



Escaping the impulse to immediate gratification: The prospect concept promotes a future-oriented mindset, prompting an inclination towards delayed gratification

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People's willingness to postpone receiving an immediate reward in order to gain additional benefits in the future, that is, a tendency to shallow delay discounting, is closely related to one's health, wealth, and happiness. We conducted two experiments investigating how the prospect concept can induce a future-oriented mindset and induce people to behave accordingly. We found that engaging in prospective imagery led the participants to focus on delayed utility over immediate utility in financial decisions (Experiment 1). Participants who received the prospect prime via a scrambled-sentence task decreased their desire to pursue hedonic activities for instant gratification (Experiment 2). Moreover, a state of future orientation mediated the effect of the prospect prime on measures of delayed gratification (Experiments 1 and 2). Thus, reminders of prospect may activate a mindset for future orientation by which delayed gratification is strengthened.

In cognitive psychology and behavioural economics, delay discounting (Kirby & Maraković, 1996), also known as time discounting (Frederick, Loewenstein, & O'Donoghue, 2002) or temporal discounting (Read, Frederick, Orsel, & Rahman, 2005), pertains to the willingness to postpone receiving an immediate reward in order to gain additional benefits in the future. In principle, individuals who demonstrate a 'steep' discounting rate prefer a smaller, more immediate reward to a larger but delayed reward, whereas those who demonstrate a 'shallow' discounting rate place more emphasis on receiving greater benefits in the distant future (Kirby & Maraković, 1996). It has been widely demonstrated that delay discounting can affect one's health, wealth, and happiness (e.g., Cherukupalli, 2010; Daugherty & Brase, 2010; Dittmar & Bond, 2010; Frederick *et al.*, 2002). Given the widespread emphasis in modern life on saving time and on the idea of *carpe diem*, identifying ways to promote a greater focus on the future is crucial to the development of healthier and happier lifestyles for the 21st century. A life-span comparison of three age groups (i.e., children, young adults,

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and older adults) with regard to discounting of delayed rewards (Green, Fry, & Myerson, 1994) demonstrated that all three age groups showed delay discounting and that the rate of discounting was highest for children and lowest for older adults, predicting a life-span developmental trend towards increased self-control. However, we conducted two experiments to demonstrate that individuals may not need to reach a certain age to place more emphasis on delayed gratification; instead, a simple shift in focus on the prospect in life may be sufficient.

The prospect prime and a mindset for future orientation

The term prospect points to a future outlook, and includes feelings such as anticipation, expectation, and looking forward. In the present research, the term prospect is used, in part, to suggest a simple outlook to the future rather than a focus on the process required to reach future outcomes (Pham & Taylor, 1999), expectancy judgments that assess probability of occurrence (Oettingen & Wadden, 1991; Reed, Kemeny, Taylor, & Visscher, 1999), or future fantasies that contain future events *per se* as they appear in the stream of thought (Oettingen & Mayer, 2002). Construal-level theory (CLT; Trope & Liberman, 2003) suggests that psychologically distant events are represented by high-level construals and that construals have systematic effects on judgments and decisions. Moreover, individuals' decisions are increasingly based on superordinate features (ends) more than subordinate features (means to the ends) as future events become more temporally distant (Liberman & Trope, 1998; Sagristano, Trope, & Liberman, 2002). In line with CLT, if temporally distant events activate high-level construals, participants should prefer high-level rather than low-level action identifications for such events, as high-level action identifications represent more abstract, superordinate descriptions of the behaviours (Trope & Liberman, 2000). Hence, a shift in focus to the future should promote greater preferences for a larger but delayed utility (a high-level construal) over a more immediate but smaller gratification (a low-level construal).

How individuals orient themselves in relation to the future is an important aspect of human motivation because goals, plans, and hopes are located in the future (Nuttin & Lens, 1985). Future orientation has been conceptualized in several ways. Common to all approaches has been the view that the motivational properties of a future orientation draw on the notion of a prospective outlook (Nurmi, 1991; Nuttin & Lens, 1985; Seginer, 2000). These motivational forces incite the cognitive representation of the prospective self and future-related behavioural tendencies (Seginer & Lilach, 2004). Hence, we believe that a future orientation should be activated by the prospect concept. Additionally, a future orientation that is commonly measured by a future time perspective (FTP) (Zimbardo & Boyd, 1999a) refers to an individual-differences trait. In this research, we do not use future orientation (time perspective) to suggest a stable trait (Zimbardo & Boyd, 1999a, 1999b) but, rather, to signify a transitory psychological state induced by reminders of prospect.

In consideration of recent advances reported in the literature on behavioural priming, we contend that the prospect prime can evoke a future orientation and, thereby, increase the tendency to focus on long-term benefits. Previous studies have found that goals activated by virtue of their association with primes can induce corresponding behaviours. For example, recent research has shown that mere exposure to fast-food symbols reduced people's willingness to save and led them to prefer immediate gain over greater future return, ultimately compromising their economic interests (Zhong & DeVoe, 2010). Given that the notion of prospect embodies a future outlook, we suggest that priming with

the prospect concept may induce people to be future oriented, as reflected in a less tendency towards delay discounting (i.e., preference for immediate over delayed utility; see Frederick *et al.*, 2002) and hedonism (i.e., tendency to seek pleasure in the present; see Zimbardo & Boyd, 1999a). We employed a diverse set of time-oriented measures to highlight how the prospective mindset may help people withstand the allure of instant gratification.

Relations of future orientation to delay discounting and hedonism

To function effectively, individuals must voluntarily postpone immediate gratification and persist in goal-directed behaviour for the sake of later outcomes (Mischel, Shoda, & Monica, 1989). Choosing a smaller, more immediate reward over a larger, but delayed reward has been described as 'impulsive', and as due to a lack of 'self-control', and as an example of an inability to 'delay gratification' (e.g., Green, 1982; Logue, 1988). This change in the value of a reward as a function of its temporal proximity is termed delay discounting (Frederick *et al.*, 2002; Kirby & Maraković, 1996; Read *et al.*, 2005). Thus, a smaller, but immediate reward (e.g., \$200 now) may be chosen because its value is greater than a larger reward for which one must wait a prolonged period of time (e.g., \$400 in 5 years). A delayed reward is devalued because its receipt is less certain than that of an immediate reward (e.g., Ben Zion, Rapoport, & Yagil, 1989; Stevenson, 1986). Recent studies found a link between a present time perspective and immediate gratification (Daugherty & Brase, 2010; Zimbardo & Boyd, 1999a), and identified an FTP as a contributor to delayed gratification (Romer, Duckworth, Szmitman, & Park, 2010). Since future orientation was found to correlate with shallower discounting rates, that is, a stronger preference for larger, delayed rewards (Daugherty & Brase, 2010; Jones, Landes, Yi, & Bickel, 2009), we suggest that future orientation induced by the prospect prime may cause a decrease in delay discounting.

Higher levels of hedonism suggest stronger tendencies to seek out pleasure in the present (Daugherty & Brase, 2010). Das (1987) found that planners with a present time perspective tended to make plans with shorter planning horizons. In a compilation of multiple studies, Zimbardo, Keough, and Boyd (1997) found that individuals holding a present time perspective focus on present pleasure and tend to take more risks and act impulsively. To examine time perspective as a predictor of substance use, Zimbardo and Boyd (1999b) found that scores for an FTP correlated negatively with reported substance use. Daugherty and Brase (2010) demonstrated that time perspective was a significant predictor of hedonic behaviours (e.g., smoking, drug use, drinking). These findings suggest that an inverse relationship between future orientation and hedonism should exist. If the prospect concept can prime individuals with a future orientation state, we predicted that the desirability of hedonic activities should be lowered by the prospect prime.

Overview of the current study

In this article, we report evidence of a link between the prospect prime and an inclination towards delayed gratification. Experiment 1 examined whether the prospect prime would induce a tendency towards shallow delay discounting in financial decisions, as reflected in willingness to postpone immediate gains for greater future returns. In Experiment 2, we examined the association between the prospect prime and the desirability of hedonic activities. Additionally, we examined the psychological mechanism behind

the priming effect of the prospect concept by including measures of our proposed mediator, future orientation, in the two studies. Together, these experiments suggest that reminders of prospect may prime a future-minded state, which alters perspectives on time in favour of a future orientation and, thereby, enhances willingness to delayed gratification.

EXPERIMENT 1

In the first study, we sought to examine whether priming with the prospect concept would influence financial decisions about saving, one of the most studied issues in the domain of delay discounting (Frederick *et al.*, 2002). Saving involves foregoing the immediate gratification derived from spending to achieve greater future gain. The future-oriented notion of saving coincides with the ethos that prospect embodies: focusing on future gains and de-emphasizing immediate gratification. Thus, we predicted that participants with the prospect prime would be more likely to show shallow delay discounting than would individuals without such prime. Furthermore, we also examined the mediator role of future orientation and tested whether the prospect concept would prime individuals with a future-minded state, which would, in turn, drive a decreased tendency towards delay discounting.

In addition, we employed prospective imagery to manipulate the prospect concept in this experiment. From the perspective of episodic memory (Tulving, 1983), setting humans apart from other species is the ability to travel subjectively through time (Suddendorf & Corballis, 2007). Mental time travel enables people to tailor their behaviour to satisfy the challenges of daily life (Schacter, Addis, & Buckner, 2007; Tulving, 2002). The ability to encode an intention and then successfully remember to execute it is known as *prospective memory* (Brandimonte, Einstein, & McDaniel, 1996) and includes memory for actions to be performed in the future such as remembering to give a message to a friend or remembering to take medication. This kind of orientation arguably supports the planning and forward-looking activities that are a hallmark of human existence (e.g., Johnson & Sherman, 1990). Tulving (2004) recently suggested that the *autonoetic awareness* (self-knowing consciousness) of prospective memory also allows people to mentally place themselves forward in time (*proscopic chronesthesia* in Tulving's, 2004, terms). Moreover, the metaphorical 'arrow of time' (Casasanto & Boroditsky, 2008) may be grounded in a processing architecture that integrates temporal and spatial information in a directional manner (i.e., past = back, future = forward). Hence, prospective imagery should be able to prime individuals with a future-oriented mindset.

Method

Sixty-four undergraduates (mean age = 21.1 years; 30 women and 34 men¹) at a public university in southern Taiwan participated in this experiment in return for receiving course credits. Participants were randomly assigned to receive either a prospect-prime (i.e., prospective imagery) or neutral-prime (i.e., the present life) manipulation. This

¹The gender of participants did not moderate the prime effects found in this research. In Experiment 1, gender did not interact with the prime effect, $F(1, 60) = 1.54, p = .22$. In Experiment 2, an interaction between gender and the prime was not observed, $F(1, 68) = 0.94, p = .34$.

study was disguised as a study about self-reflection. Participants were instructed to follow guided imagery instructions either: (1) to imagine what their everyday life circumstances might be like 4 years in the future and to envisage the events of a typical day at that time or (2) to recall the events of a typical day in their present life circumstances. Previous research (e.g., Addis, Wong, & Schacter, 2007) indicates that participants spontaneously generate past and future events approximately ± 3.6 years from the present. Guided imagery, as developed and refined by Roberto Assagioli, uses the power of thought to influence psychological and physiological states (Fors, Sextonb, & Göttestama, 2002).

In this experiment, we added a measure of future orientation by using a self-report questionnaire (which also included some bogus questions). Specifically, we assessed a state of future orientation using the 13-item FTP scale of the Zimbardo time perspective inventory (Zimbardo, 1992; Zimbardo & Boyd, 1999a), in which refinements over a decade have yielded a reliable, valid, economical measure of time perspective. Example questions of the FTP include: 'I believe that a person's day should be planned ahead each morning', and, 'I am able to resist temptations when I know there is work to be done'. Participants were assessed on a 5-point Likert scale according to 'how characteristic' each statement is of the respondent. Higher scores on the FTP scale suggest greater focus on the future. Participants' responses to these items showed high consistency ($\alpha = .83$) and their scores across the items were averaged.

After participants completed the questionnaire, we asked participants to help us with a pilot test of future studies. We measured their delay discounting tendencies using a standard task in which participants are asked to make a series of binary choices about the time at which money is received (Benjamin, Choi, & Strickland, 2010). Participants were asked to make 42 binary choices between a certain amount of money received earlier (e.g., \$3 or \$7) and a larger amount received 1 week later (e.g., either between \$3.05 and \$7, or between \$7.10 and \$15). The dependent variable was the minimum continuously compounded weekly interest rate at which subjects chose the later over the earlier payment. For example, if a participant chose the later payment over the earlier \$3 payment if and only if the later payment was at least \$4.00, then the reservation interest rate (r) was calculated as $\log(4.00/3.00)$ and was equal to 0.125 (12.5%). The higher the interest rate was, the greater the value the participant assigned to having an immediate gain. Participants' responses across different amounts of money were consistent ($\alpha = .81$). The mean interest rate was used for subsequent analyses. At the end of this experiment, participants were fully debriefed.

Results and Discussion

As expected, participants primed with the prospect concept required a much lower minimum compounded weekly interest rate ($M = 11\%$, $SD = 6.0\%$) to delay payment than did those in the control condition ($M = 15\%$, $SD = 6.6\%$), $F(1, 60) = 8.15$, $p = .006$, $\eta_p^2 = .12$ (see Table 1). In other words, participants primed with prospective imagery were much more likely than control participants to wait for a larger payment in a week than to accept a smaller payment now.

As to mediation analysis, participants in the prospect-prime condition ($M = 2.92$, $SD = 0.83$) scored higher in the FTP than did controls ($M = 2.06$, $SD = 0.82$), $F(1, 62) = 17.29$, $p < .001$, $\eta_p^2 = .218$. This finding indicates that engaging in prospective imagery may induce a future-oriented mindset and also lends support to our prospect-prime manipulation. To examine whether a state of future orientation mediated the priming effect of prospect on the interest rate (i.e., the present index of delay discounting), we

Table 1. Participants' mean estimates and confidence intervals for each condition in the experiments

Experiment	Prospect-prime condition	Control condition	Dependent variable
Experiment 1	11 ± 2.1	15 ± 2.3	Reservation interest rate (%)
Experiment 2	5.10 ± 0.31	4.36 ± 0.39	Desirability of exercise activities (1–7)
Experiment 2	2.10 ± 0.35	3.11 ± 0.41	Desirability of hedonic activities (1–7)

Note. Confidence intervals were set at 95%. Units of the dependent measure are presented in parentheses. In Experiment 1, the weekly reservation interest rate was the log value of the minimum later payment required for the subject to prefer the later over the earlier payment.

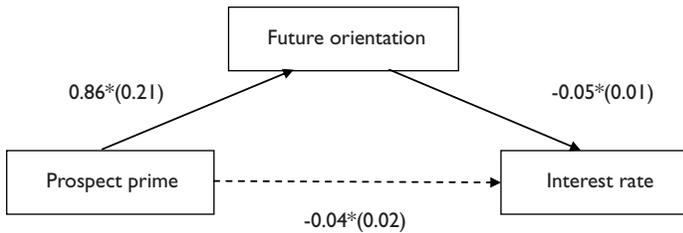


Figure 1. Mediation analysis in Experiment 1. High levels of reservation interest rate denote the greater value the participant assigned to having an immediate gain. Numbers outside parentheses are unstandardized regression coefficients; numbers inside parentheses are standard error of regression coefficients. An asterisk indicates a *p* value of less than .001.

followed the procedures recommended by Baron and Kenny (1986). We used interest rate as the dependent variable and used a dummy variable for our manipulation (1 = the prospective imagery condition). As expected, the effect of our prospect prime on the interest rate was reduced to insignificance (from $\beta = -0.33, p = .008$, to $\beta = 0.04, p = .37$) when an FTP ($M = 2.49, SD = 0.93$) was included in the equation, and the FTP was a significant predictor of interest rate ($\beta = -0.76, p < .001$). Including an FTP increased the variance significantly (by 47%, from $R^2 = .11$ to $R^2 = .58$), $F(1, 61) = 68.25, p < .001$; the Sobel test was significant, $Z = -3.17, p < .001$, indicating that the FTP fully mediated the effect of prospective imagery on the participant interest rate (see Figure 1).

In sum, results of this experiment showed that prospective imagery primed participants with a tendency towards shallow delay discounting in financial decisions, showing a willingness to postpone immediate gains for greater future returns. Mediation analysis demonstrated that engaging in prospective imagery induced people to assume a future-oriented mindset and this orientation to an FTP evoked an inclination towards delayed gratification. These findings suggest that mental time travel involving a prospective mindset can increase future orientation with respect to economic interests.

EXPERIMENT 2

Experiment 1 showed that the prospect prime can be associated with an unexpected subsequent inclination towards delayed gratification, as reflected in increased willingness to shallow delay discounting, leading to preferences for greater future benefits over fewer

immediate gains. Experiment 2 examined whether this effect would extend to hedonic activities. We tested whether a future-oriented mindset primed via the prospect concept could counteract tendencies to seek immediate gratification.

Method

To test the prediction that exposure to the prospect concept would be correlated with postponing immediate gratification to gain benefits in the future, we recruited subjects from the larger community through flyers at 11 district offices in Kaohsiung, the largest city in southern Taiwan. Seventy-two participants ranging in age from 18 to 47 years (mean age = 31.4 years, $SD = 6.2$; 38 women and 34 men) were assigned to the prospect prime or the no-prime condition using a block randomization method to balance the proportion of males and females.

We employed a different method, that is, the scrambled-sentence paradigm developed by Srull and Wyer (1979), to the prime prospect concept. Using this technique to prime particular concepts has been widely adopted in behavioural priming (e.g., Shariff & Norenzayan, 2007; Vohs, Mead, & Goode, 2006). Subjects in the prospect-prime condition were asked to unscramble 10 sentences, dropping an extraneous word from each to create a grammatical sentence. For example, 'is she for an opportunity on the outlook check' would become 'she is on the outlook for an opportunity', and 'vision great a man of wait is he' would become 'he is a man of great vision'. Five of the scrambled sentences contained target words that deliberately evoked a specific concept: oncoming, prospect, vision, foresight, and outlook. Subjects in the neutral-prime condition completed the same scrambled-sentence task, but the scrambled sentences did not contain any target words. After the prime manipulation, participants' mood was measured using the Positive and Negative Affect Schedule (Watson, Clark, & Tellegen, 1988; $\alpha = .83$ for positive mood items and $\alpha = .85$ for negative mood items).

Later, participants completed an ostensibly unrelated survey about leisure activities, including nine hedonic activities selected from the literature (e.g., Colles, Dixon, & O'Brien, 2008; van den Bos, Houx, & Spruijt, 2007) that involve instant gratification but pose a health hazard or the promise of wealth in the long run (e.g., all-you-can-eat buffets, casual sexual encounters, gambling, sunbathing, wild parties, excessive drinking, buying coveted products, etc.). Another nine leisure-time exercise activities (e.g., yoga, walking, fishing, popular and folk dancing, easy swimming, easy bicycling, jogging, running, playing basketball) chosen from the Godin Leisure-Time Exercise Questionnaire (Godin, Jobin, & Bouillon, 1986) were interspersed as filler items. Participants were asked to rate the desirability of each item on a scale from 1 (*not at all desirable*) to 7 (*very desirable*). The measure of a future-oriented mindset (i.e., the FTP scale, Zimbardo & Boyd, 1999a) was embedded in this survey. Before the debriefing, participants completed two items measuring how difficult it was to perform the scrambled-sentence task and how much effort they put into this task. Responses to the two items were recorded on 9-point Likert-type scales from 1 (*not at all*) to 9 (*very high level*). Jiga-Boy, Clark, and Semin (2010) noted that effort may shape perceived temporal distance merely because it elicits cognitive thought or preoccupation. These items were included to rule out the possibility that events requiring more effort are perceived as more temporally distant. During subsequent questioning, no participant expressed awareness that the prime manipulation and the leisure survey were related.

Results and Discussion

Participants in the two study conditions did not differ significantly with regard to perceived difficulty (prospect prime: $M = 4.31$, $SD = 1.43$; control: $M = 4.22$, $SD = 1.62$), $t(70) = 0.23$, $p = .81$, nor with regard to effort involved (prospect prime: $M = 3.83$, $SD = 1.21$; control: $M = 3.69$, $SD = 1.56$), $t(70) = 0.42$, $p = .67$. Therefore, the effect of the prospect prime on future orientation does not appear to be explained by differences in perceived difficulty or effort involved in relation to the conditions. The desirability of hedonic activities was not associated with age, $r = -.15$, $p = .21$, nor participant gender (1 = men), $r_{pb} = .12$, $p = .31$. Participants in the prospect-prime condition ($M = 2.92$, $SD = 1.00$) expressed higher levels of FTP than did controls ($M = 2.18$, $SD = 0.86$), $F(1, 70) = 11.41$, $p = .001$, $\eta_p^2 = .14$, which replicated the hypothesis that the prospect prime may elicit a state of future orientation. Participants' responses to both the hedonic activities ($\alpha = .85$) and the ordinary recreational activities² ($\alpha = .83$) were highly consistent. The summed scores revealed a strongly inverse relationship between the two types of activities, $r = -.72$, $p < .001$.

As expected, participants primed with the prospect concept showed less desire for hedonic activities ($M = 2.10$, $SD = 1.08$) than did participants in the control condition ($M = 3.11$, $SD = 1.24$), $F(1, 68) = 14.10$, $p < .001$, $\eta_p^2 = .172$ (see Table 1). The mediation role of future orientation was replicated in Experiment 2. The prospect prime predicted participants' future orientation ($M = 2.55$, $SD = 0.99$), $\beta = 0.37$, $t = 3.38$, $p = .001$. FTP predicted the desirability of hedonic activities ($M = 2.56$, $SD = 1.24$), $\beta = -0.78$, $t = -10.45$, $p < .001$. The relationship between the prospect manipulation and the desirability of hedonic activities was reduced to insignificance (from $\beta = -0.41$, $p < .001$ to $\beta = -0.13$, $p = .11$) when controlling for future orientation; Sobel $Z = -3.18$, $p < .001$.

Additionally, the effects of the prospect prime were not mediated by mood. First, the prospect-prime manipulation influenced neither positive mood ($F < 1$) nor negative mood ($F < 1$). Second, neither positive mood ($F < 2$) nor negative mood ($F < 2$) affected the desirability of hedonic activities. Therefore, mood did not elicit the findings on the dependent measure.

In short, findings of this experiment showed that exposure to the prospect concept primed participants with less desire for hedonic activities and more desire for exercise activities. The results suggest that the prospect prime can induce a future-oriented mindset by emphasizing long-term consequences and thereby minimizing the allure of immediate gratification.

GENERAL DISCUSSION

In principle, future orientation is one motivational property of a prospective outlook (Nurmi, 1991; Seginer, 2000). The prospect concept may elicit a cognitive representation of the prospective self and thereby induce future-related behavioural tendencies (Seginer & Lilach, 2004). According to the active-self account of exemplar prime-to-behaviour effects (Wheeler, DeMarree, & Petty, 2007), primes can influence people's behaviour

²Participants in the prime condition showed more desire for exercise activities than did controls, $F(1, 70) = 8.30$, $p = .005$, $\eta_p^2 = .106$.

by creating changes in the active self-concept. We contend that the prospect prime may bring about a future-oriented mindset and, thereby, counter depreciating the value of future benefits (i.e., facilitating a stronger preference for future benefits over immediate gains). These tendencies towards delayed gratification are analogous to a future orientation in which long-term utility is emphasized. In this research, we demonstrate that a future-oriented mindset can easily be induced to promote delayed gratification, which is widely believed to benefit one's wealth and health (Cherukupalli, 2010; Daugherty & Brase, 2010; Dittmar & Bond, 2010). Using two different methods to implement a prospect prime, our two studies provided converging support for a connection across multiple forms of delayed gratification-related behaviours, showing that those participants who engaged with prospective imagery exhibited an increased focus on greater future gain, that is, a shallow delay discounting tendency (Study 1), and that participants primed with the prospect concept via a scrambled-sentence task showed less desire for participation in activities involving immediate gratification.

Our findings supplement the literature on behavioural priming by demonstrating a link between prospect-related primes and delayed gratification. This association was different from prior work about the effects of different types of mental simulations (e.g., outcome manipulation and process manipulation) on goal-directed behaviour (Pham & Taylor, 1999). These results offer a new direction for research on promoting delayed gratification. Prior research has mainly focused on moderators of delay discounting (e.g., valence of outcomes, Hardisty & Weber, 2009; Murphy, Vuchinich, & Simpson, 2011, affective vs. cognitive valence, Metcalfe & Mischel, 1999; valence of affect, Augustine & Larsen, 2011; high-level vs. low-level temporal construal, Trope & Liberman, 2000). Further, results of the mediation analysis supported the mechanism hypothesized for the effect of the prospect prime on delayed gratification: reminders of prospect may induce a temporary boost in the relevant active mindset (future orientation). CLT (Trope & Liberman, 2003) states that, as individuals become removed from the direct experience of an event, information about the event becomes less reliable, leading them to rely on schematic, prototypical information. Consequently, individuals tend to represent temporally distant events by their essential, abstract, and global features (high-level construals) and temporally near events by their peripheral, concrete, and local features (low-level construals). In accordance with CLT, the results suggest that a state of future orientation evoked by reminders of prospect may facilitate high-level construals (e.g., long-term utility, greater future gain) by which immediate gratification is devalued.

Taken together, the present findings have important implications for delay discounting and inter-temporal choice. CLT proposes that individuals use more abstract schemas, or higher level construals, when representing distant future situations than when representing near-future situations (Liberman & Trope, 1998). An observed link between the prospect prime (i.e., a high-level construal) and a future-oriented mindset suggests that priming with prospect-related high-level construals may promote a stronger FTP. Regarding goal-directed actions, CLT proposes that features related to primary goals are more central to the meaning of the actions than are features unrelated to these goals (Higgins & Trope, 1990). High-level construals are therefore likely to represent actions in terms of primary goal-related features (Liberman & Trope, 1998). At a more general level, an individual's attitudes, ideologies, moral principles, and self-identities are more likely to be expressed in distant future choices than in near-future choices (Trope & Liberman, 2000). Future research might explore whether primed high-level construals would induce a focus on the long-term utility of an action. A recent study, which tested temporal choices in charitable giving by varying the timing of commitment and payment,

echoes this claim: donations are significantly higher when people commit to a future gift (Breman, in press). The present research raises an interesting issue: the relationship of primed high-level construals to future orientation, and to time-dependent changes in preference.

Although our studies showed that the psychological state of future orientation can certainly induce increased delayed gratification (i.e., emphasizing the greater benefits to be reaped in the distant future, Frederick *et al.*, 2002), the activation of future orientation, primed by the prospect concept is not necessarily unidirectional. Indeed, previous research has suggested a link between perceptions and behaviour in general (Chartrand & Bargh, 1999). For example, activating the elderly stereotype induces people to walk slowly (Bargh, Chen, & Burrows, 1996), but walking slowly also activates the elderly stereotype (Mussweiler, 2006). Consistent with this notion, the ability to engage in instantly pleasurable activities in order to alter time perspectives remains unclear. Moreover, research in social cognition has begun to examine the role of individual differences in the propensity to modify behavioural outcomes in response to primes (Wheeler, Morrison, DeMarree, & Petty, 2008). For example, individuals characterized by the Type A behaviour pattern tend towards impatience and fast-paced daily lives (Friedman & Booth-Kewley, 1988). Hence, the Type A behaviour pattern may modulate the magnitude of priming effects.

Levine and his colleagues conducted cross-cultural studies and found that countries characterized by economic prosperity, high degrees of industrialization, dense populations, and an emphasis on individualism were also characterized by fast-paced lifestyles (Levine & Norenzayan, 1999). Inter-temporal choices, as Adam Smith first recognized, are ubiquitous and important in determining the economic prosperity of nations (Frederick *et al.*, 2002). The inability to delay gratification, which has been described in terms of impulsivity and lack of self-control (Mischel *et al.*, 1989), may involve present mindedness. Findings of the present research seem to suggest that people may benefit from envisioning the future more frequently. A shift of focus to prospect in life may be sufficient to induce a slower pace of life, enhance delayed gratification, and resist hedonism.

Acknowledgements

This work is partially supported by the National Science Council of the Republic of China (Project No. NSC 100-2628-S-110-005-MY3). We would also like to acknowledge the particular support received from "Aim for the Top University Plan" of the National Sun Yat-sen University and Ministry of Education, Taiwan, R.O.C.

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