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# Building Toward a Solid Foundation: The Effect of Thinking Concretely about the Future

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## Abstract

According to construal level theory, consumers tend to think about their future abstractly, making it unclear and inexact. Here, a new approach is developed to help people enhance their future-oriented outcomes by priming them to think about their future concretely. Two experiments show that priming a concrete mindset about the future leads to enhanced future-oriented outcomes. Specifically, the studies show that participants discounted current funds in favor of future gains less when they were primed with a concrete mindset. Opportunity cost consideration is shown to be the mechanism driving this effect. Though research suggests that most consumers do not consider opportunity costs unless they are explicitly presented to them, priming a concrete mindset increases consideration of opportunity costs so that consumers can make better current decisions that will enhance their future-oriented outcomes. This research helps to better understand why thinking concretely about the future is beneficial to future-oriented outcomes.

While the majority (62%) of Americans report a preference to saving money over spending (Swift, **2016**), over half of Americans will not have enough savings to maintain their accustomed standard of living upon retirement (Porter, **2015**). Similarly, 53% of Americans want to lose weight (Moore, **2014**) but more than one third of Americans are considered to be obese (Center for Disease Control, **2017**). Though people may have the best of intentions, research indicates that they often miss the mark when considering future outcomes of present decisions (Kees, **2011**). This may be due to the propensity for consumers' decisions to be motivated by the fulfillment of present needs, like spending money or eating more, without considering the consequences they may experience for those decisions in the future, such as a lack of savings or gaining weight (Csikszentmihalyi, **2000**; Martin *et al.*, **2013**). That is, consumers typically weigh immediate outcomes more heavily compared to distant ones (Lynch Jr. and Zauberman, **2006**). For example, a consumer may be more likely to consider replacing their older model car with something brand new instead of driving their older car for a longer period of time in order to save more for their retirement.

According to construal level theory (CLT), people tend to think of the future in more abstract terms and construe it in much less detail than the present (e.g., Liberman and Trope, **1998**; Trope and Liberman, **2003, 2010**) as there is less specific and reliable information available with which to focus on their future (Trope *et al.*, **2007**). Some progress has been made in attempting to understand and improve individual's decisions about future outcomes (Howlett *et al.*, **2008**; Hershfield *et al.*, **2009, 2011**; Laran, **2010**; Bartels and Urminsky, **2015**; Ein-Gar, **2015**; Pounders *et al.*, **2015**). Specifically, work has often focused on how thinking abstractly in the present about the present can positively affect decisions related to future-oriented outcomes (Fujita *et al.*, **2006**; Fujita and Carnevale, **2012**).

What is less understood is how thinking about the future in the present might impact such decisions. Specifically, the literature offers varied results as to whether it is concrete or abstract thinking that enhances decision making. For example, prior research suggests that abstract thinking enhances self-control, thereby positively influencing decision making in the present (Fujita *et al.*, **2006**; Fujita and Roberts, **2010**; Fujita and Carnevale, **2012**). However, there is some evidence to suggest that thinking in concrete terms may also have a positive impact on future outcomes (e.g., Pounders *et al.*, **2015**). For instance, Chandran and Menon (**2004**) found in their examination of framing health hazards that more concrete framing results in increased self-risk perceptions, intentions to exercise precautionary behavior, concern and anxiety about the hazard, and effectiveness of risk communication. Thus, here we further explore this point of conflict in the literature. Specifically, we suggest that leading people to intentionally view the future more concretely may help them see how their actions today impact their future, thus enhancing future-oriented outcomes. This notion runs counter to the majority of findings regarding construal level, which seek a match between the construal of an event and its psychological distance (i.e., concrete with near and abstract with far; Lu and Jen, **2016**). Here, we suggest that going against this grain and applying a concrete mindset with long-term outcomes may be beneficial for consumers.

Beyond our examination of whether thinking about the future more concretely results in better future-oriented outcomes, it is also important to understand why this might occur. Research has shown that people do not often consider opportunity costs and alternative options and that future research should examine opportunity costs in relation to future evaluations (Frederick *et al.*, **2009**). Thus, consumers still often fail to consider the future consequences of their behavior (Baumeister, **2002**; Bearden and Haws, **2012**; Kukar-Kinney *et al.*, **2016**). If research has shown that considering more opportunity costs can be beneficial for consumers but they tend not to (Frederick *et al.*, **2009**), how then can they be persuaded to consider those opportunity costs? We propose that thinking concretely about the future positively influences consumer consideration of opportunity cost, explaining the increase in present decisions that result in favorable future outcomes.

# 1 THEORETICAL DEVELOPMENT

## 1.1 CLT and future-oriented outcomes

Prior research has examined why consumers do not fully meet their potential in terms of positive future-oriented outcomes using CLT (Trope and Liberman, **2000**, **2003**). We define future-oriented outcomes as benefits in the future stemming from endeavors in the present. CLT suggests that events or objects can be represented or interpreted at varying levels of abstraction (Trope and Liberman, **2010**). More abstract features represent a high-level construal, and more concrete features represent a low-level construal. CLT highlights psychological distance as a major factor contributing to which level of construal that is activated (Barque-Duran *et al.*, **2017**). Increased distancing on a dimension of psychological distance (i.e., time, space, social, hypotheticality) results in greater activation of the high-level construal compared to the low-level construal (Liberman *et al.*, **2002**). For instance, present events are represented in more concrete terms (low-level construal) while future events are seen as more abstract (high-level construal). While CLT suggests that psychological distance, specifically temporal distance in this context, will systematically change the level of abstraction at which events are interpreted, it could be possible to alter this normative tendency to enhance future-oriented outcomes. Whether information is seen as abstract or concrete affects how consumers process and act on that information (Liberman *et al.*, **2002**; Trope and Liberman, **2003**). When following a low-level construal, consumers tend to reflect on the feasibility of the outcome (Agrawal *et al.*, **2006**). Kivetz and Simonson (**2002**) found that consumers make more indulgent choices as temporal distance increases, which could be bad for future-oriented outcomes. Similarly, research has also found people prefer pleasure over meaning in the near future, as meaning requires a higher-level construal than pleasure (Kim *et al.*, **2014**). Consumers tend to think about the future with a higher-level construal and focus on the more desirable attributes of their choices.

It may be that thinking abstractly about the future could lead to more indulgent decision making in the present. For instance, Kivetz and Simonson (**2002**) found that as time until an outcome increases, lottery participants were more likely to select indulgent prizes over cash rewards. However, research also suggests that thinking abstractly about the present can promote self-control in the present (Fujita and Roberts, **2010**), which should ultimately enhance future-oriented outcomes (Fujita *et al.*, **2006**; Fujita and Carnevale, **2012**). One explanation for the benefits of thinking abstractly is that such processing makes the temptations of the present seem more negative because they are being processed more implicitly (Fujita and Anna Han, **2009**).

Further, literature examining psychological distance and CLT has largely focused on how the two complement each to impact consumer decisions. For instance, Yudkin *et al.* (**2020**) found that people tend to naturally seek out high-level information (abstract) when they feel they are comparing themselves to psychologically distant others. Additionally, Lu and Jen (**2016**) discuss how, because distant events are naturally construed in abstract terms, consumers face difficulty, and longer decision times with additive product framing (monetary loss) in the near future and with subtractive product framing (utility loss) in the distant future. In this manuscript, however, we examine how a mismatch between construal level with psychological distance can result in positive future outcomes.

While the research discussed above focuses on thinking abstractly in the present about the present, which is a natural match between construal level and psychological distance, the effects may not benefit future-oriented outcomes. A different approach may be required when thinking in the present about the future, which is a mismatch between construal level and psychological distance. Malkoc *et al.* (**2010**) found that abstract thought indeed reduces a present-bias, however, this reduction does not occur when the task itself is abstract. As the future is naturally abstract, thinking about the future may not have the same benefits as thinking abstractly about the present. Though people naturally think about the future in abstract terms, they could be encouraged

and led to think about their future more concretely which may enhance their future-oriented outcomes. For example, research suggests that when consumers feel more connected to who they might be in the future, they have increased patience for future rewards (i.e., enhanced future-oriented outcomes; Bartels and Urminsky, 2015; Hershfield *et al.*, 2011). Specifically, Hershfield *et al.* (2011) found that showing people age processed renderings of themselves enhanced connection to the future self and caused them to allocate more resources to the future. Additionally, processed focused thinking has been shown to decrease temporal inconsistency over time (Zhao *et al.*, 2007) which should improve long-term choice and satisfaction (Yao *et al.*, 2009).

Lynch Jr. and Zauberman (2006) suggest that consumers do not save for retirement from their current incomes because using their current earnings seems costly. However, when encouraged to think about saving from future earnings, total saving rates increase. Consumers do not want to give up resources they could use in the present because the costs of giving up resources are more painful to themselves in the present than in the future (Eyal *et al.*, 2004). The reverse of this is also true, where benefits are more important than costs in the future. By making the future seem more concrete, the future benefits of present costs are made more salient. Ultimately, people may be more willing to sacrifice today if they are focused on what future benefits such sacrifices will have. Thus, we predict:

**H1:** Thinking about the future concretely will enhance future-oriented outcomes.

## 1.2 Concreteness and opportunity cost

Classic economic theory assumes that consumers should both think and behave rationally in that they maximize their benefits and minimize their losses when making decisions about their future (Thaler, 1980). From a rational perspective, consumers should consider opportunity costs when making decisions. Opportunity cost consideration occurs when alternative uses of resources are considered by consumers deciding whether or not to spend their resources (Spiller, 2011). Consideration of opportunity costs requires consumers to take into account options that are not explicit components of a current decision. However, contrary to classic economic theory, research suggests it is more often irrationality that informs judgments and decision making (Tversky and Kahneman, 1974; Thaler, 1980; Ariely, 2008). Consumers often neglect to consider opportunity costs (Northcraft and Neale, 1986; Frederick *et al.*, 2009) because judgments and preferences are primarily based on information that is explicitly involved in the choice at hand (Kahneman and Frederick, 2002). Thus, people often ignore the fact that the choices they make in the present can have a negative impact on their future choices as the resources they use now will not be available in the future.

Several explanations have been offered up by researchers to explain opportunity cost neglect, including focusing bias in judgment and decision making (Legrenzi *et al.*, 1993), resource constraints (Spiller, 2011), and individual differences (e.g., propensity to plan for using money and spending habits; Rick *et al.*, 2008; Spiller, 2011). People tend to not consider opportunity costs if the costs are not obvious from the choice framing (Lucas Jr., 2015). For instance, when faced with the choice between smaller sooner and larger later options, consumers tend to prefer the smaller sooner option (Read, 2004; Urminsky and Zauberman, 2014) reflecting a lack of focus on the future implications of their actions. However, research suggests that emphasizing null options (i.e., reframing smaller sooner as “something now and nothing later” and larger later as “nothing now, but more later”) can decrease consumers' willingness to make smaller, sooner choices (Magen *et al.*, 2008). Thus, this simple act of reframing choices seems to make the opportunity costs more salient.

Moreover, research indicates that alternative options that are not explicit components of the current decision are more likely to be considered when they become relevant to consumers' choices (Hauser and Wernerfelt, 1990; Roberts and Lattin, 1991; Mitra *et al.*, 1995). When consumers pay more attention to these options (Spiller, 2011) or, as we posit, information is presented in a concrete manner making the information

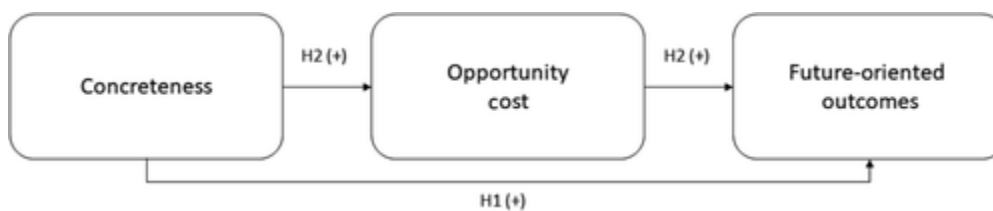
more salient and relevant, they are more likely to selectively process other alternatives (Jiang and Punj, 2010) or increase their opportunity cost consideration set. Thus, by presenting the future more concretely, the specific consequences of a choice are emphasized. People are more prone to consider opportunity costs when they have been made to consider the implications of their current choices on future outcomes. That is, we suggest that by encouraging consumers to adopt a more concrete mindset about their future, they will be more likely to consider opportunity costs.

Consideration of opportunity costs has been shown to increase the sensitivity of the value placed on the implications of future actions (Spiller, 2011). For instance, consumers reduce current spending primarily when opportunity costs are recognized and when valuation of future outcomes is high (Bartels and Urminsky, 2015). Research and economists also claim that when opportunity costs are considered, people make better decisions (Lucas Jr., 2015). Thus, when people consider opportunity costs, their future-oriented outcomes should be enhanced. Drawing on this prior research, we suggest that priming consumers to think concretely about the future may be a way to increase the consideration of opportunity costs which will thereby enhance future-oriented outcomes. More formally, we predict:

**H2:** The relationship between a concrete mindset and future-oriented outcomes is mediated by opportunity cost, such that consumers who view the future more concretely will have a higher level of consideration for opportunity costs which will lead to enhanced future-oriented outcomes.

## 2 OVERVIEW OF STUDIES

Two studies are conducted to examine the two hypotheses regarding the effect of a concrete mindset onto future-oriented outcomes (see Figure 1). Specifically, both studies examine future-oriented outcomes by looking at discounting current funds for future gains. That is, people tend to have a present bias, where we tend to view future funds as less valuable than funds available today. Study 1 uses a temporal discounting task to compare not thinking about the future (control), thinking abstractly about the future, or thinking concretely about the future. Study 2 utilizes the same temporal discounting task to examine the mechanism of opportunity cost consideration within this effect.



**FIGURE 1** Conceptual model

### 2.1 Study 1

The purpose of study 1 was to provide an initial examination of the effect thinking concretely about the future has on future-oriented outcomes. Thinking about the future was manipulated over three conditions where participants were asked to think about the future in abstract terms, concrete terms, or not at all.

#### 2.1.1 Procedure

Two hundred forty-seven MTurk users completed this study for nominal compensation (37.3% male, average age 31). An additional 29 participants were not used due to missed reading checks, incomplete surveys, or nonsensical responses. Participants were randomly assigned to either the think concretely about the future ( $n = 84$ ), think abstractly about the future ( $n = 79$ ), or control condition ( $n = 84$ ). In the abstract and concrete conditions participants were first asked to complete a thought listing task (Freitas *et al.*, 2004), describing their life 5 years from today (adapted from Trope and Liberman, 2000). Participants in the concrete condition were

asked to describe specifics of their life goals 5 years from today. Then, they were asked two follow-up questions about *how* they would achieve such goals. Those in the abstract condition were asked to describe broad concepts about their life goals 5 years from today. They were then asked a two follow-up questions about *why* they wanted to achieve these things. Not only were the initial questions asked between the concrete and abstract conditions priming how they would think about the future, but the follow-up questions based on CLT research further encouraged this thinking (Trope and Liberman, **2000**; Freitas *et al.*, **2004**; Hamilton and Thompson, **2007**; Liberman *et al.*, **2007b**). A sample response to each manipulation is presented in the appendix for added clarity.

Those in the control condition completed a word unscramble task using neutral words from Dunn and Hoegg (**2014**) as a filler task as they were not asked to think about the future. Following the manipulation, participants completed a temporal discounting task adapted from Bartels and Urminsky (**2011**), which included four items, such as “I would be indifferent between \$\_\_\_ today and \$100 in 5 years” with bases of \$100, \$250, \$500, and \$1,000. Participants' responses were coded as a percentage discount for each item and these were averaged to create a composite discount rate ( $\alpha = .68$ ). Here, it is predicted that those in the concrete condition will discount less deeply for the future as they are more sensitive to future benefits and are willing to delay gratification. In other words, valuing money more in the future (i.e., discounting it less) suggests enhanced future-oriented outcomes as deep discounting is often cited as a primary reason why consumers fail to adequately save for the future (Diamond and Köszegi, **2003**). Finally, respondents completed a concrete mindset manipulation check adapted from Ein-Gar (**2015**). They were asked how concrete, tangible, and detailed they viewed their life 5 years from now ( $\alpha = .79$ ) (See appendix for measures). Additionally, a sensitivity power analysis was conducted, revealing that this sample size is adequate for uncovering a small to medium effect size (*Cohen's f* = .20).

### 2.1.2 Pretest

It may be possible that the manipulations used in this study are driving alternate differences that may account for the proposed effect. For instance, the concrete condition asks participants to focus on their goals 5 years from now and how to achieve them, where the abstract condition asks participants to focus on the meaning of their life in 5 years and why these reasons matter. Research suggests that consumers with high construal levels may be more committed to specific (concrete) versus nonspecific (abstract) goals, because these specific goals are perceived as more important (Ülkümen and Cheema, **2011**). It is possible that the thinking concretely about the future increases goal importance.

It may also be that priming people to think about their future more concretely is not so different from vividly imagining oneself in the future, increasing connectedness to the future self (Bartels and Urminsky, **2015**). As connectedness to the future self has been shown to increase patience it could driving the effect of thinking concretely about the future.

Additionally, thinking about the future more concretely may enhance feelings about the nearness of the future itself (i.e., Chandran and Menon, **2004**; Trope and Liberman, **2010**), thereby increasing the need to act on goals. For instance, if a person feels as if the future is closer the need to act on future goals may become greater. Thus, a pretest was conducted to explore possible differences in goal importance, temporal proximity, and connectedness to the future self between the concrete, abstract, and control conditions. The manipulation check from the main study was also included to ensure the efficacy of the manipulation.

Ninety-two participants were recruited from Amazon's Mechanical Turk (MTurk) for the pretest (52.5% male, average age 36). Participants were presented with either the concrete, abstract, or control condition and then the goal importance scale ( $\alpha = .95$ , Houston and Walker, **1996**), temporal proximity scale ( $\alpha = .91$ , Pounders *et*

*al.*, 2015), and connectedness to the future-self scale ( $\alpha = .75$ , Hershfield *et al.*, 2009) and manipulation check ( $\alpha = .75$ ). All measures are presented in the appendix.

The manipulation check was examined first. Results reveal a significant one-way analysis of variance (ANOVA),  $F(2, 89) = 11.96, p < .01$ , indicating a significant effect between conditions. Those in the concrete condition ( $M = 5.55, SD = .82$ ) viewed the future as more concrete than those in both the abstract,  $M = 4.73, SD = 1.17, t(57) = -3.10, p < .01$ , and control  $M = 4.27, SD = 1.07, t(60) = -5.12, p < .01$ , conditions. There was no significant difference in concrete mindset between the abstract and control conditions,  $t(61) = -1.63, p = .11$ . This was expected as thinking about the future abstractly is how research suggests people typically think about the future. Thus, simply thinking more about the future (abstractly) does not cause one to view the future more concretely than not thinking at all about the future.

The three confounds were examined next. Results of multiple one-way ANOVAs revealed no differences across conditions for goal importance,  $F(2, 89) = .64, p = .53$ , temporal proximity,  $F(2, 89) = 1.96, p = .15$ , and connectedness to the future self,  $F(2, 89) = 2.10, p = .13$ , mitigating concerns for these potential confounds in our concrete manipulation. Thus, the manipulations pretested here are successful in that only the concreteness of the future was found to be manipulated across conditions.

### 2.1.3 Main study results

First, the efficacy of the manipulation was assessed via the manipulation check. A significant one-way ANOVA,  $F(2, 244) = 23.93, p < .001$ , revealed a significant effect between conditions, just as in the pretest. Those in the concrete condition ( $M = 5.28, SD = .85$ ) viewed the future as more concrete than both the abstract,  $M = 4.27, SD = 1.31, t(161) = 5.78, p < .001$ , and control,  $M = 4.11, SD = 1.30, t(166) = 6.82, p < .001$ , conditions. There was no significant difference between the control and abstract conditions,  $t(161) = .87, p = .39$ . As consumers by default tend to view the future abstractly (Trope *et al.*, 2007; Liberman *et al.*, 2007a), the control condition seems to be a representation of the consumers' natural state as it does not differ from the abstract condition; both the control and abstract condition essentially represent thinking about the future abstractly.

Future-oriented outcomes were then assessed using the discounting task. A significant one-way ANOVA,  $F(2, 244) = 4.14, p < .05$ , indicated a significant effect between the three conditions. A concrete mindset improved future-oriented outcomes as these participants were less likely to discount the value of money in the future ( $M = 61.64\%, SD = 32.04\%$ ), specifically in 5 years, than those in the abstract condition,  $M = 49.67\%, SD = 33.87\%, t(161) = 2.32, p < .05$ , or control condition,  $M = 45.93\%, SD = 43.59\%, t(166) = 2.66, p < .01$ . There were also no differences between those in the abstract and control conditions,  $t(161) = .61, p = .54$ . These results support H1 in that thinking concretely about the future led to greater future-oriented outcomes than thinking abstractly about the future or not thinking about the future at all.

### 2.1.4 Discussion

Results of this study indicate that thinking concretely about the future reduces discounting compared to thinking abstractly about the future and the not thinking at all about the future (control). In this task, participants who thought concretely about their future were less likely to discount current funds in favor of future gains than those who were not asked to think about their future or who thought abstractly about their future.

For example, a participant who was asked to think concretely about their future was on average, indifferent between \$62 today and \$100 in 5 years. However, a person who was asked to think abstractly or not at all about their future, was, on average, indifferent between \$50 and \$46, respectively, today and \$100 in 5 years. In the context of saving money, those thinking concretely about the future are just as likely to save as those thinking abstractly when interest rates are over one third lower. Importantly, there was no difference in discounting between the abstract and control conditions. This is expected because consumers naturally think about the



future in abstract terms (Trope *et al.*, 2007; Liberman *et al.*, 2007a). It is not enough to simply have a consumer think about their future, the consumer has to be guided to think very specifically about the future in order to see increased future-oriented outcomes. Priming consumers to think abstractly about the future is no better for future-oriented outcomes than not having previously thought about their future at all. This hypothesized effect is most likely due to consumers considering more opportunity costs when they are primed to think concretely about their future. Study 2 examines a mediator of opportunity costs to show why a concrete mindset leads to better future-oriented outcomes than an abstract mindset. In the following study, we explore the effect of a concrete mindset onto future-oriented outcomes further by examining the underlying psychological mechanism of opportunity cost consideration.

## 2.2 Study 2

Study 1 provides initial support for our conceptual model demonstrating that a concrete mindset enhances future-oriented outcomes. Study 2 was conducted to further replicate the results of study 1 and explore the psychological mechanism of opportunity cost consideration. It is also possible, that instead of a heightened consideration of opportunity costs, a concrete mindset leads consumers to take more responsibility for their future, and that is, in turn, what improves future-oriented outcomes. Consumers in an abstract mindset are more likely to characterize their behavior according to their dispositional traits and less likely to consider the future impact of their behavior (Trope and Liberman, 2003). This is because consumers have less information about themselves in the future and little knowledge about how their future self will manifest (Wakslak *et al.*, 2008), reducing feelings of responsibility for this future self. Alternatively, a concrete mindset is associated with feasibility of actions (Liberman and Trope, 1998). Concrete thoughts allow for more detail and structure with which to characterize behaviors. Consumers in a concrete mindset may be able to more clearly picture themselves in the distant future thus accepting more responsibility for the achievement of this future self. Therefore, we also examine personal responsibility as an alternative explanation to opportunity cost consideration which also provides a more complete test of our causal model (Fiedler *et al.*, 2018).

### 2.2.1 Procedure

Study 1 demonstrated that thinking concretely about the future enhanced future-oriented outcomes over both thinking abstractly about the future and not thinking about the future, thus study 2 compares concrete thinking versus a control condition. One hundred forty-one MTurk participants completed this study for nominal compensation (50.3% male, average age 37). An additional seven participants were not used due to missed reading checks or incomplete surveys. Participants began by completing either a concrete manipulation, similar to study 1 (adapted from Malkoc and Zauberman, 2006), or the control task from study 1. The concreteness task used in study 2 was a more conservative manipulation than study 1 as it eliminated the follow-up questions and used a shorter, 3-year time frame. This shorter time framed was used to ensure the robustness of our effect to a shorter time horizon, as research has shown people to be sensitive to changes in time delay (Reed and Martens, 2011). Next, participants completed a temporal discounting task from study 1 ( $\alpha = .72$ ) which also used a 3-year time period. Participants then completed measures of opportunity cost (Spiller, 2011;  $\alpha = .79$ ) and personal responsibility (Paulhus, 1983;  $\alpha = .70$ ). Finally, participants completed the concreteness manipulation check (Ein-Gar, 2015;  $\alpha = .72$ ). See the appendices for the manipulation and measures. A sensitivity power analysis reveals that this sample size is adequate for uncovering a small to medium effect size with both the experimental manipulation and the two competing mediators in the model (Cohen's  $f^2 = .08$ ).

### 2.2.2 Results

The results of the manipulation were successful as those in the concrete condition ( $n = 70$ ,  $M = 4.83$ ,  $SD = 1.27$ ) thought more concretely about their future than those in the control condition,  $n = 71$ ,  $M = 4.42$ ,  $SD = .95$ ,  $t(139) = 2.15$ ,  $p < .05$ . Future-oriented outcomes were again assessed using the discounting task. A significant one-way ANOVA,  $F(1, 139) = 4.21$ ,  $p < .05$ , indicated a significant effect between the conditions. Participants were less

likely to discount the value of money in the future ( $M = 85.04\%$ ,  $SD = 57.67\%$ ), specifically in 3 years, than those in the control condition ( $M = 66.24\%$ ,  $SD = 52.05\%$ ). These results support H1 and replicate the findings from study 1.

PROCESS Model 4 (Hayes, **2017**) was used to examine the mediating effect of opportunity cost consideration ( $M = 5.23$ ,  $SD = 1.11$ ) and the alternative explanation of personal responsibility ( $M = 5.30$ ,  $SD = .69$ ). All analyses are reported consistent with Zhao *et al.* (**2010**) recommendations as all reported coefficients are unstandardized, indirect effects were estimated with 5,000 bias-corrected bootstrap samples, and confidence intervals are reported at 95%. The total effect suggests that, as in study 1, a concrete mindset improved future-oriented outcomes ( $c' = .19$ ,  $SE = .09$ ,  $t = 2.05$ ,  $p < .05$ ).

Those in the concrete condition, coded as "0" were more likely to consider opportunity costs than those in the control condition, coded as "1" ( $a = .51$ ,  $SE = .18$ ,  $t = 2.83$ ,  $p < .01$ ) while there was no effect on personal responsibility ( $a = .01$ ,  $SE = .12$ ,  $t = .06$ ,  $p = .95$ ). Additionally, opportunity cost consideration was significantly related to temporal discounting where those who were more likely to consider opportunity costs were less likely to exhibit temporal discounting ( $b = .10$ ,  $SE = .04$ ,  $t = 2.26$ ,  $p = .03$ ). Once again there was no effect of personal responsibility ( $b = -.02$ ,  $SE = .07$ ,  $t = -.30$ ,  $p = .76$ ). Furthermore, the indirect effect of condition onto temporal discounting through opportunity cost consideration was significant ( $a*b = .05$ , CI: [.006, .117]) while the indirect effect through personal responsibility was nonsignificant ( $a*b = -.00$ , CI: [-.018, .015]). Finally, the direct effect of condition onto temporal discounting was nonsignificant when accounting for the mediators ( $c = .14$ ,  $SE = .09$ ,  $t = 1.49$ ,  $p = .14$ ). These results are presented in Table 1.

**TABLE 1.** Study 2 mediation analysis

	Estimate (SE)	t	p	CI <sub>Low</sub>	CI <sub>High</sub>
A paths					
Opportunity cost	.51 (.18)	2.83	<.01	0.15	0.87
Personal responsibility	.01 (.12)	0.06	.95	-0.22	0.24
B paths					
Personal responsibility	-.02 (.07)	-0.3	.76	-0.15	0.11
Opportunity cost	.10 (.04)	2.26	.03	0.01	0.18
Indirect effects					
Personal responsibility	-.00 (.01)			-0.02	0.02
Opportunity cost	.05 (.03)			0.01	0.12
Direct effect	.14 (.09)	1.49	.14	-0.05	0.32
Total effect	.19 (.09)	2.05	.04	0.01	0.37

An alternative causal model that is not ruled out in the current analysis is a model of reflection (Fiedler *et al.*, **2018**) where the concrete manipulation affects temporal discounting which then makes people more likely to consider opportunity costs. While the manipulation does impact temporal discounting ( $a = .19$ ,  $SE = .09$ ,  $t = 2.05$ ,  $p = .04$ ) which then influences opportunity costs ( $b = .37$ ,  $SE = .17$ ,  $t = 2.24$ ,  $p = .03$ ) the indirect effect through temporal discounting is nonsignificant ( $a*b = .07$ , CI: [-.003, .170]). Additionally, all intervariable correlations from this analysis are presented in Table 2.

**TABLE 2.** Study 2 intervariable correlations

Variable	Mean (SD)	(1)	(2)	(3)	(4)
(1) Concrete manipulation	—	—			
(2) Opportunity costs	5.23 (1.11)	.23**	$\alpha = .79$		
(3) Personal responsibility	5.30 (0.69)	.01	0.15*	$\alpha = .70$	
(4) Temporal discounting	75.57% (55.02%)	.17**	.22***	.01	$\alpha = .72$

Note: The diagonal presents Cronbach reliabilities for each variable, except for the manipulation. All correlations with the concrete manipulation are Point-Biserial correlations, all others are Pearson correlations. \* $p < .10$ ; \*\* $p < .05$ ; \*\*\* $p < .01$ .

Taken together, these results support indirect only mediation through opportunity cost consideration (Zhao *et al.*, 2010), ultimately supporting H2. Thus, opportunity cost consideration is supported as the mechanism explaining the effect of thinking concretely about the future on future-oriented outcomes. Personal responsibility was ruled out as a potential alternative explanation to this effect, the mediation results hold if personal responsibility is excluded from the analysis, and the reflected model is also ruled out.

### 2.2.3 Discussion

Results of this study again found that that thinking concretely about the reduces discounting compared relative to thinking abstracting, supporting the prediction that a concrete mindset improves future-oriented outcomes, supporting H1 and replicating findings from study 1. Additionally, opportunity cost consideration was also illuminated as the psychological mechanism guiding this effect. Consumers often neglect to consider opportunity costs when making decisions now about their future (Northcraft and Neale, 1986; Frederick *et al.*, 2009). Past research has suggested that consumers will consider other options when they become more relevant to their choices (Hauser and Wernerfelt, 1990). With concrete thinking, a consumer more clearly sees the “how” of their actions (Freitas *et al.*, 2004), allowing them to better understand what opportunity costs would be involved in their decision making about the future. For example, if a person thinking about their future says one of their goals is to have a nice car in 3 years, concrete thinking would ask them to think about how they are going to achieve that goal. The person would then likely start to realize they have to put money aside and give up using that money on other things now in order to get the car in the future. However, a person thinking abstractly will not think about the how and think more about the why (Freitas *et al.*, 2004). A person thinking about why they want a nice car in 3 years is not giving thought to the actions necessary to achieve that goal and therefore not greatly considering what they would have to give up. Overall, consumers primed with a concrete mindset consider more opportunity costs, enhancing future-oriented outcomes.

## 3 GENERAL DISCUSSION

Across two studies, a conceptual model of concrete mindset was developed and tested. The results show that priming consumers to think about their future more concretely results in enhanced future-oriented outcomes through opportunity cost consideration.

### 3.1 Theoretical and practical implications

Our work extends prior literature that examines how to help consumers make better decisions in the present that positively impact their future (Hershfield *et al.*, 2009; Bartels and Urminsky, 2015; Ein-Gar, 2015). Specifically, results have varied across studies as to whether it is a concrete or an abstract mindset that enhances decision making. For instance, while some work has found that an abstract mindset can enhance self-control which should enhance decision-making in the present (Fujita *et al.*, 2006; Fujita and Roberts, 2010; Fujita and Carnevale, 2012), other work has shown that concrete framing can result in favorable decisions in the present that reduce health risks in the future (Chandran and Menon, 2004; Pounders *et al.*, 2015). Here, we find

that encouraging consumers to think concretely about their future in the present (i.e., a concrete mindset) enhances future-oriented outcomes.

Prior research on CLT suggests that people tend to overvalue present versus future outcomes (Lynch Jr. and Zauberman, **2006**) because they often fail to consider opportunity costs and are overly focused on how their actions will immediately affect them (Kahneman and Frederick, **2002**). Our research suggests that encouraging consumers to think about their future more concretely causes them to think about those opportunity costs and how the alternatives they are faced with now may impact them in the future, enhancing future-oriented outcomes. Past research has also suggested that the default setting for future thought is in an abstract mindset (Trope *et al.*, **2007**; Liberman *et al.*, **2007a**). Interestingly, our findings of study 1 show that the abstract thought condition did not differ from the control condition where no thought was given to the future. Priming consumers to think about their future in abstract ways is no more beneficial than not having them think about their future at all. These results show that consumers have to be guided to think about their future concretely in order to realize better future-oriented outcomes. Those with an abstract mindset or no future mindset are less likely to consider opportunity costs, minimizing future-oriented outcomes. Only concrete thinking improves the consideration of opportunity costs which increases future-oriented outcomes. However, many interactions with consumers opt to use abstract communications rather than priming a concrete mindset.

Much of marketing is focused on how to make a more satisfying customer experience (Achrol and Kotler, **2012**) but consumer welfare is often overlooked in this research. Our research shows that by guiding customers to think about their future concretely and consider opportunity costs, consumers will see better future results and their welfare can be improved. Policy makers and managers in relevant industries, such as financial or health, can prime customers to think concretely by framing their messages with “how” statements as opposed to “why” (Trope and Liberman, **2000**; Freitas *et al.*, **2004**; Hamilton and Thompson, **2007**; Liberman *et al.*, **2007b**). Previous research has found that “desirability” versus “feasibility” are terms that can be used to evoke concrete versus abstract mindsets (e.g., Han *et al.*, **2019**), as high-level construal makes desirability concerns more salient and highlight losses in utility. Similarly, low-level construal intensifies feasibility and monetary loss concerns, causing consumers to be more concerned about money in the near future and utility in the distant future (Lu and Jen, **2016**). However, our results show that monetary concerns for the distant future can be increased by using low-level construal thought prompts such as “how” one would accomplish an outcome (i.e., feasibility) rather than “why” one would do something (i.e., desirability). For example, a weight loss commercial would want to focus on the actual steps a person would take to lose weight to prime concrete thinking. This concrete mindset would lead to more considerations of opportunity costs, such as not being able to have dessert or not watching TV for as many hours because you need to work out. This approach will be more effective as it gives a more realistic idea of what is necessary to accomplish the future goals. A commercial that depicts reasons why a person would want to lose weight, like being able to play with children or grandchildren, would foster a more abstract mindset and be less effective. This abstract mindset will not lead consumers to consider as greatly what they would have to give up (such as desserts or TV time) and future accomplishment will be diminished as consumers do not have realistic expectations of the actions they will need to take.

Our research offers a valuable addition to enhancing overall well-being and sheds greater light on how consumers make decisions. Consumers often find themselves disappointed by their level of achievement with regards to various areas of their lives because they did not focus on specific future outcomes when making decisions. Priming people to think about their future more concretely can positively impact their future-oriented outcomes. For instance, priming consumers with a concrete mindset could be used to help them save more for their retirement. This future concrete mindset could be accomplished by having consumers describe their financial objectives alongside future places, objects, and people and list how they plan to accomplish these achievements. Public policy makers could use these findings to help consumers make healthier lifestyle choices,

fighting public health epidemics like obesity and smoking. By priming consumers to think about their future more concretely, policy makers may be able to promote the importance of a healthier future self. Businesses and service providers could even use these findings to help and encourage their customers to enhance their future-oriented outcomes by using concrete mindset priming. In addition to these practical findings and implications, these studies help us to better understand why thinking about the future is important and how future-oriented outcomes can be enhanced through a concrete mindset.

### 3.2 Limitations and future research

The research presented here is not without limitations. For example, only online participants were used for data collection. While student samples have been criticized as not being representative of the general population (Chandler *et al.*, 2014), using a combination of sampling frames has been reported as an effective method for increasing generalizability (Goodman and Paolacci, 2017). Additional samples should be taken to replicate the results reported here. Additionally, other external factors could impact the results, such as the economic climate. Future research could examine the impact of a concrete mindset on future-oriented outcomes in different economic circumstances (such as a recession or low unemployment).

Future research should use more longitudinal data to examine the impact of concrete thinking. Research could also examine the use of past experiences on future-oriented outcomes to see if recalling past successes or failures impacts future-oriented outcomes more. The studies here used time frames of 3 and 5 years; it may also be interesting to see if there is a point that is too near or too distant in the future for concrete thinking to positively impact any outcomes or how concrete thinking impacts decisions related to time. MacDonnell and White (2015) note that in the context of charitable giving, time is construed more abstractly, but money is construed more concretely. It may be that considering one's future more concretely can positively impact how time is used in the present to achieve better outcomes for the future (i.e., spending more time studying now to achieve a better grade later). Overall, our findings suggest that better future outcomes are more likely to be achieved when the future is thought about concretely.

## APPENDIX A

### A.1 Measures and manipulation checks

Manipulation check (pretest, studies 1–2; adapted from Ein-Gar, 2015).

(1 = *Not at all*; 7 = *Very much*)

1. Concrete.
2. Tangible.
3. Detailed.

Goal importance (pretest; Houston and Walker, 1996).

When I think about the goals I set for my life in 5 years, these goals are:

1. Unimportant/Important.
2. Irrelevant/Relevant.
3. Worthless/Valuable.
4. Not beneficial/Beneficial.
5. Nonessential/Essential.
6. Insignificant/Significant.
7. Nothing to me/Meaningful to me.

Temporal proximity (pretest; Pounders *et al.*, 2015).

When I think about the goals I set for my life in 5 years, the future seems:

1. Close/Distant.
2. Near/Far.
3. Immediate/Far away.

Connectedness to the future self (pretest; Hershfield *et al.*, 2009). Think about your degree of connectedness held between the person you are now and the person you will be in 5 years. Answer the questions below accordingly. (Participants used the image below to answer the first two questions).

1. How similar do you feel to your future self?
2. How connected do you feel to your future self?
3. How much do you care about your future self? (1 = *Don't care at all*; 7 = *Completely care*)
4. How much do you like your future self? (1 = *Dislike extremely*; 7 = *Like extremely*)

Temporal discounting task (studies 1–2; Bartels and Urminsky, 2011)

1. I would be indifferent between \$\_\_\_ today and \$100 in 3/5 years.
2. I would be indifferent between \$\_\_\_ today and \$250 in 3/5 years.
3. I would be indifferent between \$\_\_\_ today and \$500 in 3/5 years.
4. I would be indifferent between \$\_\_\_ today and \$1,000 in 3/5 years.

Note: 5 years was used in study 1, 3 years was used in study 2.

Opportunity cost consideration (study 2; Spiller, 2011).

(1 = *Strongly disagree*; 7 = *Strongly agree*)

1. I will think about the fact that spending money on one purchase now means not spending money on some other purchase later.
2. When faced with an opportunity to make a purchase, I will try to imagine things in other categories I might spend that money on.
3. I will consider other specific items that I will not be able to buy if I make a particular purchase.

Personal responsibility (study 2; Paulhus, 1983).

(1 = *Strongly disagree*; 7 = *Strongly agree*)

1. When I get what I want it will be because I worked hard for it.
2. When I make plans I will make certain to make them work.
3. I will prefer games involving some luck over games requiring pure skill.

## A.2 Study 1 manipulations

### A.2.1 Concrete condition

We would like for you to take a moment and consider your life 5 years from today. Describe below, in as much detail as possible, what your life will be like in 5 years. Include one thought per line, making sure to include at least four total thoughts, but up to six. Make sure to include what goals you will have. Include places, objects and people involved, the sounds, smells, and sights of your life. What do you see around you in 5 years? Also,

when answering the remaining questions of this survey, keep in mind the life you are describing now and answer according to how you imagine it.

Follow-up 1: Below you will see your responses to the previous question. Beside each of your responses include how you plan on accomplishing or doing the respective thought.

Follow-up 2: One final time we would like for you to indicate how you plan on accomplishing or doing the reasons you just listed.

#### A.2.2 Sample response

Original response: *I hope we are debt free and enjoying our income and saving.*

First follow-up 1: *We will work toward paying bills with any extra money we have.*

Second follow-up 2: *We will make extra money doing side jobs and such and budget.*

#### A.2.3 Abstract condition

We would like for you to take a moment and consider your life 5 years from today. Describe below, in as much detail as possible, what your life will be like in 5 years. Include one thought per line, making sure to include at least four total thoughts, but up to six. Make sure to include the significance of your life, its importance and meaning, implications for your life, and broad consequences. What does your life in 5 years say about you? Also, when answering the remaining questions of this survey, keep in mind the life you are describing now and answer according to how you imagine it.

Follow-up 1: Below you will see your responses to the previous question. Beside each of your responses include why you want to accomplish or do the respective thought.

Follow-up 2: One final time we would like for you to indicate why you want to accomplish or do the reasons you just listed.

#### A.2.4 Sample response

Original response: *Obtain peace with myself and my surroundings.*

Follow-up 1: *I think if each person finds peace within themselves, it will in turn create a more peaceful world.*

Follow-up 2: *The world needs more peace now.*

#### A.2.5 Control condition

Please unscramble the letters given and write the word answer on the line that follows. You are not being timed:

EERNG, SALGS, ERALC, EUOSM, BUMTH

### A.3 Study 2 manipulations

#### A.3.1 Concrete condition

We would like for you to take a moment and consider your life 3 years from today. Describe below, in as much detail as possible, how your life will be like in 3 years. Make sure to include things like what you will be doing for work or school, where you will live, who your friends will be, your relationship status, your income, and anything else that you can imagine in detail.

#### A.3.2 Control condition

The following task is designed to assess your familiarity with potential majors within the business school. Please try to identify each of the following subjects by unscrambling the letters given and writing the answer on the line that follows.

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