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Time pressure reverses risk preferences

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ABSTRACT

In this research, we offer the hypothesis that time pressure reverses risk preferences. That is, people are typically risk-averse over gains and risk-seeking over losses, as predicted by prospect theory, but we propose that people under time pressure are risk-seeking over gains and risk-averse over losses. This is because people under time pressure perceive the maximal possible outcome – that is, the best possible gain over gains and the worst possible loss over losses – to be more likely to occur, such that they use it as their reference point and not the status quo to evaluate all other outcomes. As such, they perceive intermediary gains relative to the best possible gain as relative losses, which results in risk-seeking, and they perceive intermediary losses relative to the worst possible loss as relative gains, which results in risk-aversion. We conclude by situating our research among prior work generally and with prospect theory specifically.

1. Introduction

People often have little time to make decisions. Many shoppers wait until December 24 to buy Christmas presents for their friends and family; day-traders have only seconds (sometimes even less) to sell and buy stock in lucrative start-ups with risky prospects; and managers must often bring new products to the market before rivals do so. How might time pressure impact decision-making in these instances? The literature on decision-making under time pressure is indeed extensive. This prior body of work has found that "harassed decision-makers" (i.e., people under time pressure) consider negative information to be salient and diagnostic (Ben Zur & Breznitz, 1981; Kahneman & Tversky, 1979; Svenson & Edland, 1987; Wright, 1974); they adopt non-compensatory decision rules or heuristics to simplify their decision-making (Dhar & Nowlis, 1999; Ordóñez & Benson, 1997; Payne, Bettman, & Johnson, 1993; Payne, Bettman, & Luce, 1996; Svenson, Edland, & Slovic, 1990); and they speed up the rate at which they process information (Ben Zur & Breznitz, 1981). These findings are important because they differ from many decision-making models that explain human behavior under no time pressure. However, if people also make many decisions under time pressure, and if such decisions differ in various ways from usual, then the standard models may be limited in their explanatory power for many behavioral phenomena.

Of particular interest in this research are risk preferences under time pressure. The well-established stream of findings regarding how time pressure impacts risk preferences is that people under time pressure become more risk-averse than usual. For example, people become less creative under time pressure (Kelly & McGrath, 1985); people under time pressure defer making a choice because choosing under time pressure is difficult and they want to avoid choosing something that they would later regret (Dhar & Nowlis, 1999); and they prefer brand-name products that are expensive but also high in quality to non-brand-name ones that are affordable but also low in quality (Nowlis, 1995). These findings are all consistent with the view that time pressure is a form of stress (Maule & Hockey, 1993), and people under stress prefer what is safe and familiar (Shors & Wood, 1995). Risk-aversion under time pressure is also consistent with ambiguity aversion, in that time pressure highlights uncertainties and doubts, and people prefer to avoid negative outcomes (Kahneman & Tversky, 1979).

However, there is also evidence that decisions under time pressure may not necessarily be risk-averse. Sometimes, it can increase risk-seeking. For example, Busemeyer and his colleagues (1985; Busemeyer & Townsend, 1993; Dror, Busemeyer, & Basola, 1999) found that time pressure results in risk-seeking or risk-aversion depending on the expected values (EVs) of mixed monetary gambles. People under time pressure become risk-seeking when the EVs are positive, but they become risk-averse when the EVs are negative. There is also the suggestion that the negativity bias may, in fact, attenuate under time pressure. That is, some research has found that negative information becomes more salient and

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more impactful for people under time pressure (Ben Zur & Breznitz, 1981; Svenson & Edland, 1987; Wright, 1974), but others have reported that the actual proportion of time spent on negative information may still be less than that on positive information (Maule, Hockey, & Bdzola, 2000). Now, this may simply highlight a difference in research methods or definitions, but as risk-aversion is a preference to avoid loss, it is conceivable that risk preferences under time pressure might not always be risk-averse, especially when the proportion of time spent on and not a salience of negative or positive information *per se* is what drives risk preferences.

In this research, we explore risk preferences over gains and over losses under time pressure, and propose that time pressure in fact reverses risk preferences. That is, people are typically risk-averse over gains and risk-seeking over losses, as predicted by prospect theory (Kahneman & Tversky, 1979), but we propose that people under time pressure are risk-seeking over gains and risk-averse over losses, in contrast to their usual risk preferences. Our effort focuses on how time pressure impacts risk preferences over the gain and loss domains separately, whereas prior efforts have focused on mixed gambles. For example, with Busemeyer's findings, the EVs were either positive or negative, but his participants received the possibility of winning and losing in each gamble. Ben Zur and Breznitz (1981) also examined risk preferences for mixed prospects, while Dror et al. (1999) used a blackjack task where asking for a hit could mean being closer to 21 or being over 21 – also a mixed prospect. But while there are many risk preferences that involve both the possibility of winning and losing (e.g., investing in the stock market), there are also risk preferences that solely involve possible gains (e.g., purchasing a lottery ticket) or possible losses (e.g., insurance policies). It is to our surprise, then, that despite prospect theory's emphasis on risk preferences over gains and losses (Kahneman & Tversky, 1979; Tversky & Kahneman, 1981, 1992), little do we still understand how time pressure impacts risk preferences over these separate and discrete domains.

On the surface, our hypothesis seems to counter prospect theory, since we make the opposite predictions regarding risk preferences over gains and losses under time pressure. However, we reason that people under time pressure use the maximal possible outcome – that is, the best possible gain over gains and the worst possible loss over losses – as their reference point and not the status quo, so they perceive intermediary gains relative to the best possible gain as relative losses, which results in risk-seeking, and they perceive intermediary losses relative to the worst possible loss as relative gains, which results in risk-aversion. Thus, to the extent that prospect theory is based on how people evaluate risky outcomes relative to a reference point, our proposition can be understood in similar, if not exact, terms set forth by Kahneman and Tversky, merely that the reference point shifts from the status quo to the maximal possible outcome under time pressure. We will later discuss the similarities and differences between our hypothesis and prospect theory and prior work on risk preferences under time pressure in greater detail, but this reference point shift under time pressure is the core of our hypothesis. We next outline our theoretical framework, and we will discuss how our research relates to the literature after the experiments. Typically, the link with established work comes before the experiments, but we proceed in the current fashion because our findings illuminate how our effort is or is not consistent with prior work.

2. Theoretical framework

Consider the following pair of options over gains: one winning $50 with certainty, the other winning $100 with a .5 probability (or else nothing). When people evaluate risky outcomes over gains, they typically are risk-averse. We propose that people under time pressure evaluate outcomes relative to the best possible outcome that they can gain, which in this case is winning $100. From this perspective, winning $50 wouldn't be a gain, but it would be seen as a loss of $50 relative to winning $100. The result is that people would be risk-seeking by opting for the risky $100 win. Now consider another pair of options, this time over losses: one losing $50 with certainty, the other losing $100 with .5 probability. When people evaluate risky outcomes over losses, they typically are risk-seeking. We propose that people under time pressure evaluate outcomes relative to the worst possible outcome that they can lose, which in this case is losing $100. From this perspective, losing $50 wouldn't be a loss, but it would be seen as a gain of $50 relative to losing $100. The result is that people would be risk-averse by opting for the certain $50 loss. In other words, over gains and losses, the reference point shifts from the status quo to the maximal possible outcome – that is, the best possible gain or the worst possible loss – under time pressure, which results in a risk preference reversal. Fig. 1 presents a graphical representation of where we hypothesize the reference point to be located under time pressure both over gains and over losses.

Why might this reference point shift occur? Our explanation is based on two lines of reasoning that build onto each other. We postulate that time pressure reduces the psychological distance between the decision-maker and the maximal possible outcome, such that people under time pressure are more impacted by it than usual (i.e., under no time pressure). All in all, our belief is that people under time pressure use the maximal possible outcome as their reference point, such that they see risky outcomes differently than usual.

Our hypothesis regarding the reference point shift relies on the postulation that time pressure reduces the psychological distance between the decision-maker and the maximal possible outcome, such that it increases its perceived impact over other outcomes. Philosophers of science have noted that people under time pressure see outcomes as more "vivid" and "in the here and now" than usual (Björkman, 1984; Einhorn & Hogarth, 1981; Popper, 1969; Wright & Weitz, 1977). Similarly, people perceive outcomes as psychologically closer when they spend less time than expected on decision-making, while they perceive them as more distant when they spend more time than expected (Chang & Pham, 2013). This finding in particular is not about time pressure, but to the extent that people spend less time making a decision under time pressure, it does suggest that people making decisions under time pressure might also perceive the outcomes under consideration to be psychologically closer. In turn, outcomes that are psychologically closer tend to have a greater impact on decision-making. For example, research on both intertemporal choice (Frederick, Loewenstein, & O'Donoghue, 2002; Hoch & Loewenstein, 1991) and delay of gratification (Metcalfe & Mischel, 1999) have noted that people place greater value on outcomes that are psychologically immediate.

By itself, the notion that people under time pressure consider outcomes to be more impactful does not say which outcome is more so. We propose that the maximal possible outcome is of greatest impact, such that people under time pressure use it and not the status quo as their reference point when evaluating risky outcomes. It is well-documented that people focus on nominally-large numbers when making a judgment because such numbers are salient reference standards (Pelham, Sumarta, & Myaskovsky, 1994), and the best possible gain would be the nominally-largest gain that is possible, while the worst possible loss would be the nominally-largest loss that is possible. Moreover, people prefer to achieve elation and avoid disappointment (Bell, 1985; Loomes & Sugden, 1986; Mellers, Schwartz, Ho, & Ritov, 1997; Rottenstreich & Hsee, 2001), which would make the best possible gain the outcome that people would want to

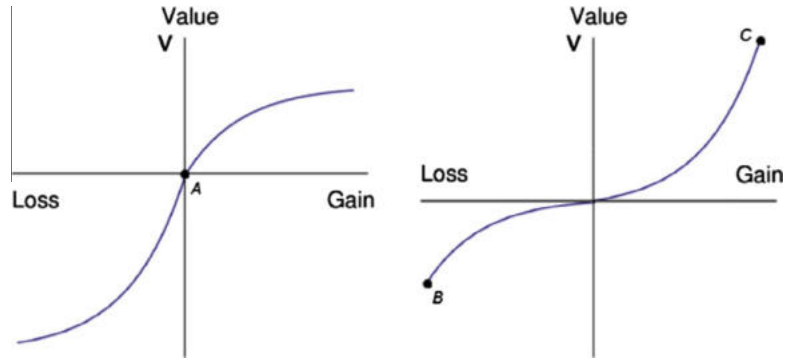

Fig. 1. Graphical representation of reference point locations. Prospect theory posits a reference point at the status quo (A), such that the value function is concave over gains and convex over losses. We hypothesize that under time pressure, people locate the reference point at the best possible gain over gains (C), and they locate it at the worst possible loss over losses (B). Accordingly, people perceive intermediary gains relative to the best possible gain in terms of relative losses (i.e., a convex function), and they perceive intermediary losses relative to the worst possible loss in terms of relative gains (i.e., a concave function).

achieve the most, and the worst possible loss the one that they would want to avoid the most. Decisional heuristics tend to become stronger under time pressure as a way to maximize accuracy and minimize effort (Ordóñez & Benson, 1997; Payne et al., 1993, 1996). These arguments converge on our primary hypothesis that people under time pressure likely consider the maximal possible outcome to be more salient than others, such that they should be more likely to use it as their reference point, resulting in the risk preference reversal.

In sum, we propose that time pressure reverses people's risk preferences. That is, people are typically risk-averse over gains and risk-seeking over losses, as predicted by prospect theory, but we propose that people under time pressure are risk-seeking over gains and risk-averse over losses, in contrast to their usual risk preferences. In effect, the value function under time pressure is a reversed *S*-shape, in contrast to its usual *S*-shape. Markowitz (1952) and Post and Levy (2005) both suggested a similar reversed value function under some situations. Our framework differs from theirs in that our proposed reference point differs. They used stochastic dominance approaches to proffer a reversed *S*-shape value function with the reference point at the status quo, thus effectively suggesting a different value function from prospect theory. However, we posit that the reversed *S*-shape value function under time pressure is because the reference point lies at the maximal possible outcome, such that the curve over gains is convex relative to the best possible gain, akin to losses relative to the status quo, while the curve over losses is concave relative to the worst possible loss, akin to gains relative to the status quo. Thus, our effort is in more ways consistent with Kahneman and Tversky in that we use their classic model as a basis to predict risk preferences under time pressure.

Four experiments test our hypothesis. We first show the overall effect that people under time pressure are risk-seeking over gains and risk-averse over losses, in contrast to their usual risk preferences as predicted by prospect theory. Experiment 2 then tests our assumption that time pressure reduces the psychological distance between the decision-maker and the maximal possible outcome. We find that people under time pressure perceive the maximal possible outcome to be more likely than those under no time pressure, suggesting that they perceive the outcome to be psychologically closer than usual (Johnson, Hershey, Meszaros, & Kunreuther, 1993; Sherman, Cialdini, Schwartzman, & Reynolds, 1985; Wakslak & Trope, 2009). Experiment 3 then tests our hypothesized reference point shift from the status quo to the maximal possible outcome under time pressure. Findings indicate that people under time pressure use the best possible gain to evaluate all other gains, and the worst possible loss to evaluate all other losses, and this shift reverses risk preferences. Finally, we explore a boundary condition for our effect. As we posit that the reduced psychological distance between the decision-maker and the maximal possible outcome under time pressure is what leads to the risk preference reversal, preventing that distance from diminishing should eliminate the reversal. We find support for this by manipulating participants' construal level, in that the risk preference reversal appears in a concrete construal under which the psychological distance reduces under time pressure, but not in an abstract construal under which it does not.

All our experiments follow a similar methodology in terms of the risky choice presented to participants and placing them under time pressure. We will discuss particular differences where appropriate, but generally, participants choose between a certain and risky option involving monetary outcomes. Half of the participants do so under time pressure. Because each experiment involves choices that differ in complexity (e.g., longer scenarios for participants to read, different probabilities), we conduct pre-tests for each by measuring the mean amount of time that pre-test participants need to make the same choice as the primary experiment, and use the amount of time at 1 standard deviation below the mean (rounding to the nearest whole second) for participants whom we place under time pressure. We interpret this amount of time as just enough for participants in the respective conditions to read and understand the question and provide their responses, but not enough for them to process all the information that they receive about the risk preferences in a thoughtful manner.

3. Experiment 1

The purpose of this first experiment was to test our overall effect that time pressure reverses people's risk preferences. To do so, we use a risky choice scenario over gains as well as over losses (within-participants), but for half of the participants, we place them under time pressure (between-participants). This resulted in a 2 (time pressure: no, yes) $\times$ 2 (outcome: win, lose) mixed design.

3.1. Method

We recruited 142 American users from Mechanical Turk, with a mean age of 35.3 years old. Participants received both the hypothetical chance to win or lose some money, making this factor within-participants. For the chance to win some money, participants chose between winning \$50 with certainty and winning \$100 with .5 probability (or else nothing). For the chance to lose some money, participants chose between losing \$50 with certainty

Table 1
Summary of results for Experiments 1, 2, and 3.

	Gain	Loss
Experiment 1		
No time pressure	.96	.40
Time pressure	.37	.63
Experiment 2		
No time pressure	.80	.27
Time pressure	.39	.64
Experiment 3		
No time pressure	.96	.40
Time pressure	.33	.73

The table summarizes the proportion of participants who preferred the certain (i.e., risk-averse) option.

and losing $100 with .5 probability. We randomized the order of the gain and loss conditions across participants. Participants also randomly received the time pressure or control condition, making this factor between-participants. Participants in the time pressure condition had only seven seconds to make each of their gain and loss choices. Finally, as a time pressure manipulation check, all participants indicated how much time they felt that they had when completing the study (1 = Not Enough Time, 9 = More than Enough).

3.2. Results

Our time pressure manipulation was successful. Participants under time pressure felt that they had less time to make their risky choice ($M = 4.19$) than those under no time pressure ($M = 7.09$), $t(140) = 6.86$, $p < .001$.

On participants' choice in the gambling task, time pressure reversed their risk preferences. Under no time pressure, participants with the possibility of winning preferred the certain option to the risky one, while those with the possibility of losing preferred the risky one to the certain one, $\chi^2(1) = 50.00$, $p < .001$. These findings are consistent with the widely-replicated patterns of prospect theory. However, participants under time pressure with the possibility of winning preferred the risky option to the certain one, while those with the possibility of losing preferred the certain option to the risky one, $\chi^2(1) = 5.44$, $p < .02$. These findings are in contrast to the aforementioned findings under no time pressure and the usual risk preferences as predicted by Kahneman and Tversky. Table 1 summarizes the proportion of participants choosing the certain option in each condition.

3.3. Discussion

The findings provide the first evidence, to our knowledge, that time pressure reverses people's risk preferences over gains and over losses. People are typically risk-averse over gains and risk-seeking over losses, as predicted by prospect theory, but we propose and find across four experiments that people under time pressure are risk-seeking over gains and risk-averse over losses, in contrast to their usual risk preferences. We propose that this risk preference reversal under time pressure occurs because the reference point shifts from the status quo to the maximal possible outcome. We later test this hypothesized shift in Experiment 3. But we first test our assumption that time pressure reduces the psychological distance between the decision-maker and the maximal possible outcome.

Prior evidence lends support for this reduced psychological distance under time pressure. Philosophers of science have also theorized such an effect. Yet, an empirical demonstration of this remains to be shown. Thus, we test for this by noting that when people's psychological distance to an outcome reduces, they inflate the perceived probability that it would occur. For example, Wakslak and Trope (2009) found that when people are under a concrete construal (a situation that reduces psychological distance), they perceive various events, activities, and outcomes to be more likely to occur. Similarly, people predict events presented or processed in more vivid (i.e., psychologically closer) terms to be more likely than events in more pallid (i.e., psychologically more distant) terms (Johnson et al., 1993; Sherman et al., 1985). These findings are consistent with the notion that a reduced psychological distance affects a host of outcomes regarding representation, prediction, evaluation, and behavior (Trope & Liberman, 2010; Trope, Liberman, & Wakslak, 2007). As well, people often subjectively or experientially "feel" that two ratios that are equivalent mathematically in fact favor one outcome over the other (Kirkpatrick & Epstein, 1992), which offers the possibility in our context that people under time pressure may be presented with probability information about certain outcomes yet "feel" that the outcomes are more or less likely to occur than stated.

4. Experiment 2

In this experiment, we present participants with a hypothetical choice between a certain and risky option of winning or losing some money, similar to that in Experiment 1, but this factor is presented between-participants. We also ask participants, after they make their choice, how likely they think that the best possible gain or the worst possible loss would occur. If participants under time pressure perceive the maximal possible outcome to be psychologically closer than usual, then they should also perceive it to be more likely to occur. This is consistent with prior work on construal level theory (Trope & Liberman, 2010; Trope et al., 2007; Wakslak & Trope, 2009), imagery (Johnson et al., 1993; Sherman et al., 1985), and cognitive-experiential self-theory (Kirkpatrick & Epstein, 1992).

4.1. Method

We recruited 102 American users from Mechanical Turk, with a mean age of 31.1 years old. Participants randomly received either the hypothetical chance to win or lose some money that was identical to Experiment 1, except that they received only either the win or loss condition (but not both). Participants also randomly received the time pressure or control condition. Participants in the time pressure condition had only seven seconds to make their choice. Thus, this experiment used a 2 (time pressure: no, yes) × 2 (outcome: win, lose) between-participants design. Afterwards, all participants indicated how likely they thought that they would win (or lose) $100 on a scale ranging from 0% (not possible at all) to 100% (certainly). Participants were not under time pressure when completing this question. Finally, all participants completed the same time pressure manipulation check as before.

4.2. Results

4.2.1. Time pressure check

Our time pressure manipulation was successful. Participants under time pressure felt that they had less time to make their risky choice ($M = 4.59$) than those under no time pressure ($M = 5.92$), $t(100) = 2.79$, $p < .01$. A 2 × 2 ANOVA revealed neither a main effect of outcome nor a two-way interaction between outcome and time pressure on participants' felt time ($ps > .11$).

4.2.2. Risk preference

Time pressure reversed participants' risk preferences. Under no time pressure, those with the possibility of winning preferred the certain option to the risky one, while participants with the possibility of losing preferred the risky one to the certain one, $\chi^2(1) = 14.41$, $p < .001$. Again, these findings are consistent with prospect theory. However, those under time pressure with the possibility of winning preferred the risky option to the certain one, while participants with the possibility of losing preferred the certain option to the risky one, $\chi^2(1) = 3.21$, $p < .02$. This stands in contrast to Kahneman and Tversky's findings. Table 1 summarizes the proportion of participants choosing the certain option in each condition.

4.2.3. Perceived likelihood

We found that participants perceived the maximal possible outcome to be more likely to occur under time pressure. Participants with the possibility of winning perceived winning $100 to be more likely under time pressure ($M = 71.9\%$) than those under no time pressure (48.8%), $t(46) = 3.56$, $p < .01$. Similarly, those with the possibility of losing also perceived losing $100 to be more likely under time pressure ($M = 57.1\%$) than those under no time pressure ($M = 43\%$), $t(52) = 2.58$, $p < .02$.

4.2.4. Mediation analyses

We then assessed whether or not the perceived likelihood of the maximal possible outcome mediated the relationship between time pressure and risk preference. We conducted mediation analyses separately over gains and over losses, with time pressure as the independent variable (0 = no, 1 = yes), participants' perceived likelihood of the maximal possible outcome as the presumed mediating variable, and risk preference as the dependent variable (0 = certain, 1 = risky). Perceived likelihood was predicted using linear regressions, while risk preference was predicted using logistic regressions.

Over gains, time pressure inflated the perceived likelihood that the best possible gain would occur ($\beta = .47$, $p < .001$), and this inflated probability increased risk-seeking ($\beta = .52$, $p < .001$). Time pressure also by itself increased risk-seeking ($\beta = .42$, $p < .01$). However, when we used both time pressure and perceived likelihood to predict risk preference simultaneously, the impact of time pressure attenuated ($\beta = .23$, $p = .11$), while that of perceived likelihood remained significant ($\beta = .41$, $p < .01$). As well, a bootstrapping analysis (Preacher & Hayes, 2008) revealed that the indirect effect of time pressure on risk-seeking through perceived likelihood over losses was estimated to lie between .38 and 2.77 (5000 samples, 95% C.I.). These findings indicate that mediation was significant.

Over losses, time pressure inflated the perceived likelihood that the worst possible loss would occur ($\beta = .34$, $p < .02$), and this inflated probability decreased risk-seeking (i.e., increased risk-aversion; $\beta = -.51$, $p < .001$). Time pressure also by itself decreased risk-seeking ($\beta = -.37$, $p < .01$). However, when we used both time pressure and perceived likelihood to predict risk preference simultaneously, the impact of time pressure likelihood attenuated ($\beta = -.23$, $p = .07$), while the impact of perceived likelihood remained significant ($\beta = -.43$, $p < .01$). A bootstrapping analysis revealed that the indirect effect of time pressure on risk-aversion through perceived likelihood over losses was estimated to lie between -2.18 and $-.14$. This finding indicates that mediation was significant nonetheless. Figs. 2A and 2B present the individual pathways in the mediation analyses both over gains and over losses.

4.3. Discussion

People under time pressure perceive the maximal possible outcome to be psychologically closer than usual. Evidence for this postulation comes from the finding that they perceive it to be more likely to occur – and probability inflation indicates not only that outcomes are psychologically closer (Wakslak & Trope, 2009) but also more vivid and in the here and now (Johnson et al., 1993; Sherman et al., 1985). The fact that we fix the actual likelihood of the risky outcome and yet participants under time pressure

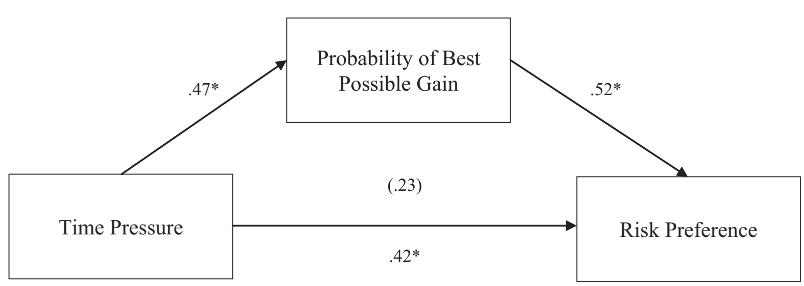

Fig. 2A. Experiment 2: Pathways in mediation analysis over gains. Path diagram of the mediation model with standardized beta weights. Time pressure was coded as 0 = no, 1 = yes; and risk preference was coded as 0 = certain, 1 = risky (therefore, a positive co-efficient indicates greater risk-seeking). For the direct effect of time pressure on risk preference, the values without parentheses are the co-efficient when the indirect (upper) path is not included. The value in the parenthesis is the co-efficient when the indirect path is included. $^*p < .05$.

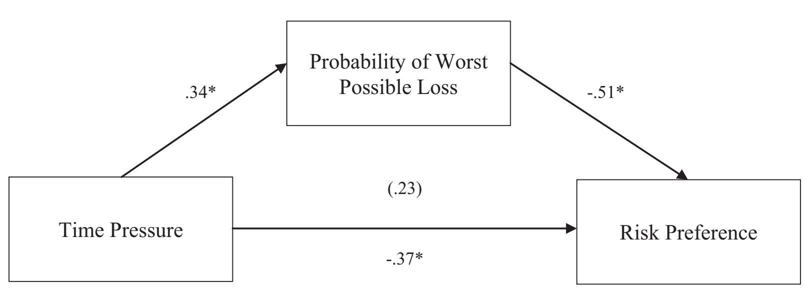

Fig. 2B. Experiment 2: Pathways in mediation analysis over losses. Path diagram of the mediation model with standardized beta weights. Time pressure was coded as 0 = no, 1 = yes; and risk preference was coded as 0 = certain, 1 = risky (therefore, a positive co-efficient indicates greater risk-seeking). For the direct effect of time pressure on risk preference, the value without parentheses is the co-efficient when the indirect (upper) path is not included. The value in the parenthesis is the co-efficient when the indirect path is included. $^*p < .05$.

perceive the maximal possible outcome to be more likely to occur than indicated is consistent with the notion that people's subjective experience of information such as ratios and probabilities can differ from objective descriptions (Kirkpatrick & Epstein, 1992).

Our mediation results deserve attention. The inflated probability of the maximal possible outcome mediates people's risk-seeking over gains and their risk-aversion over losses under time pressure. Now, recall that our argument is that people under time pressure perceive the maximal possible outcome to be psychologically closer and so they are likely to use it as their reference point. Yet, the mediation results only indicate that this reduced psychological distance under time pressure leads to the risk preference reversal, but it does not indicate that this is because people under time pressure use the maximal possible outcome as their reference point. Thus, we conduct a third experiment to test our hypothesized reference point shift by examining whether or not people under time pressure use the maximal possible outcome to evaluate all other outcomes – that is, all other gains over gains and all other losses over losses. If our hypothesis is correct, then people under time pressure should evaluate intermediary gains as relative losses, which should result in risk-seeking, and they should evaluate intermediary losses as relative gains, which should result in risk-aversion.

5. Experiment 3

Here, we construct a managerial scenario in which participants pretend to be managers of a multi-national company and have the opportunity to create or lose up to 600 jobs. They choose either the certain or risky option. In the jobs created condition, the certain option is expected to result in 300 jobs created, while the risky option is expected to result in 600 jobs created with 1/3 probability, 300 jobs created with 1/3 probability, and no jobs created with 1/3 probability. In the jobs lost condition, participants have the possibility of losing up to 600 jobs. The certain option is expected to result in 300 jobs lost, while the risky option is expected to result in 600 jobs lost with 1/3 probability, 300 jobs lost with 1/3 probability, and no jobs lost with 1/3 probability. If people under time pressure use the maximal possible outcome as their reference point, then those creating jobs should be less satisfied than those under no time pressure with an intermediate outcome since it falls short of the best possible gain of 600 jobs created. In contrast, those losing jobs should be more satisfied than those under no time pressure with an intermediate outcome since it falls short of the worst possible loss of 600 jobs lost. These predictions, if supported, would suggest that the reference point under time pressure is not at the status quo but likely at the maximal possible outcome both over gains and losses.

We adopt this scenario from Bazerman (1984) who found that final gains can be made to look like losses, while final losses can be made to look like gains. He did so by highlighting to his participants whether they had a chance to create jobs (such that intermediary gains would be worse than the best possible gain) or to lose jobs (such that intermediary losses would be better than the worst possible loss). In the current experiment, the same perception should occur, but this would be because people under time pressure focus on the best possible gain over gains and the worst possible loss over losses.

5.1. Method

We recruited 166 American users from Mechanical Turk, with a mean age of 29.6 years old. Participants randomly received either the jobs created or job lost scenario as described above. They indicated which option they would choose – the certain or risky option. Participants also randomly received either the time pressure or control condition. Participants in the time pressure condition had only 25 seconds to read the scenario and indicate their choice. Thus, this experiment used a 2 (time pressure: no, yes) $\times$ 2 (scenario: jobs created, jobs lost) between-participants design.

We then presented participants with a hypothetical outcome. Six months later, 300 jobs were created or lost depending on the condition. Participants who had the opportunity to create jobs indicated how happy they felt with this positive outcome, while participants who had the opportunity to lose jobs indicated how unhappy they felt with this negative outcome (1 = Not at All, 9 = Very Happy/Unhappy). They were under no time pressure when completing this question. Note that the hypothetical outcome presented was consistent with whichever option that participants had chosen, such that the outcome would appear to have been a natural possibility of whatever option that participants chose. However, it was also neither the smallest (0 jobs created or lost) nor largest possible outcome (600 jobs created or lost), which allowed us to assess participants' feelings toward an intermediary outcome. We decided on three possible outcomes and corresponding probabilities in this risky choice task for this purpose, as a basic two-level risky option, as in the Asian disease problem (Tversky & Kahneman, 1981), did not fit our criteria. Finally, all participants completed the same time pressure manipulation check as before.

5.2. Results

5.2.1. Time pressure check

Our time pressure manipulation was successful. Participants under time pressure felt that they had less time to make their risky choice ($M = 3.89$, $S.D. = 2.42$) than those under no time stress ($M = 5.73$, $S.D. = 2.23$), $t(164) = 5.10$, $p < .001$. A 2×2 ANOVA revealed neither a main effect of scenario nor a two-way interaction between domain and time pressure on participants' felt time ($ps > .75$).

5.2.2. Risk preference

Time pressure reversed risk preferences. Under no time pressure, participants with the possibility of creating jobs preferred the certain option to the risky one, while those with the possibility of losing jobs preferred the risky option to the certain one, $\chi^2(1) = 9.00$, $p < .001$. Again, these findings are consistent with prospect theory. However, participants under time pressure with the possibility of creating jobs preferred the risky option to the certain one, while those with the possibility of losing jobs preferred the certain option to the risky one, $\chi^2(1) = 23.42$, $p < .001$. These findings contrast Kahneman and Tversky's. Table 1 summarizes the proportion of participants' choices for the certain option.

5.2.3. Happiness with intermediary outcome

We then analyzed participants' happiness with the intermediary outcome. Fig. 3 presents the results. We did not perform a 2×2 ANOVA because participants who had the possibility of creating jobs responded to a measure of happiness that differed from those who had the possibility of losing jobs (i.e., they responded to a measure of unhappiness). Participants under time pressure who had the possibility of creating jobs were less happy with creating 300 jobs ($M = 5.65$) than those under no time pressure ($M = 6.89$), $t(74) = 2.71$, $p < .01$. Meanwhile, those under time pressure who had the possibility of losing jobs were more happy with losing 300 jobs ($M = 5.46$) than those under no time pressure ($M = 4.46$), $t(88) = 2.13$, $p < .04$. These findings suggest that over gains, time pressure decreased happiness with the intermediary gain, even though it was still a gain. However, over losses, it increased happiness with the intermediary loss, even though it was still a loss.

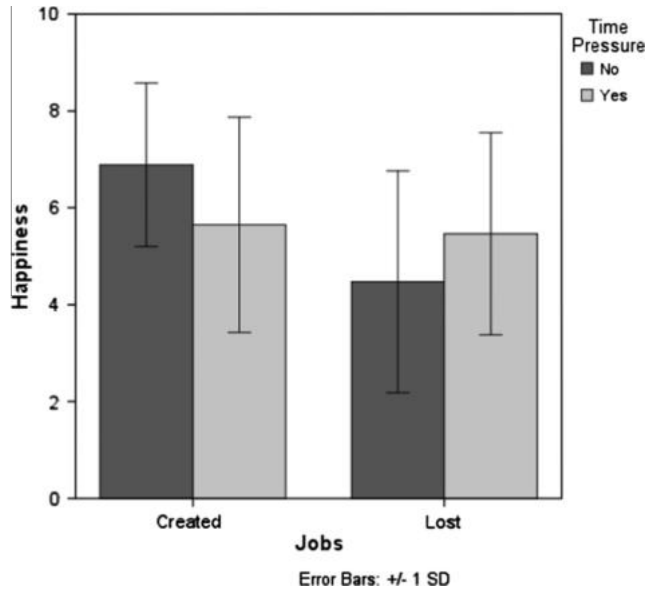

Fig. 3. Experiment 3: Happiness with intermediary outcome.

5.2.4. Mediation analyses

We also assessed whether or not participants' happiness with the intermediary outcome mediated the relationship between time pressure and risk preferences. As before, we conducted mediation analyses separately over gains and over losses, with time pressure as the independent variable (0 = no, 1 = yes), participants' perceived likelihood of the maximal possible outcome as the presumed mediating variable, and risk preference as the dependent variable (0 = certain, 1 = risky). Happiness was predicted using linear regressions, while risk preference was predicted using logistic regressions.

Over gains, time pressure decreased happiness with the intermediary gain ($\beta = -.30$, $p < .01$), and this lower happiness increased risk-seeking ($\beta = -.28$, $p < .02$). Time pressure also by itself increased risk-seeking ($\beta = .23$, $p < .04$). However, when we used both time pressure and happiness to predict risk preference simultaneously, the impact of time pressure attenuated ($\beta = .08$, $p = .17$), while that of lower happiness remained significant ($\beta = -.22$, $p < .04$). As well, a bootstrapping analysis revealed that the indirect effect of time pressure on risk-seeking through lower happiness over gains was estimated to lie between .06 and .58 (5000 samples, 95% C.I.). These findings indicate that mediation was significant.

Over losses, we reversed the scores of unhappiness to form a measure of happiness, merely to simplify data interpretation and form some consistency with our analysis over gains. Thus, lower unhappiness meant greater happiness. Time pressure increased happiness with the intermediary loss ($\beta = .22$, $p < .04$), and this greater happiness decreased risk-seeking (i.e., increased risk-aversion; $\beta = -.12$, $p < .01$). Time pressure also by itself decreased risk-seeking ($\beta = -.35$, $p < .001$). However, when we used both time pressure and happiness to predict risk preference simultaneously, the impact of time pressure attenuated ($\beta = -.04$, $p = .12$), while that of greater happiness remained significant ($\beta = -.12$, $p < .05$). As well, a bootstrapping analysis revealed that the indirect effect of time pressure on risk-seeking through greater happiness over losses was estimated to lie between $-.95$ and $-.02$. These findings indicate that mediation was significant. Figs. 4A and 4B present the individual pathways in the mediation analyses both over gains and losses.

5.3. Discussion

Experiment 2 indicated that the reduced psychological distance under time pressure, as indicated by probability inflation of the maximal possible outcome, leads to the risk preference reversal. However, the mediation did not indicate that this reversal was due to a reference point shift from the status quo to that outcome.

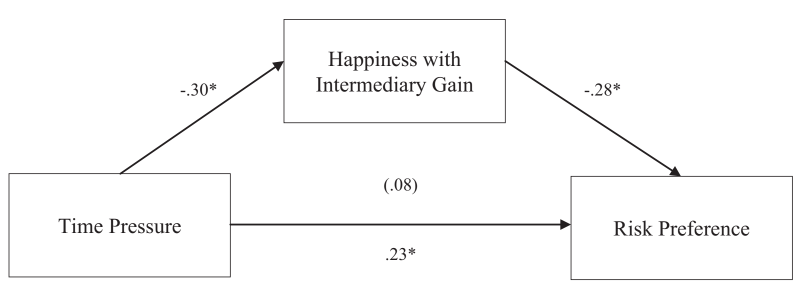

Fig. 4A. Experiment 3: Pathways in mediation analysis over gains. Path diagram of the mediation model with standardized beta weights. Time pressure was coded as 0 = no, 1 = yes; and risk preference was coded as 0 = certain, 1 = risky (therefore, a positive co-efficient indicates greater risk-seeking). For the direct effect of time pressure on risk preference, the value without parentheses is the co-efficient when the indirect (upper) path is not included. The value in the parenthesis is the co-efficient when the indirect path is included. $^{*}p < .05$.

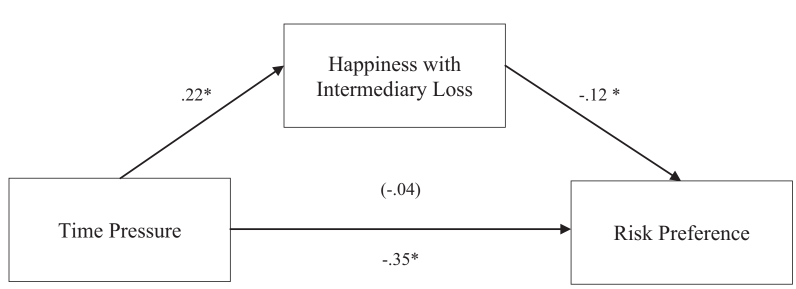

Fig. 4B. Experiment 3: Pathways in mediation analysis over losses. Path diagram of the mediation model with standardized beta weights. Time pressure was coded as 0 = no, 1 = yes; and risk preference was coded as 0 = certain, 1 = risky (therefore, a positive co-efficient indicates greater risk-seeking). For the direct effect of time pressure on risk preference, the value without parentheses is the co-efficient when the indirect (upper) path is not included. The value in the parenthesis is the co-efficient when the indirect path is included. $^{*}p < .05$.

The current experiment demonstrates this. People typically use the status quo to evaluate all other outcomes, such that intermediary gains are indeed perceived as gains and intermediary losses are perceived as losses. However, in this experiment, we find that people under time pressure use the best possible gain to evaluate all other gains, such that they see intermediary gains as relative losses, resulting in risk-seeking. Meanwhile, they use the worst possible loss to evaluate all other losses, such that they see intermediary losses as relative gains, resulting in risk-aversion. If there were no reference point shift, then people under time pressure over gains should still be pleased with any intermediary gain as it is better than none at all, and those over losses should still be disappointed with any intermediary loss as there is some loss rather than none.

6. Experiment 4

In this final experiment, we explore a boundary condition for the risk preference reversal under time pressure. A moderating variable has already been implied when we hypothesized and found that time pressure reduces the psychological distance between the decision-maker and the maximal possible outcome (Experiment 2), such that people under time pressure are likely to use it to evaluate all other ones (Experiment 3). This implies that any variable that prevents that distance from diminishing, even under time pressure, should attenuate the risk preference reversal.

Here, we draw inspiration from construal level theory (Trope & Liberman, 2010; Trope et al., 2007), according to which people perceive outcomes differently depending on their construal level as either concrete or abstract. Under a concrete construal, people not only inflate the perceived likelihood of various events and outcomes (Johnson et al., 1993; Sherman et al., 1985; Wakslak & Trope, 2009), but they also value them more or are more impacted by them (Frederick, Loewenstein, & O'Donoghue, 2002; Hoch & Loewenstein, 1991), compared to an abstract construal. This is because a concrete construal reduces the psychological distance between the decision-maker and the outcomes under consideration, but an abstract construal does not (or at least, the reduction is less). Thus, an implication of this is that the risk preference reversal should be unlikely to occur under time pressure for people under an abstract construal since the psychological distance is not reduced, but it should occur for those under a concrete construal since that distance is reduced. In effect, an abstract construal would be a boundary condition for the effect that we have found thus far. We test this possibility in this experiment by manipulating participants' construal as either concrete or abstract.

6.1. Methods

We recruited 176 American users from Mechanical Turk, with a mean age of 30.4 years old. Participants first received the Behavioral Identification Form (BIF; Vallacher & Wegner, 1987), an established measure of people's construal level by asking them to re-interpret 25 separate behaviors as their specific, concrete actions or their superordinate, abstract goals. For example, the measure included sample statements like "Making a list" that participants could re-interpret as their concrete action ("Writing things down") or their abstract super-ordinate goals ("Getting organized"). People who choose more concrete answers think more concretely than those who choose more abstract answers. Prior research has typically measured construal level, by counting the number of concrete or abstract answers that participants choose. However, we manipulated construal level here by instructing participants to choose either the "specific action" (concrete) for each behavior or its "overall purpose" (abstract). We provided an example so that they could make the appropriate assessment for the behaviors. Appendix A presents the instructions and example that participants received.

All participants then took part in a hypothetical lottery. Participants randomly received either the chance to win or lose some money. Those with the chance to win some money chose between winning \$20 with certainty and winning \$40 with .5 probability (or else nothing). Those with the chance to lose some money chose between losing \$20 with certainty and losing \$40 with .5 probability. Participants randomly received the time pressure or control condition. Participants in the time pressure condition had only seven seconds to make their choice. Thus, this experiment used a 2 (time pressure: no, yes) $\times$ 2 (outcome: win, lose) $\times$ 2 (construal: concrete, abstract) between-participants design. Finally, all participants completed the same time pressure check as before.

6.2. Results

6.2.1. Time pressure check

Our time pressure manipulation was successful. Participants under time pressure felt that they had less time to make their risky choice ($M = 5.74$) than those under no time stress ($M = 6.85$), $t(174) = 3.69$, $p < .001$. A 2 $\times$ 2 $\times$ 2 ANOVA revealed no main effect of outcome or construal and neither two- nor three-way interactions between outcome, time pressure, and construal on participants' felt time ($ps > .63$).

6.2.2. Construal level check

Our construal manipulation was also successful. On the BIF, we counted the number of concrete answers that participants chose as a manipulation check for their construal level. Participants asked to choose the "specific action" of each behavior scored higher on this measure ($M = 21.23$) than those asked to choose the "overall purpose" ($M = 11.73$), $t(174) = 4.54$, $p < .001$.

6.2.3. Risk preference

On participants' choice in the gambling task regardless of construal, we conducted a logistic regression analysis with outcome (-1 = lose, 1 = win), time pressure (0 = no, 1 = yes), and construal (0 = concrete, 1 = abstract), and all constitutive terms to predict risk preferences (0 = certain, 1 = risky). The two-way interaction between outcome and time pressure was significant ($\beta = -.22$, $p < .001$), which was qualified by the three-way interaction with construal level ($\beta = .64$, $p < .01$). Thus, we proceeded to examine the two-way interaction separately for participants under a concrete construal and those under an abstract construal.

For participants under a concrete construal, time pressure reversed risk preferences. Under no time pressure, participants with the possibility of winning preferred the certain option to the risky one, while those with the possibility of losing preferred the risky one to the certain one, $\chi^2(1) = 23.12$, $p < .001$. However, participants under time pressure with the possibility of winning preferred the risky option to the certain one, while those with the possibility of losing preferred the certain option to the risky one, $\chi^2(1) = 2.67$, $p = .09$. For participants under an abstract construal, risk preferences were the same regardless of time pressure. Under no time pressure, participants with the possibility of winning preferred the certain option to the risky one, while those with the possibility of losing preferred the risky option to the certain one, $\chi^2(1) = 5.74$, $p < .02$. Similarly, participants under time pressure with the possibility of winning preferred the certain option to the risky one, while those with the possibility of losing preferred the risky option to the certain, $\chi^2(1) = 9.54$, $p < .01$. Thus, the risk preference reversal under time pressure did not occur under an abstract construal. Table 2 summarizes the proportion of choices

Table 2
Summary of results for Experiment 4.

	Concrete		Abstract	
	Gain	Loss	Gain	Loss
No time pressure	.92	.38	.74	.38
Time pressure	.35	.63	.82	.37

The table summarizes the proportion of participants who preferred the certain (i.e., risk-averse) option.

for the certain option in each condition for both participants under concrete and abstract construals.

6.3. Discussion

We have so far in the previous experiments demonstrated that time pressure reverses risk preferences. Here, we find that abstract construal eliminates this reversal. In effect, it is a boundary condition for the effect that we have obtained thus far. This elimination of the overall effect is likely because an abstract construal does not reduce the psychological distance between the decision-maker and the maximal possible outcome. Indeed, people under an abstract construal perceive outcomes as less likely to occur (Johnson et al., 1993; Sherman et al., 1985; Wakslak & Trope, 2009) and place less value on the various outcomes under consideration (Frederick, Loewenstein, & O'Donoghue, 2002; Hoch & Loewenstein, 1991), compared to those under a concrete construal. This suggests that under an abstract construal, the reference point shift is unlikely to occur, even under time pressure. In other words, in situations where the psychological distance between the decision-maker and the maximal possible outcome is not reduced, such as an abstract construal, the pattern of risk preferences as predicted by prospect theory likely ensues.

7. General discussion

The literature on how time pressure impacts decision-making is extensive. For example, "harassed decision-makers" consider negative information to be more salient and more diagnostic, even more than ascribed by the negativity bias (Ben Zur & Breznitz, 1981; Kahneman & Tversky, 1979; Svenson & Edland, 1987; Wright, 1974); they adopt non-compensatory decision rules to simplify decision-making (Dhar & Nowlis, 1999; Ordóñez & Benson, 1997; Payne et al., 1993, 1996; Svenson et al., 1990); and they speed up the rate at which they process information (Ben Zur & Breznitz, 1981). All of these findings lead to the general conclusion that time pressure increases risk-aversion. However, we propose that time pressure in fact reverses risk preferences, in that people under time pressure are risk-seeking over gains and risk-averse over losses, in contrast to their usual risk preferences. Our reasoning is that the reference point shifts under time pressure from the status quo to the maximal possible outcome. Thus, people under time pressure evaluate possible gains in terms of possible losses, which results in risk-seeking, and they evaluate possible losses in terms of possible gains, which results in risk-aversion.

Our four experiments are consistent with this hypothesis. We demonstrate the overall effect in Experiment 1, in that time pressure reverses people's risk preferences. We then test our assumption that time pressure reduces the psychological distance between the decision-maker and the maximal possible outcome. Using people's subjective probability of the outcome as a proxy for this distance, we find in Experiment 2 that people under time pressure inflate its probability, suggesting that the distance reduces, and that this reduction leads to the risk preference reversal. Yet, this does not by itself indicate why this reduced distance does so. Thus, we test our hypothesized reference point shift from the status quo to the maximal possible outcome in Experiment 3. We confirm that people under time pressure evaluate intermediary gains as relative losses, which results in risk-seeking, but they evaluate intermediary losses as relative gains, which results in risk-aversion – which suggests that their reference point is at the maximal possible outcome. Finally, we explore a boundary condition for our effect. We find in Experiment 4 that, under an abstract construal, the risk preference reversal does not occur. This is likely because the psychological distance between the decision-maker and the maximal possible outcome is not reduced, even under time pressure.

Overall, there are consistencies between our effort here and prior work. As we had mentioned earlier, Busemeyer (1985; Busemeyer & Townsend, 1993; Dror et al., 1999) found that as the time that people have to make risky choices decreases, mixed gambles with positive EVs elicit risk-seeking while those with negative ones elicit risk-aversion. Subsequent investigations following his sequential sampling approach have found that people making risky choices "rapidly" tend to emphasize extreme payoffs over smaller ones (Zeigenfuse, Pleskac, & Liu, 2014). This finding was based on risk preferences involving mixed prospects, but it may be that people might emphasize the extreme gain when presented with risky prospects over gains, and they might emphasize the extreme loss when presented with prospects over losses. Our results would be consistent in this regard. As well, Zeigenfuse et al. did not examine time pressure. While there are some key aspects of time pressure aside from the mere need to make decisions "rapidly" (such as the need to maximize accuracy and minimize effort; Ordóñez & Benson, 1997; Payne et al., 1993, 1996), our results under time pressure nonetheless share similarities with Zeigenfuse et al.

At the same time, our present investigation might shed some light on prior inconsistencies. We noted earlier that people under time pressure, under some circumstances, may focus more on positive than negative information (Maule et al., 2000), in contrast to the typical assertion (Ben Zur & Breznitz, 1981; Svenson & Edland, 1987; Wright, 1974). These prior inconsistencies may lie merely in the methodology to assess negativity bias under time pressure or its definition, and we do not measure people's focus or information search on particular types of information *per se*. However, if people under time pressure use the best possible gain over gains and use the worst possible loss over losses as their reference point, then it is likely that they would also focus more on the positivity from the best possible gain over gains, and they would focus more on the negativity from the worst possible loss over losses. This would be consistent with the fact that people prefer to achieve elation and avoid disappointment (Bell, 1985; Loomes & Sugden, 1986; Mellers et al., 1997; Rottenstreich & Hsee, 2001), since the best possible gain occurring likely elicits elation (a positive thought) while the worst possible loss occurring likely elicits disappointment (a negative thought).

Most crucially, while our findings are seemingly contradictory to Kahneman and Tversky, they can in some ways be considered consistent with prospect theory. Indeed, our model of risk preferences under time pressure is based on the reference point. The well-understood model says that people make risky choices relative to the status quo as the reference point, but our belief is that people under time pressure make risky choices relative to the best possible gain over gains and the worst possible loss over losses. Thus, to the extent that people evaluate outcomes relative to a reference point – wherever it might be – and that the value function is concave in the domain of (perceived) gains and convex in the domain of (perceived) losses, our findings are in some ways more similar to than different from prospect theory. This also makes our research different from stochastic dominance approaches that have also found a risk preference reversal (under no time pressure), but their proposed reference point is still at the status quo, such that their value function is in other words convex in the domain of gains and concave in the domain of losses (Markowitz, 1952; Post & Levy, 2005) – which stands firmly in contrast to our model as well as prospect theory.

There are other questions that we are unable to address. For example, in Experiment 2, post-hoc justification of the likelihood estimates might be a concern because participants under time pressure made their risky choice first, and then reported their perceived likelihood of the maximal possible outcome. Nevertheless, combined results of Experiments 2 together with Experiment 3 provide a strong evidence of our proposed causal chain which ultimately led to the reversal in risky choice and minimize the possibility of a post-hoc justification. More generally, we used hypothetical choices in all our experiments. A natural question might be whether or not the risk preference reversal under time pressure generalizes to real-life stakes? We believe that the answer is "yes". There are various differences between hypothetical and real-life choices. However, a key difference from a construal level theory framework is that hypothetical choices are psychologically distant but real-life choices are close (Trope & Liberman, 2010; Trope et al., 2007). Given this, as well as that regarding the reduced psychological distance under time pressure (Experiment 2) and our use of construal level as a moderator for the risk preference reversal (Experiment 4), it is likely that our effect should hold, if not become stronger, if we were to use real-life choices because the psychological distance would be even closer than if we were to use hypothetical choices.

Finally, we wish to emphasize that our findings on time pressure likely differ from work on stress more generally. For example, Porcelli and Delgado (2009) found that framing effects heighten under stress, which is consistent with the view that stress impacts cognitive functioning (Zakay, 1993). People under stress allocate attentional capacity to the stressor and so are left with insufficient faculty to deal with the problem at hand (Mandler, 1982). Porcelli and Delgado argued that their effects result from a shift from System 2 to System 1 reasoning (Stanovich & West, 2000). That is, people have reduced cognitive faculties under a cold-pressor task and so strengthen their reliance on heuristic decision strategies. In our current research, we use time pressure, a form of stress but with different cognitive underpinnings. People under time pressure rely on heuristics, but this does not necessarily mean that their cognitive faculties are limited. Rather, they need to process information quickly and effectively (Dhar & Nowlis, 1999; Ordóñez & Benson, 1997; Payne et al., 1993, 1996; Svenson et al., 1990). In fact, time pressure alone without any other physiological stress can be an energetic or motivating force (Maule et al., 2000), which suggests that cognitive faculties may even be enhanced. Thus, we caution the generalization of our effects under time pressure to stress more generally. Future research should explore how time pressure is a unique form of stress with unique consequences for risk preferences.

With respect to implications, our effort here offers useful ones within organizational contexts. We find that people's risk preferences reverse under time pressure, in that not only the risk preference is changed but also people's satisfaction with the final outcome, because they are less likely to evaluate risky outcomes relative to the status quo, but more likely it is relative to the best possible gain or worst possible loss. In turn, these changes in satisfaction might impact how people perceive their original risk preference or act as a consequence. For example, managers might implement a policy under time pressure that differs from usual, and this would impact how satisfied (or not) they might be with it. Under time pressure, they might be more (or less) satisfied if the situation involved relative gains depending on the outcome, but under time pressure, they might be less (or more) satisfied instead. This outcome evaluation could lead to the view that the policy was beneficial or harmful to their organization, when in fact the reverse may have been true. Thus, organizations should implement procedures that limit the decision-making changes that might occur under time pressure in order to avoid these shifts in outcome satisfaction for the sake of consistency in policy implementation over time. Since managers often make hiring, financial, and other management decisions under time pressure, our findings here are of relevance.

That said, we emphasize that risk preferences under time pressure are not necessarily "inferior" or of "less quality" than those under no time pressure. Indeed, there are some situations where risk-seeking or risk-aversion may be of benefit or the "correct" action. For example, taking chances may lead to positive benefits that one might never have received if she were risk-averse, and conversely, playing things safe might protect oneself from exacerbating one's extant negativity. Of course, it is not always possible to foresee which outcome would be best, so it may be that the reverse risk preference may be the "right" one. However, if managers wish to remain at least consistent in their decisions, then they should take steps to do so, such as by placing themselves under an abstract construal. By definition, people make risky choices under time pressure in haste, and so it would be likely impossible to intervene given this constraint, but at least an awareness of how such decisions deviate from usual would offer a greater understanding of decision-making for managers and researchers alike.

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Appendix A. Instructions for manipulating construal level with BIF

Any behavior can be identified in many ways. For example, one person might describe a behavior as "typing a paper", while another might describe the behavior as "pushing keys". Yet another person might describe the behavior as "expressing thoughts". Consider another example:

Going to a bar

a. Buying drinks
b. Having a good evening out

You can re-describe "making a list" in terms of its physical action such as "writing things down", or in terms of its goal or objective such as "getting organized". On the following pages, we will present you 25 different types of behaviors. Under each behavior, there will be two different ways in which you can re-describe the original behavior. Your task for each behavior is to re-describe it in terms of its [physical action/goal or objective].

Participants are then presented with the standard 25 behavioral statements from the original BIF (Vallacher & Wegner, 1987).

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