

How far to the road not taken?:

The effect of psychological distance on counterfactual direction

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Abstract

Upward and downward counterfactuals serve the distinct motivational functions of self-improvement and self-enhancement, respectively. Drawing on construal level theory, which contends that increasing psychological distance from an event leads people to focus on high-level, self-improvement versus low-level, self-enhancement goals, we propose that distance will alter counterfactual direction in a way that satisfies these distinct motives. We found that people generated more downward counterfactuals about recent versus distant past events, while they tended to generate more upward counterfactuals about distant versus recent past events (Experiment 1). Consistent results were obtained for social distance (Experiment 2). Experiment 3 demonstrated that distance affects the direction of open-ended counterfactual thoughts. Finally, Experiment 4 explored a potential mechanism, demonstrating that manipulating temporal distance produced changes in participants' self-improvement versus self-enhancement motivations when responding to negative events. Future directions and broader implications for self-control, social support, empathy, and learning are discussed.

Keywords: psychological distance, construal, counterfactuals, counterfactual direction, motivation

How far to the road not taken?:

The effect of psychological distance on counterfactual direction

If only I had taken my car instead of relied on public transportation, I would not have missed my flight; if only I had flossed every day, I would not have had a cavity; if only I had taken the other route, I would not be stuck in this awful traffic. People are adept at imagining alternatives that would have been better than the reality (i.e., upward counterfactuals). At the same time, people also think of alternative worlds that would have been much worse (i.e., downward counterfactuals): I missed my flight, but at least I did not have to wait too long for the next one; I had a cavity, but at least I did not need a root canal; I was stuck in traffic, but at least my favorite radio show was on. These different counterfactuals have distinct consequences for individuals. Upward counterfactuals are the foundation of the emotional experience of regret (Gilovich & Medvec, 1995), and are an important means by which individuals reason about the causes of past outcomes (Gavanski & Wells, 1989) and form intentions about future behaviors (Smallman & Roese, 2009). In contrast, downward counterfactuals can help individuals improve their satisfaction and self-enhance following negative or ambiguous outcomes (Roese, 1994; White & Lehmann, 2005). Whether individuals generate upward or downward counterfactuals after a negative event thus has clear implications for the emotional and behavioral consequences of that event. Past work has focused on the situational differences that make upward versus downward counterfactuals more likely (Markman, Gavanski, Sherman, & McMullen, 1993; McMullen, Markman, & Gavanski, 1995; Roese, 1994). However, an individual's relationship to the same objective situation may also affect their goals in processing the situation, and thus their cognitions about this event. A growing body of literature has established that individuals process events differently when they are psychologically distant versus proximal to the self

(Freitas, Salovey, & Liberman, 2001; Fujita, 2008; Fujita, Trope, Liberman, & Levin-Sagi, 2006). In the present research, we propose that an event's psychological distance from the self can also affect direction of counterfactual thought, independent of the event's specific content.

Specifically, the present research investigated whether and how psychological distance of events from the self affects the ease with which people can generate upward versus downward counterfactuals. Any event that is removed from a person's direct experience can be described as psychologically distant (Trope & Liberman, 2010). For example, events that have taken place in the distant past or will take place in the distant future, those that occur to other people, and in remote locations are all relatively more distant than those that have occurred in the near past or will occur in the near future, those that occur to the self, and in proximal locations. Psychological distance affects individuals' motivational focus: increasing psychological distance from an event triggers a focus on self-improvement over self-enhancement goals (Freitas et al., 2001). In other words, a distant perspective should facilitate cognitions consistent with self-improvement, whereas a proximal perspective on the same event should prompt cognitions focused on self-enhancement. Given that upward counterfactuals satisfy the motive of self-improvement by facilitating future preparedness and downward counterfactuals satisfy a self-enhancement motive by increasing immediate satisfaction (Epstude & Roese, 2008), we predicted that the ease of generating upward versus downward counterfactuals would be greater for psychologically distant versus near events, respectively.

Upward versus Downward Counterfactual Thinking

Imagining "what might have been" or engaging in counterfactual thinking (Kahneman & Miller, 1986), can involve upward counterfactuals, a consideration of better possible worlds, or downward counterfactuals, a consideration of worse possible worlds (Markman et al., 1993;

McMullen et al., 1995; Roese, 1994). Past research established that people are more likely to generate upward than downward counterfactuals following the experience of negative events (Roese & Olson, 1997). This tendency was demonstrated across multiple domains and paradigms including recalled negative events (Mandel, 2003; Roese & Olson, 1997), vignettes of negative life events (e.g., Galinsky & Moskowitz, 2000; Roese & Hur, 1997), and failure experiences created in the laboratory (e.g., Markman et al., 1993; Roese & Hur, 1997).

According to the functional account of counterfactuals, upward counterfactuals serve a preparatory or self-improvement motive while downward counterfactuals serve an affective or self-enhancement motive (Epstude & Roese, 2008; Roese, 1994). Upward counterfactual thoughts have been shown to occur with greater frequency than downward counterfactual thoughts following events that are expected to repeat (versus not repeat; Markman et al., 1993) and that are controllable (versus uncontrollable; Roese & Olson, 1995). This is because people are more likely to be concerned about self-improvement for these types of events. Providing more direct evidence for the function of upward counterfactuals, Roese (1994) found that generating upward counterfactuals led to increased intentions to behave in a way that would improve subsequent performance, and actually led to better performance. In contrast, in this same research, generating downward counterfactuals led to relatively greater positive affect, consistent with the self-enhancement function of downward counterfactuals. White and Lehman (2005) also found that people generated more downward counterfactuals when they were given the goal to enhance the self versus the goal to improve or no goal. In short, the direction of counterfactual thought is influenced by the individual's current goals of self-enhancement versus self-improvement.

The Role of Psychological Distance

Psychological distance, how close an event feels in time, space, or social distance, is one influence on individuals' self-enhancement versus self-improvement goals. Drawing on Construal Level Theory of psychological distance (CLT; Trope & Liberman, 2010) we propose that since psychological distance from an event shifts people's focus on self-improvement versus self-enhancement goals, it will likewise alter the direction of counterfactual thinking.

CLT explains how psychological distance (e.g., in time, space, or social distance) affects individuals' representations, preferences, and goals. Increased distance leads to representations of those events that emphasize central and defining aspects (i.e., high-level construal) while proximity leads to representations that include secondary and peripheral details (i.e., low-level construal). Psychological distance also affects preferences. For example, in deciding whether or not to attend a guest lecture, participants placed greater weight on its desirability (e.g., whether it would be interesting or uninteresting) when the lecture was imagined to occur in the distant future and on its feasibility (e.g., whether it would take place at a convenient vs. inconvenient time) when it was to take place in the near future (Liberman & Trope, 1998). The former is ends-focused and thus more central and primary as compared to the latter which is more means-focused and thus relatively more peripheral and secondary. Within the context of goals, self-improvement concerns are higher-level than self-enhancement concerns because the former reflect concerns that are more global (vs. local) and aimed at long-term (vs. short-term) benefit (Freitas et al., 2001). Accordingly, Freitas et al. (2001) found that people preferred negative, liability-focused versus positive, strength-focused feedback and upward versus downward social comparison for temporally distant versus proximal events. As previously noted, research has also linked upward and downward counterfactuals with self-improvement versus self-enhancement motives, respectively. We therefore predict that greater distance from events (which triggers high-level construal) should lead to an increased propensity to think in terms of upward versus downward counterfactuals.

Previous work examining the effect of distance on counterfactual thinking has largely focused on the ways that distance modulates the downstream consequences of counterfactual thought, such as regret following a negative event (Gilovich & Medvec, 1994; Summerville, 2011b; see Gilovich & Medvec, 1995 for a review), perceptions that an event was fated or “meant to be” (Burrus & Roese, 2006), and more recently, behavioral intentions following counterfactual versus non-counterfactual thinking (Smallman & McCullough, 2012). In the present research, we focus on understanding how psychological distance affects the ease with which people generate upward versus downward counterfactuals upon which these more downstream affective responses (e.g., regret) and judgments (e.g., behavioral intent) are based.

Overview of Studies

Four studies test the central prediction that psychological distance versus proximity will lead to greater ease of generating upward counterfactuals relative to downward counterfactuals. Experiment 1 tested the idea that people would generate more downward counterfactuals for temporally proximal events relative to distal events and more upward counterfactuals for temporally distal events relative to proximal events. We sought to provide evidence for a general effect of psychological distance by manipulating social distance in Experiment 2, and predicted that people would generate more downward counterfactuals for events occurring to the self relative to those occurring to others and more upward counterfactuals for events occurring to others relative to those occurring to the self. In both studies, we presented participants with various everyday events (e.g., getting a tooth cavity, being hungry; Rim, Hansen, & Trope, in press) and asked them to generate either upward or downward counterfactuals. This thought-generation method was used, as in prior research, as a way to assess ease of thinking by asking participants to generate as many thoughts as naturally occurred to them. In Experiment 3, we

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used the same social distance manipulation and event stimuli as in Experiment 2 to show that distance affects counterfactual direction even when responses are more open-ended. Instead of manipulating the type of counterfactual they should generate as in Experiments 1 and 2, we gave participants open-ended instructions to generate any kind of counterfactual thoughts they wished.

Lastly, in Experiment 4, we explored a motivational mechanism for this effect, predicting that the distance-dependent shifts in counterfactual direction stem from changes in motivation. If a proposed mechanism can be both measured and manipulated, Spencer, Zanna, and Fong (2005) recommended the use of the experimental-causal-chain design for establishing mediation. In this method, multiple experiments are used to establish that (1) manipulating the hypothesized IV influences the DV; (2) manipulating the hypothesized IV affects the proposed mediator; and (3) manipulating the hypothesized mediator affects the DV. In past research, White and Lehman (2005) experimentally manipulated participants' focus on self-improvement versus self-enhancement, our proposed mechanism, and found that it led to greater spontaneous upward versus downward counterfactuals (step 3 of Spencer et al.'s (2005) causal chain procedure). We sought to complete the causal chain in Experiment 4 by demonstrating that increasing psychological distance leads to a greater focus on self-improvement versus self-enhancement goals. In Experiment 4, we manipulated temporal distance as in Experiment 1 and used the same measures to assess motivational focus as in White and Lehman (2005). In combination, our studies and White and Lehman's (2005) experiment support the idea that differential motivation mediates the relationship between psychological distance and counterfactual direction.

Experiment 1

We examined the idea that temporal distance would shift the direction of counterfactual thinking such that downward counterfactuals would be easier to generate in thinking about recent

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past events relative to distant past events and vice versa for upward counterfactuals. We asked participants to first imagine their lives one year ago (distant past) versus yesterday (recent past) for a period of three minutes. Next, they were presented with a series of events one by one and asked to imagine the events occurring on the day they imagined, either one year ago or yesterday. We asked participants to generate upward or downward counterfactuals for the events, and measured the number of counterfactual thoughts generated.

Method

Participants and Design. One hundred and two participants (47 male, 55 female) were recruited on Amazon's Mechanical Turk (Buhrmester, Kwang, & Gosling, 2011). Age ranged from 18 to 65 years ($M = 34.29$, $SD = 12.30$). Participants were randomly assigned to one of four conditions in a 2 (Temporal Distance: distant past vs. near past) x 2 (Type of Counterfactual: upward vs. downward) between-participants design. Compensation for participation was \$ 0.40.

Procedure. Participants were told that they would first complete an imagination task and then generate thoughts about various events. The purported purpose of the study was to examine "how people describe and think about events from their lives." We primed participants with temporal distance by having them imagine their lives one year ago or temporal proximity by having them imagine their lives yesterday for three minutes. Specifically, they were asked to "imagine what you did, who you talked to, where you were, or anything else that comes to mind" and then to write their freely occurring thoughts in the provided space. After three minutes, participants were told that they would be asked to imagine different events occurring on the day they had just imagined, and to list their thoughts about each event:

In this task, you will be presented with a series of phrases that depict various events.

Please imagine that these events ACTUALLY HAPPENED TO YOU on the day you just imagined.

For each event, you will be asked to imagine the event for a moment. People often see how the past might have been [better/worse]. You might have acted differently, and subsequent events might then have unfolded in a different way, such that things would have turned out [better/worse] than they actually did.

For each statement, think about how the events surrounding this situation might have been different. In particular, we'd like you to imagine how things could have turned out [better/worse] than they did. [For instance, if you saw the event "got a sunburn" you might think, "If I hadn't spent too much time in the sun, then I wouldn't have gotten a sunburn."/ For instance, if you saw the event "spent too much time in the sun" you might think, "At least I was wearing sunscreen-- if I hadn't been wearing sunscreen, then I would have gotten a much worse sunburn."]

Participants then read each of six events (you had a tooth cavity, you were fatigued, you were hungry, you sweated, you had tears in your eyes, you were thirsty); the order of these events was randomized by the computer. For each event, participants were asked to imagine that these events actually occurred to them on the day they just imagined (one year ago or yesterday) for a period of eight seconds. Next, they were instructed to generate upward or downward counterfactuals about the event. There were short instructions presented with each scenario. In the downward counterfactual condition, participants read, "think of all the ways that things might have turned out WORSE in this situation." Similarly, in the upward counterfactual condition, participants were reminded to "think of all the ways that things might have turned out BETTER

in this situation.” Participants were instructed to list as many thoughts as they could come up with “naturally, without any repetition.” The dependent variable was the average number of upward or downward counterfactuals generated across the 6 events. Participants completed a demographics questionnaire. They were also asked to rate how much effort they had put into generating the if-then statements on a scale of 1 (not at all) to 7 (very much). Finally, they were thanked and debriefed.

Results and Discussion

Coding of counterfactuals. Two trained undergraduate coders blind to distance condition coded whether the responses indicated how the situation could have been better (upward condition) or worse (downward condition). Statements were coded as a counterfactual if they described how each situation could have been different. For instance, for the event, “You were fatigued,” the response, “I could have gotten to bed earlier the night before” was coded as upward and “I could have fallen asleep on the bus and missed my stop” was coded as downward, since “... then things would have been better/worse” was implied in the instructions onscreen. Thoughts that merely elaborated on the actual events (e.g., “I was so tired that I took a nap,” “when I was running and skateboarding”) without describing how circumstances could have been different were not counted as counterfactuals. Interrater agreement on the average number of counterfactuals was high with an intraclass correlation coefficient of .98 ($n = 102$, 95% CI = .97 – .99), and the few disagreements were resolved through discussion between the first and second author.

Distance and direction of counterfactual thinking. Due to the highly verbal nature of the tasks, we omitted three participants who indicated that their primary language was not English. The following participants were also omitted from the analyses: 11 people who did not

generate any counterfactuals for the majority of trials¹, six people who wrote highly unusual responses that either had nothing to do with the target events and/or were extremely violent², one who did not complete the temporal distance induction task, and one statistical outlier (2.5 standard deviations above the mean). Analysis was conducted on the resulting set of 80 participants.

We conducted a 2 (Temporal Distance: distant past vs. recent past) x 2 (Type of Counterfactual: upward vs. downward) ANOVA with both factors between-subjects. Consistent with our prediction, we found a significant Distance x Counterfactual interaction, $F(1, 76) = 4.89$, $p = .03$, $\eta_p^2 = .060$ (see Figure 1). There were no main effects of distance or type of counterfactual, $F_s < 1$. This supports our idea that distance differentially affects the ease with which people generate upward versus downward counterfactuals. Follow-up pairwise comparisons for the significant interaction showed a marginal tendency for people to generate more downward counterfactuals for events in the recent past ($M = 2.93$, $SD = .65$) than the distant past ($M = 2.50$, $SD = .87$), $F(1, 76) = 2.89$, $p = .093$, $\eta_p^2 = .037$. They also tended to generate more upward counterfactuals for events in the distant past ($M = 2.85$, $SD = .74$) than the near past ($M = 2.50$, $SD = .88$), although this effect was not significant, $F(1, 76) = 1.31$, $p = .16$, $\eta_p^2 = .026$.

Additionally, we wanted to ensure that our operationalization of ease as number of counterfactuals generated was not capturing a different construct, such as level of engagement with the task. We asked participants to rate how much effort they had put into generating the if-then statements on a scale of 1 (not at all) to 7 (very much). There were no main effects of temporal distance, counterfactual direction, or interaction of the two variables on self-reported effort, all $F_s < 1$.

Temporal distance of events to the self affected the relative rate of upward versus downward counterfactual generation, as predicted. We found that downward counterfactuals tended to be generated with greater frequency in imagining events occurring in the near versus distant past as compared to upward counterfactuals, while the opposite tended to be true for upward counterfactuals. In other words, people were more likely to think about how reality could be worse for recent events versus those that occurred long ago compared to thinking about how reality could be better.

Experiment 2

Experiment 1 provided initial evidence that psychological distance, in the form of temporal distance, affected the ease of generating upward and downward counterfactuals about negative events. We conducted Experiment 2 to generalize the effect of distance on the propensity to generate upward versus downward counterfactuals to another form of psychological distance, social distance. We manipulated the social distance of the events by asking participants to imagine the events occurring to themselves (as we did in Experiment 1) or to other people indicated by initials (e.g., D. G. had a tooth cavity). Consistent with the logic presented in Experiment 1, we expected downward counterfactuals to be more prevalent for the self relative to others whereas the opposite should be true for upward counterfactuals.

Method

Participants and Design. One hundred and nineteen participants (45 male, 73 female, 1 unreported) were recruited via Amazon's Mechanical Turk. Age ranged from 18 to 66 years ($M = 33.61$, $SD = 11.68$). Participants were randomly assigned to one of four conditions in a 2 (Social Distance: self vs. other) x 2 (Type of Counterfactual: upward vs. downward) between-participants design. Compensation for participation was \$ 0.25.

Procedure. Participants were presented with the same six events from Experiment 1 but with a modification in the “other” condition. In this condition, they were asked to imagine the same events occurring to other people (e.g., B. H. had a tooth cavity). As in Experiment 1 all participants were asked to first imagine the event for eight seconds. Then they were asked to generate either upward or downward counterfactuals. Given the number of participants in Experiment 1 who failed to generate counterfactuals, we made the instructions more specific in Experiment 2. Participants saw the following instructions for each event: “Please think of all the ways that things might have turned out [BETTER/WORSE] in this situation: [‘If only..., then B. H. would not have had a tooth cavity.’/ ‘Even though B. H. had a tooth cavity, at least...’].” In the corresponding “self” conditions, initials were replaced by the pronoun, “you.” Again, participants were instructed to list as many thoughts as they could come up with “naturally, without any repetition.” Participants completed a demographics questionnaire. They were also asked indicate the amount of effort they had put into generating the if-then statements, as in Experiment 1. Finally, they were thanked and debriefed.

Results and Discussion

The following participants were omitted from the analysis: 2 people did not generate any counterfactuals³, 1 person wrote unusual responses (see footnote 2), 3 were statistical outliers (2.5 standard deviations above the mean), 2 had participated in Experiment 1. Analysis was conducted on 111 participants.

We conducted a 2 (Social Distance: self vs. other) x 2 (Type of Counterfactual: upward vs. downward) ANOVA with both factors between-subjects. Consistent with our prediction, we found a significant Distance x Counterfactual interaction, $F(1, 107) = 3.86, p = .05, \eta_p^2 = .035$ (see Figure 2). There was no main effect of distance or type of counterfactual, $F_s < 1$. Together

with Experiment 1, this finding supports our prediction that distance shifts people's tendency to think in terms of upward versus downward counterfactuals. Follow-up pairwise comparisons indicated that participants generated more downward counterfactuals for the self ($M = 3.37$, $SD = .83$) than for other people ($M = 2.77$, $SD = 1.14$), $F(1, 107) = 3.95$, $p < .05$, $\eta_p^2 = .036$, while upward counterfactuals were generated with comparable ease for others ($M = 3.27$, $SD = 1.14$) and for the self ($M = 3.04$, $SD = 1.27$), $F < 1$, $\eta_p^2 = .006$. Again, we measured self-reported effort on the counterfactual generation task. As in Experiment 1, there were no main effects or interactive effects of the variables on how much effort was expended in coming up with counterfactuals (all F s < 1).

Experiment 2 provides convergent evidence that distance shifts the direction of counterfactual thinking such that downward counterfactuals are more likely in response to events occurring to the self (socially proximal) versus to others (socially distal) while upward counterfactuals tend to be more likely in response to events occurring to others versus to the self. Importantly, this experiment demonstrates that it is psychological distance, more generally, and not only temporal distance, in particular, that leads to these effects on counterfactual thinking.

Experiment 3

In Experiments 1 and 2, we found that psychological distance, both temporal and social, affects ease of generating upward and downward counterfactuals about events. Our aim in Experiment 3 was to demonstrate that the link between psychological distance and counterfactual direction would hold even when participants were given more open-ended instructions to generate whatever kind of counterfactual thoughts they wished. As in Experiment 2, we manipulated social distance of the events by asking participants to imagine various events occurring to themselves or to other people indicated by initials (e.g., D. G. had a tooth cavity).

Subsequently, participants were asked to list the one thought about “what might have been” that they were most likely to think in the present moment. After making the response, participants were asked to self-code it as either an upward or downward counterfactual. We predicted that participants’ counterfactual thoughts would be more in the upward versus downward direction in response to events occurring to someone else versus to themselves.

Method

Participants and Design. Seventy two participants (26 male, 45 female, 1 unreported) were recruited via Amazon’s Mechanical Turk. Age ranged from 18 to 70 years ($M = 38.46$, $SD = 14.71$). Participants were randomly assigned to one of two social distance conditions in a between-participants design. Compensation for participation was \$ 0.50.

Procedure. Participants were presented with the same six events from Experiment 2, in random order. Again, they were asked to imagine these events occurring to themselves (Self condition) or to other people (e.g., K.E. had a tooth cavity; Other condition). As in the previous experiments, all participants were asked to first imagine the event for eight seconds. Then they were asked to generate the one counterfactual thought that they would most likely have.

Specifically, they were given the following instructions:

After each event, you will be asked to describe a thought that you might have now, in the present moment. In particular, we are interested in the "if only..." or "at least..." thoughts you might have about how things "might have been" different. People often see how the past might have been different. You might have acted differently, and subsequent events might then have unfolded in a different way. For instance, for the event "[A.S.] got a sunburn", you might think "If only I [A.S.] had worn sunscreen" or "At least I [A.S.] was wearing a hat".

For each event, we'd like you to describe the one thought about "what might have been" that you'd be most likely to think of right now, in the present moment, if this event had actually happened to you [if you had actually heard about this event happening to someone else]

For each event, participants were then asked to self-code the direction of their counterfactual thought. For instance, for the item "having a tooth cavity," they were asked, "Compared to [K.E.] actually having a cavity, is the thought you just described focused on how things might have been BETTER or how things might have been WORSE?" They answered on a 7-point scale with the endpoints, 1 (Much Worse) to 7 (Much Better), and the midpoint, "About the Same."⁴ The dependent variable was the average rating on this measure across the six events. A higher average rating score indicated more upward counterfactual thoughts. Participants completed a demographics questionnaire and were also asked indicate the amount of effort they had put into the task. Finally, they were thanked and debriefed.

Results and Discussion

Two non-native English speakers were omitted from the analysis, which was conducted on 70 participants.⁴ We conducted an independent samples t-test to examine the effect of social distance (self versus other) on direction of counterfactual thought. Consistent with our prediction, we found a significant effect of social distance, $t(68) = 2.044, p = .045, d = .49$. Participants' counterfactual thoughts were more about how things could have been better (upward) when the events were imagined as occurring to other people ($M = 5.10, SD = .92$) versus to the self ($M = 4.62, SD = 1.05$). As in the previous studies, effort was unrelated to the distance condition ($t(68) = 1.71, p = .09$) and to the direction of thoughts generated ($r = -.02, p = .89$).

Additionally, for each response, two trained undergraduate coders blind to distance condition coded whether the response was a counterfactual and, if so, whether it indicated how the situation could have been better (upward counterfactual) or worse (downward counterfactual). Coders agreed in 92% of cases; discrepancies were resolved by the second author. These codes were generally consistent with participants' self-ratings of direction: the average self-rating was significantly correlated with both the total number of upward counterfactuals ($r = .44, p < .001$) and downward counterfactuals ($r = -.41, p < .001$) generated. These correlations are modest because whereas participant ratings encompassed both direction and intensity, coders had a binary choice of direction only. Moreover, some statements may represent a different direction to the participant than is apparent to the coder (e.g., the direction of the statement "If I had been hungry I'd have eaten more and gained weight" is entirely dependent on one's personal attitude toward whether weight gain is a positive event, as when recovering from a serious illness, or a negative event, as when developing medical issues from obesity.)

As predicted and consistent with the analysis of participants' self-coded responses, non-parametric comparison of the number of upward counterfactuals listed indicated significantly more upward counterfactuals in the socially distant ($M = 4.44, SD = 1.44$) versus near ($M = 3.59, SD = 1.37$) condition, Mann-Whitney $U(68) = 395.50, p = .009, r = -.31$. Conversely, the number of downward counterfactuals generated was greater in the socially near ($M = 1.94, SD = 1.28$) versus distant ($M = 1.33, SD = 1.33$) condition, Mann-Whitney $U(68) = 447.00, p = .047, r = -.24$.

Experiment 3 provides further evidence that distance shifts the direction of counterfactual thinking. Unlike in Experiments 1 and 2, we did not manipulate counterfactual direction and instead asked participants to generate any "what if" thoughts they wished. That the same results

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emerged here as in Experiments 1 and 2 supports the belief that this in fact represents individuals' natural responses to more proximal versus more distant events, rather than an artifact of the task instructions in Experiments 1 and 2.

It is important to note that, in the open-ended Experiment 3, the effect on upward versus downward thoughts was a relative rather than absolute effect, as the average direction ratings for the "Self" events as well as for the "Other" events were both above the scale midpoint. This general tendency toward upward counterfactuals is consistent with the robust finding that upward counterfactuals are more common than downward counterfactuals following negative events (e.g., Medvec, Madey, & Gilovich, 1995; Roese & Olson, 1997).

Experiment 4

In Experiment 4, we explored the proposed mechanism driving the link between psychological distance and direction of counterfactual thought. We predicted that the relationship between psychological distance and counterfactual direction was mediated by differential focus on self-improvement versus self-enhancement goals. According to Spencer et al. (2005), the causal chain method is a strong method for establishing mediation if the proposed mediation can be both measured and manipulated. In Experiments 1-3, we showed that increasing distance leads to an increased tendency to generate upward versus downward counterfactuals. Past research demonstrated that experimentally inducing participants to adopt a self-improvement motive versus a self-enhancement motive led to generation of more upward versus downward counterfactuals (White & Lehman, 2005). In Experiment 4, our aim was to empirically test the final leg of the causal chain; we manipulated psychological distance and examined whether it affected participants' motivation to self-improve versus to self-enhance. Past research implied but did not directly demonstrate this link (Freitas et al., 2001). We predicted that increasing

psychological distance would lead participants to be more concerned about learning from past experience and less about enhancing one's mood. Together with Experiments 1-3 and the findings from White and Lehman (2005), this study would show that the effect of psychological distance on counterfactual direction was due to differentially activated self-motives.

Method

Participants and Design. Fifty one participants (28 male) were recruited on Amazon's Mechanical Turk. Age ranged from 18 to 66 years ($M = 34.08$, $SD = 12.43$). Participants were randomly assigned to one of two temporal distance conditions in a between-participants design. Compensation for participation was \$ 0.60

Procedure. Participants were initially primed with temporal distance using the same mindset priming procedure as in Experiment 1. Then they were presented with the same scenario used in White and Lehman (2005) that described a traffic accident. Participants were asked to imagine that this accident occurred on the day they had described (i.e., yesterday or one year ago, depending on which distance condition they were in). Next they were asked to indicate how interested they were in improving themselves and learning from the situation versus in lifting their spirits and feeling better about the situation on a scale of 1 (only interested in feeling better about the situation) to 7 (only interested in learning from the situation). We also asked participants to indicate their agreement with a series of six statements taken from White and Lehman (2005), half of which assessed self-improvement motives (e.g., "I would tell myself things to improve in the future") and the other half self-enhancement motives (e.g., "I would tell myself things to describe the situation in the most positive light"). Participants completed a demographics questionnaire and were also asked indicate the amount of effort they had put into the task. Finally, they were thanked and debriefed.

Results and Discussion

Two non-native speakers and three participants who indicated that they had participated in a similar experiment were excluded from the analysis, which was conducted on 46 participants.⁵ As predicted, on the single-item measure, participants responded that they were more interested in learning from the situation when the imagined event occurred one year ago ($M = 3.77$, $SD = 1.31$) than when it occurred yesterday ($M = 3.00$, $SD = 1.21$), $t(44) = 2.04$, $p = .047$, $d = 0.61$. With the additional measures, we formed a composite for self-improvement and self-enhancement by averaging the three self-improvement motive items ($\alpha = .91$) and the three self-enhancement motive items ($\alpha = .90$), respectively, and submitted these composite scores to a 2 (Temporal Distance: distant past vs. recent past) \times 2 (Type of Motive: self-improvement and self-enhancement) mixed ANOVA with the first factor between-participants. As predicted, there was a significant Temporal Distance by Type of Motive interaction, $F(1, 44) = 4.85$, $p = .033$, $\eta_p^2 = .099$ (Figure 3). As predicted, pairwise comparisons indicated a marginally greater self-improvement motivation ($M = 5.01$, $SD = 1.47$) than a self-enhancement motivation ($M = 4.47$, $SD = 1.50$) when the event happened one year ago, $F(1, 44) = 3.20$, $p = .081$, $\eta_p^2 = .068$. When the event occurred yesterday, in contrast, self-enhancement motivation ($M = 5.23$, $SD = 1.42$) tended to be greater than self-improvement motivation ($M = 4.77$, $SD = 1.68$), although this difference was not significant, $F(1, 44) = 1.85$, $p = .18$, $\eta_p^2 = .040$. As in the previous studies, effort was unrelated to the distance condition ($t(44) = .58$, $p = .57$).

In Experiment 4, we predicted and found that thinking about a temporally distal versus proximal event involves a greater focus on self-improvement (i.e., learning from the experience) than on self-enhancement (i.e., feeling better about the experience). Combined with past research that found that focusing on self-improvement versus self-enhancement leads to greater

spontaneous upward versus downward counterfactuals (White & Lehman, 2005), these results support the claim that differential focus on self-improvement versus self-enhancement mediates the relationship between psychological distance and counterfactual direction found in Experiments 1-3.

General Discussion

In three studies we found that the perceived psychological distance of a given event affects the ease with which people imagined better versus worse possible worlds. In Experiment 1, we manipulated temporal distance and counterfactual direction and found that people generated more downward counterfactuals (e.g., I had a tooth cavity yesterday, but at least I didn't need a root canal) for events that were imagined to have occurred in the recent past relative to the distant past while they tended to generate more upward counterfactuals (e.g., If only I had flossed every day, then I wouldn't have had a tooth cavity last year) for distant past events versus recent past events. We found converging evidence using social distance (Experiment 2). Experiment 3 demonstrated that distance affects the direction of open-ended counterfactual thoughts. A final study tested the potential motivational mechanism for these effects. We found that participants were more motivated to self-improve than to self-enhance when a negative event was imagined in the distant versus near past. Together with the results of White and Lehman (2005), which showed that participants induced to adopt a self-improvement versus self-enhancement motivation spontaneously generated more upward versus downward counterfactuals, Experiment 4 supports the idea that distance shifts the direction of counterfactual thought due to changes in motivation. In combination, these studies show that counterfactuals are generated in a functional and flexible way depending on the goals triggered by differential psychological distance from events.

These effects of distance on counterfactual thought were highly specific. We found no main effect of distance in Experiments 1 and 2, indicating that the effects were not due to general differences in task engagement for proximal versus distant events. Likewise, the lack of a main effect of counterfactual direction in these studies demonstrates that when people are asked to generate upward or downward counterfactuals, they find it comparably easy to do so. Self-reported effort on the task was also not affected by the manipulations in any of the studies. These results highlight the moderating role of distance on counterfactual direction, showing that distance does not facilitate or hinder counterfactual thinking or thought generation indiscriminately, but systematically affects upward and downward counterfactuals in distinct ways.

Implications of the current research

In contrast to past research on counterfactual direction focused on the influence of altering characteristics inherent to the event, such as valence or repeatability (Kahneman & Miller, 1986; Markman & McMullen, 2003; Roese, 1997), in the current studies we kept the content of the scenarios constant and only manipulated their subjective distance to the participant. We found that for the same event, people found it relatively easier to think about upward versus downward counterfactuals when the event was psychologically distant versus proximal. The current research thus broadens our understanding of when and why individuals will generate upward versus downward thoughts about “what might have been.”

The current results also contribute to a growing body of research linking psychological distance with greater self-control (Mischel, Shoda, & Rodriguez, 1989; Fujita et al., 2006). Markman et al. (1993) described upward versus downward counterfactual thinking as reflecting a tradeoff where the former prepares the individual for the future at the cost of immediate

positive affect, while the latter affords immediate feelings of satisfaction at the cost of being unprepared for the future. Thus, the relatively greater ease with which people engage in upward over downward counterfactuals with increasing psychological distance may be indicative of greater self-control when thinking about distant situations.

In addition to these self-regulatory benefits, psychological distance may also impact behavioral intention formation. Given that upward counterfactuals strengthen behavioral intentions (Smallman & Roese, 2009), our findings suggest that increased distance may also lead to stronger behavioral intentions and greater behavioral change due to the increased tendency to think in terms of upward versus downward counterfactuals. Smallman and McCullough's (2012) work on the effects of distance on behavioral intentions resulting specifically from upward counterfactuals suggests, however, that this association is complex; future research is needed to examine the interactive effects of psychological distance, counterfactual direction, and behavioral intentions.

Our findings also extend work on psychological distance and differential focus on self-enhancement versus self-improvement motivation. Freitas et al. (2001) found that distance affects the goals that people focus on which subsequently leads to differential feedback seeking and preference of comparison others. Specifically, people preferred negative, liability-focused versus positive, strength-focused feedback and upward versus downward social comparison for temporally distant versus proximal events. To our knowledge, Experiment 4 of the current research provides the first empirical demonstration of the link between distance and motivation. Furthermore, the current work identifies counterfactual thinking as one way in which people can satisfy these distinct motives associated with distance.

Finally, our findings connect work on causal reasoning within both the counterfactual and psychological distance literatures. Distance is associated with a relatively greater focus on causes versus consequences of events (Rim, Hansen, & Trope, 2013): consistent with construal level theory, people are more likely to generate high-level causes than low-level consequences of distant events, and tend to weigh cause- versus consequence-information more in judgments involving distant events. Likewise, counterfactual thoughts are linked to thinking about causes and effects: upward counterfactuals involve imagining alternative causes by identifying mutations that would have prevented the negative outcome (Gavanski & Wells, 1989) whereas downward counterfactuals involve imagining other possible consequences by identifying alternative events that would have made the negative situation worse. For example, for the focal event, “having a tooth cavity,” the upward counterfactual, “If only I had flossed every day,” identifies an alternative causal event (flossing) that would have prevented the focal event (cavity). Conversely, the downward counterfactual, “At least I didn’t need a root canal,” highlights an alternative outcome or consequence that would have been worse. Given that upward versus downward counterfactuals facilitate a focus on causes versus consequences, respectively, our findings linking psychological distance to counterfactual direction support the idea of distance-dependent causal focus.

Limitations and Future Directions

A potential limitation of our studies is that the events we presented were everyday events that were all mildly negative in valence. We chose these stimuli for two reasons: 1) they had been pretested in previous research to elicit a comparable number of cause and consequence inferences (Rim et al., 2013), which have some conceptual overlap with counterfactual direction (i.e., in the sense that upward counterfactuals alter the cause and downward counterfactuals alter

the consequence), and 2) previous research has shown that counterfactuals are most commonly generated in response to negative events (e.g., Gavanski & Wells, 1989; Gleicher, Kost, Baker, Strathman, Richman, & Sherman, 1990). Future research should therefore examine whether psychological distance has the same effect on counterfactual direction for positive events. Likewise, we examined only temporal (Experiments 1) and social (Experiments 2 and 3) distances. We anticipate that this effect should extend to other forms of psychological distance as well, including spatial distance and probability, but future research should test this further extension.

We also wish to note that it is not always the case that downward counterfactuals will serve a self-enhancement function and that upward counterfactuals will produce negative affect. For instance, the driver who walks away from a serious accident and thinks “I could have died” is unlikely to be cheered by that thought, and the graduate applicant who almost attains her ideal score on a practice GRE may feel inspired rather than regretful. The current research, like most previous work on counterfactual thought, focused on the context of affective contrast (Markman & McMullen, 2003), in which downward counterfactuals should facilitate self-enhancement and upward counterfactuals facilitate self-improvement. Future research should investigate the effects of psychological distance for contexts in which upward and downward counterfactuals would be expected to serve different motivations and have different affective implications.

By thinking about counterfactuals about recent and distant events through the lens of CLT, the current research suggests a new perspective on longstanding questions about why recent and distant regrets may differ. One such difference is that regrets identifying inactions (things that one should have done but failed to do) are more common than regrets identifying actions (things one did but should not have done) in the distant than recent past (Gilovich &

Medvec, 1994, 1995; Leach & Plaks, 2009). This inaction effect has been explained in terms of memory bias (Savitsky, Medvec, & Gilovich, 1997), as individuals are more likely to remember incomplete goals (i.e., inactions) than completed goals (i.e., actions; Zeigarnik, 1935). The current research offers the perspective that, rather than being due solely to changes in memory, the psychological experience of the event being closer or more distant may lead to different motivations in contemplating the event. Indeed, work by Leach and Plaks (2009) used a construal level theory perspective and showed that level of abstraction mediates the effect of temporal distance on the degree of regret about actions and inactions, though they did not examine the motivations associated with this effect. Although the current research focused on the direction of counterfactual thought, future research should explore the possibility that, within upward counterfactual thoughts, these same motivational changes might affect the relative prevalence of actions versus inactions.

Moreover, our research is the first to empirically compare counterfactual thinking regarding events that are socially proximal versus distal. Understanding the effect of social distance on counterfactual thinking is important given that counterfactuals are not only generated for events that people directly experience but for those that they simply hear about or observe occurring to distant others (e.g., the housing crisis, a soldier who was injured in combat), as well as close others (e.g., friends going through a divorce). The fact that people are better able to generate downward counterfactuals for events occurring to themselves (socially proximal) than to others (socially distal) while they have a tendency to generate more upward counterfactuals for events occurring to others versus to themselves has implications for social support provision – the closer one feels to an interaction partner, the more likely one may be to provide the kind of support that increases positive affect through downward counterfactuals (e.g., telling a friend

with high cholesterol, “at least you found out before it got worse” rather than “if only you had not eaten so unhealthily”). This greater propensity to generate downward counterfactuals should lead to greater empathy. The tendency to think more about upward counterfactuals for events occurring to other people also has implications for the self with respect to social learning: simulating ways in which negative events could have turned out better for someone else (e.g., “if only he hadn’t eaten so much fast food and had exercised more”) can help one avoid the negative situation in the future oneself.

Both the construal level and counterfactual literatures have established that the same situation may be described in very different terms, with different consequences to the individual. The current research makes it clear that these effects are not independent but instead are entwined, with distance affecting the ease with which individuals imagine better or worse possible worlds. Counterfactuals are functionally and flexibly generated based on the active goals associated with differential psychological distance from events. What the road not taken looks like appears to depend heavily on the vantage from which one looks at it.

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Footnotes

¹ These 11 people included those who did not generate upward or downward counterfactuals on at least half of the six trials (three generated counterfactual(s) on only one trial, one generated counterfactuals on two trials, and seven generated no counterfactuals; five were in the downward condition and six were in the upward condition). This represents 11% of the sample which is well below the number of participants omitted using similar criteria in a comparable prior experiment (e.g., 24%; Roese, 1994).

² An example of a strange response is the following, “boring. im drunk. i cant type well. i want to eat something.”

³ In Experiment 2, we provided the participants with the counterfactual frame (e.g., If..., then I wouldn't have gotten a tooth cavity, or “I got a tooth cavity, but at least...”) so we checked the responses to make sure participants had followed instructions and had written responses that made sense within these frames. Two participants (1 in upward and 1 in downward counterfactual condition) did not provide responses that fit the frames (e.g., for the frame, “if..., then B.H. would not have gotten a tooth cavity,” wrote, “his mouth hurt, he had severe pain, he had to go to the doctor”).

⁴ In line with recommended best practices in the literature to screen participants for attentiveness/following instructions (e.g., Oppenheimer, Mayvis, & Davidneko, 2009), we included two questions as part of the final questionnaire, in which participants were instructed to skip one question and enter a different response in a text box on the following page than the instructions indicated, i.e., entering the current month instead of their occupation. Excluding participants who failed both attentiveness check questions did not change the results. In fact, the

critical effect of social distance on counterfactual direction was descriptively stronger after excluding these participants, $t(44) = 2.95, p = .005, d = .87$.

⁵Excluding participants based on the same two attentiveness check questions from Experiment 3 did not change the results. The Temporal Distance by Type of Motive interaction remained significant, $F(1, 39) = 4.21, p = .047, \eta_p^2 = .097$.

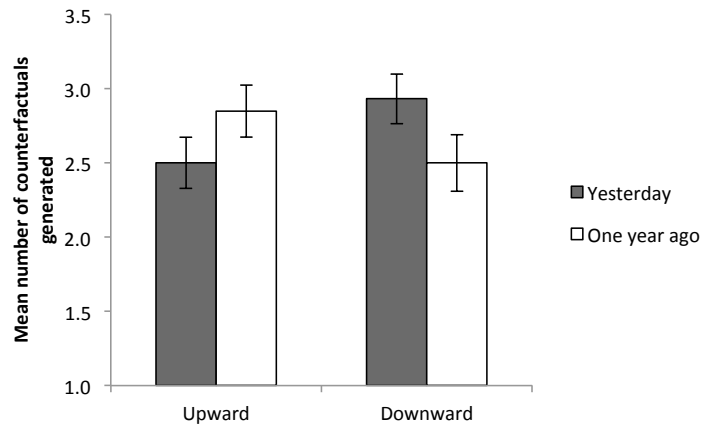


Figure 1. Mean frequency of generating upward versus downward counterfactuals as a function of temporal distance (yesterday versus one year ago; Experiment 1).

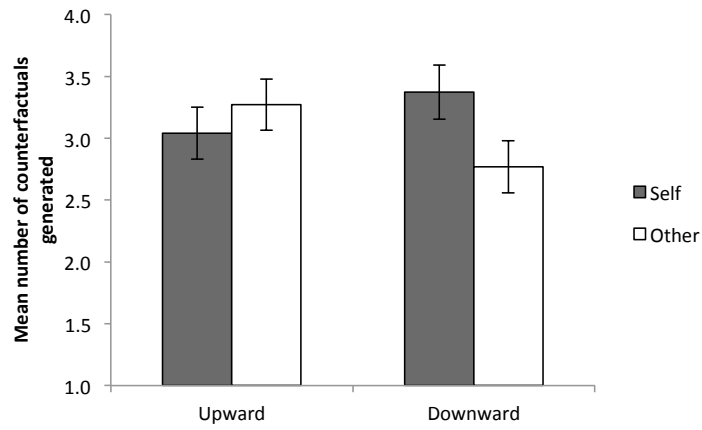


Figure 2. Mean frequency of generating upward versus downward counterfactuals as a function of social distance (self vs. other; Experiment 2).

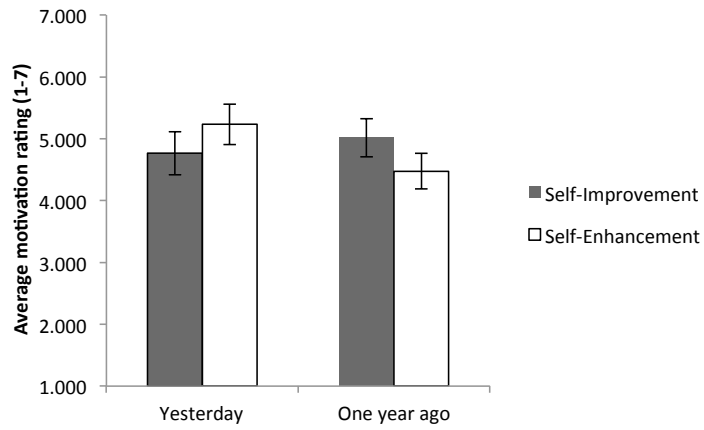


Figure 3. Average motivation ratings on self-improvement and self-enhancement items as a function of temporal distance (yesterday versus one year ago; Experiment 4).