportunity can result in “inaction inertia,” in which one does not act on a subsequent opportunity that is good in absolute terms but inferior to an opportunity one passed up earlier (Tykocinski & Pittman, 1998).

Thus, an open question is whether regrettable choice events of the sort in the present research can be mapped onto action and inaction regrets. In other words, is a regrettable choice event that is framed in terms of the chosen option akin to having engaged in a regret of action, and is a regrettable choice event framed in terms of the non-chosen option akin to having engaged in a regret of inaction? If this mapping is valid, then the downstream, differential consequences of engaging in regrettable actions versus inactions should apply. It appears that even though there are similarities between these two pairs of regrettable events, a comparison of the present experiments with the empirical work on actions and inactions reveals some important differences, and suggests that framing a choice event as chosen versus non-chosen will not always have the same implications as engaging in regrettable actions and inactions.
**Actions and inactions stem from opportunities.** Generally speaking, in the scenarios in the studies on action and inaction regrets, the individual is deciding whether or not to stick with an option he already has (inaction), or switch to another option (action). For example, in Kahneman & Tversky’s (1982) classic study about action and inaction regrets, Mr. George, the regretful actor, owned stock in Company B and “switched to stock in Company A,” while Mr. Paul, the non-actor, owned stock in company A and “considered switching to stock in Company B but decided against it” (p.173). In another scenario study of this nature, two unhappy students consider transferring universities: one decides to transfer, remains unhappy, and wishes he had stayed (regretful actor), while one decides to stay, remains unhappy, and wishes he had transferred (regretful non-actor) (Gilovich & Medvec, 1994). Other scenarios from the action and inaction regret work take a similar form (e.g., Byrne & McEleney, 2000; Li & Liang, 2007; McElroy & Dowd, 2007).

Meanwhile, in the scenarios in the present experiments, the decision maker does not start out with either option. Rather, the decision maker is making a choice between two explicit options that he does not have; if no choice is made, the decision maker will be left without either of the alternatives. Thus, it seems that the circumstances that give rise to action and inaction regrets are different from those that give rise to the regret that stems from chosen and non-chosen options.

In particular, the distinction between choices and opportunities, outlined earlier, appears to be relevant. Action and inaction regrets may be better classified under the heading of “opportunities,” rather than “choices” (Pieters & Zeelenberg, 2007), while
decisions relevant to the present research are better classified as “choices” than “opportunities.” Some of the mechanisms used to explain the different patterns of results for action regrets and inaction regrets would not apply to the types of choices used in the present experiments, and would not apply to choices more generally. For example, the temporal pattern of regret described earlier requires that inactions, which are more regrettable than actions in the long-run, have regrettable consequences that are not immediately apparent, and that are relatively hypothetical (Gilovich & Medvec, 1995; Rajagopal, Raju, & Unnava, 2006); “what grows over time … is… the recognition that there is a large consequence to be regretted” (Gilovich, Medvec, & Kahneman, 1998, p. 603). Given that choices – in contrast to opportunities – involve two (or more) explicit options, it seems that the regrettable consequences of not having selected the non-chosen option are less likely to be hypothetical and may not take as long to emerge as the regrettable consequences of an inaction. Although it is an interesting question it is beyond the purpose of the present work to make any strong claims about the relationship between action and inaction regrets and regrets stemming from the chosen and non-chosen options. However, it appears that there is some overlap between the two classes of events but that at least in some cases the distinction between choices and opportunities would prevent a direct mapping of one onto the other.
Conclusion

I shall be telling this with a sigh
Somewhere ages and ages hence:
Two roads diverged in a wood, and I –
I took the one less traveled by,
And that has made all the difference.

-Robert Frost, *The Road Not Taken*

Frost clearly believes that his choice has had an impact on his life – but would he describe his choice in terms of the path he chose, or the path he did not choose and, as he becomes more and more removed from the direct experience of his walk, how will the way he thinks about his choice change? Given that how people think about choices can potentially influence the particular emotions people feel after choice events, how post-decision dissonance is regulated, and the future choices people make, it may make a big difference whether people frame choice events in terms of the chosen or non-chosen options. Changes in the psychological distance from a choice event can change the extent to which people frame those events in these two ways. Thus, the present research suggests that Frost’s unintended insights may be correct: in composing this poem shortly after his walk he appears to focus more on “the road not taken,” but he also implies that as he looks back on his walk, “ages and ages hence,” he may very well describe this event as one in which he *chose* the less traveled path.
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APPENDIX A
Question wording and response options for framing measures in Experiment 1
Select the statement that best fits the events in the story.

**SCENARIO 1 – Response Options**

<table>
<thead>
<tr>
<th></th>
<th>Chosen Option Framing</th>
<th>Non-Chosen Option Framing</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Q1</strong></td>
<td>You chose to visit your friend and had a pretty lousy time.</td>
<td>You didn't choose to visit your family and you could have had a lot of fun with them.</td>
</tr>
<tr>
<td><strong>Q2</strong></td>
<td>You went to visit your friend, and you wish you hadn't.</td>
<td>You didn't go to visit your family, and you wish you had.</td>
</tr>
<tr>
<td><strong>Q3</strong></td>
<td>You had an unpleasant weekend at your friend's university.</td>
<td>You missed out on a good time with your family.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Chosen Option Framing</th>
<th>Non-Chosen Option Framing</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Q1</strong></td>
<td>Kendra chose to visit her friend and had a pretty lousy time.</td>
<td>Kendra didn't choose to visit her family and she could have had a lot of fun with them.</td>
</tr>
<tr>
<td><strong>Q2</strong></td>
<td>Kendra went to visit her friend, and she wishes she hadn't.</td>
<td>Kendra didn't go to visit her family, and she wishes she had.</td>
</tr>
<tr>
<td><strong>Q3</strong></td>
<td>Kendra had an unpleasant weekend at her friend's university.</td>
<td>Kendra missed out on a good time with her family.</td>
</tr>
</tbody>
</table>

**SCENARIO 2 – Response Options**

<table>
<thead>
<tr>
<th></th>
<th>Chosen Option Framing</th>
<th>Non-Chosen Option Framing</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Q1</strong></td>
<td>John chose to see The Darkness Beneath Us and the movie wasn't good.</td>
<td>John didn't choose to see Strangers Around the Corner, and the movie might have been really good.</td>
</tr>
<tr>
<td><strong>Q2</strong></td>
<td>John went to see The Darkness Beneath Us, and he wishes he hadn't.</td>
<td>John didn't go to see Strangers Around the Corner, and he wishes he had.</td>
</tr>
<tr>
<td><strong>Q3</strong></td>
<td>John wound up having a bad time with his date.</td>
<td>John missed out on having a good time with his date.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
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</tr>
<tr>
<td><strong>Q3</strong></td>
<td>You wound up having a bad time with your date.</td>
<td>You missed out on having a good time with your date.</td>
</tr>
</tbody>
</table>
APPENDIX B
Scenario two, and corresponding framing measures from Experiment 3

Bad outcome conditions – scenario:
*Last week* [Last year] Jim had to choose a partner to work with on a group presentation for his History class. Jim had the choice of working with his friend Mary, or his friend Sarah. In the end, Jim chose Mary, instead of choosing Sarah. On the day of the presentations, Mary forgot some of her presentation notes and Jim had to correct her explanations of some of the material. Meanwhile, Jim noticed that Sarah was completely prepared for her group’s presentation, and was a great public speaker.

Bad outcome conditions – measure:
*When Jim tells someone about this event, how is Jim most likely to begin the conversation?*

<table>
<thead>
<tr>
<th>Chosen Option Framing</th>
<th>Non-Chosen Option Framing</th>
</tr>
</thead>
<tbody>
<tr>
<td>I regret that I chose to work with Mary on that History project <em>last week</em> [last year].</td>
<td>I regret that I didn’t choose to work with Sarah on that History project <em>last week</em> [last year].</td>
</tr>
</tbody>
</table>

Good outcome conditions – scenario:
*Last week* [Last year] Jim had to choose a partner to work with on a group presentation for his History class. Jim had the choice of working with his friend Mary, or his friend Sarah. In the end, Jim chose Sarah, instead of choosing Mary. On the day of the presentations, Sarah was completely prepared for their presentation, and was a great public speaker. Meanwhile, Jim noticed that Mary forgot some of her presentation notes and her partner had to correct Mary’s explanations of some of the material.

Good outcome conditions – measure:
*When Jim tells someone about this event, how is Jim most likely to begin the conversation?*

<table>
<thead>
<tr>
<th>Chosen Option Framing</th>
<th>Non-Chosen Option Framing</th>
</tr>
</thead>
<tbody>
<tr>
<td>I’m glad that I chose to work with Sarah on that History project <em>last week</em> [last year].</td>
<td>I’m glad that I didn’t choose to work with Mary on that History project <em>last week</em> [last year].</td>
</tr>
</tbody>
</table>

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APPENDIX C
Screen shots from Experiment 4
Practice question prior to scenario one, which differed by temporal distance condition

Last week condition:

When did the scenario occur?

last week (press “F” key)  last year (press “J” key)

Last year condition:

When did the scenario occur?

last year (press “F” key)  last week (press “J” key)
Measures of accessibility of chosen and non-chosen options for scenarios one and two

Order of questions was counterbalanced in actual study. Order that appears below is: chosen first, non-chosen second.

Scenario 1:

<table>
<thead>
<tr>
<th>Which event did Erica attend?</th>
<th>Which event did Erica NOT attend?</th>
</tr>
</thead>
<tbody>
<tr>
<td>football game</td>
<td>party game</td>
</tr>
<tr>
<td>party</td>
<td>football game</td>
</tr>
</tbody>
</table>

Scenario 2:

<table>
<thead>
<tr>
<th>Which partner did Jim choose?</th>
<th>Which partner did Jim NOT choose?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beth</td>
<td>Allie</td>
</tr>
<tr>
<td>Beth</td>
<td>Allie</td>
</tr>
</tbody>
</table>