Failing time after time: Time perspective, procrastination, and cognitive reappraisal in goal failure

Jill Taylor, Teesside University, Middlesbrough, Tees Valley

J. Clare Wilson, University of Portsmouth, Portsmouth, Hampshire

Correspondence concerning this article should be addressed to Jill Taylor, Department of Psychology, School of Social Sciences, Business and Law, Teesside University, Middlesbrough, Tees Valley, TS1 3BA.
Telephone: 01642 342341. E-mail: jill.taylor@tees.ac.uk

Abstract

This research novelly explores how Future Time Perspective (FTP) plays a role in reflecting on goal failure and striving for future goals. Participants (N=139) completed questionnaires assessing recent goal failure, procrastination, emotion regulation and FTP, then coded as either High or Low in FTP. Results support hypotheses that despite goal failure, those high in FTP procrastinated less, planned more and used more cognitive reappraisal strategies. Further, procrastination and cognitive reappraisal significantly predicted FTP scores. Thus, goal failure may be an essential part of learning how to achieve high self-regulation goals. However, it may discourage some from trying again, particularly those low in FTP. Findings suggest the FTP may offer a strategy to aid attainment of important high self-regulated, long-term goals.

It is possible to fail in many ways...while to succeed is possible only in one way.

Aristotle (384-322 BC) *Nicomachean Ethics*

Goals are defined as "internal representations of desired states, where states are broadly construed as outcomes, events, or processes" (Austin & Vancouver, 1996 p.338). In goal-setting, we develop plans to help motivate and guide our behaviour towards our goal, and setting specific plans increases our chances of achieving that goal (e .g. Locke 1968). If success is achieving a goal, then, as Aristotle suggests, there are many ways to fail. Whilst much research investigates goal-setting and goal-achievement (e.g. Austin & Vancouver, 1996; Locke & Latham, 2002; Pintritch, Conley, & Kempler, 2004), the current research explored the non-achievement of goals.

Goal failure is important to study as it impacts on wellbeing and is likely to influence our striving for future goals (Oettingen, 2014). While there may be many ways to fail to achieve our goals, the current research explored two. First, the future goal (to have the future I desire) is wanted, but the process of achieving it in the present (what I need to do now) is not wanted. For example, I want to be healthy, but I may not want to exercise, stop smoking or limit my diet in the present. In the current research, this type of failure is termed the Low Future Time Perspective (FTP). People demonstrating this type of FTP want a different future to the current present, but it is not strong enough to overcome the present preferences to achieve it.

The second type of failure is where the future goal is wanted, as is the process to achieve it in the present, but failure occurs as part of learning how best to achieve the goal. For example, those who give up smoking may enjoy being smoke free, yet may go back to smoking when stressful situations arise and they are unsure how to cope without a cigarette. This will be termed the High FTP as the new future is wanted strongly enough to tolerate (or

even enjoy) the process in the present, but the correct skills to obtain such a future are still developing. The current research explores these two types of future time perspective to examine how they may aid our understanding of goal failure.

Time Perspective can be defined as the "often non-conscious process whereby the continual flows of personal and social experiences are assigned to temporal categories, or time frames, that help give order, coherence, and meaning to those events" (Zimbardo & Boyd, 1999 p.1271). Daily actions and decisions are influenced by our past, present and, future (Stolarski, Bitner & Zimbardo, 2011) and the way we separate our experiences into these temporal zones becomes part of our personality (Zimbardo & Boyd, 1999).

Zimbardo and Boyd (1999) constructed the Zimbardo Time Perspective Inventory (ZTPI) to assess biases towards one or more time perspectives. As well as 'past' perspectives (past positive and past negative), there are two 'present' perspectives (fatalistic and hedonistic) and one 'future' perspective. Hedonists often prefer inconsistency in their lives, and live for the moment. They choose courses of action in life that are pleasurable, stimulating and exciting, whilst actively trying to avoid tedious or boring activities (Zimbardo & Boyd, 2008). Fatalists, on the other hand, believe that nothing that they do will make a difference. A Present Fatalistic TP involves a helpless and hopeless attitude towards the future (Zimbardo & Boyd, 1999). Previous research suggests that present-oriented people are more likely to engage in risky behaviours such as unsafe sex, drug and alcohol misuse, but hedonists tend to have more energy whereas fatalists tend to have less self-esteem and more avoidant style coping strategies (e.g. Epel, Bandura, & Zimbardo, 1999; Keough, Zimbardo, & Boyd, 1999). Those more focussed on the future TP actively strive for positive future goals and rewards (Boniwell & Zimbardo, 2004; Zimbardo & Boyd, 1999). They usually have higher academic achievement, reduced sensation seeking, and indulge in fewer health risk behaviours compared to those low on the future TP (e.g. Shell & Husman, 2001).

Most people have a profile on the ZTPI that includes a combination of high and low scores rather than a predominance of only one factor. Thus, depending on the habitual use, people may spend a great deal of time planning their futures, living in either a hedonistic or fatalistic present, or in a reminiscent or ruminative past. The current research focuses on the future time perspective as it integrates the present (what I need to do now) with the future (to obtain what I desire later), which is essential when seeking to achieve goals (and to recover from goal failure).

When a personal goal is chosen, how it will be achieved also needs to be decided (that is, the creation of a goal intention). Concrete goal implementation intentions are detailed plans that outline what to do when a certain situation arises, which often promote goal-striving, lower disengaging procrastination, and allow for further attempts at goal striving (see Gollwitzer & Sheeran, 2006, for review). Thus, those who are High in FTP are likely to set clear plans based on their intentions as they will want to do what it takes now to achieve a better future. However, those Low in FTP do not necessarily want to do anything right now so may avoid any detailed planning 'until later'.

Further, avoiding some behaviours and focusing on others requires self-regulation (that is, the discipline to focus on some preferred behaviours and not others, Bandura, 1986). The level of self-regulation required differs with each goal. Some goals, such as paying the bills on time, are undemanding of self-regulation, as they require simple behaviours that are executed once or twice in the near future. Some goals require substantial long-term self-regulation and include the on-going development of alternative or new behaviours, such as finding sustainable ways of exercising when trying to adhere to new diet to lose and maintain that weight loss. Such high self-regulation goals also offer many more opportunities to fail as they are often long term. Long-term, high self-regulation goals are often those that are more important to us. However, because their achievement is often in the distant future,

maintaining focus may be particularly difficult without a clear plan for what needs to be done in the present. Those High in FTP may be more likely to set smaller achievable goals, or sub-goals if their overall goal is large. This is so that they have something that must be achieved in the near future and therefore something that must be done in the present. Those Low in FTP may prefer large long-term goals as that gives them more time (that is, they may think they do not need to act right now as it would appear to make no difference over the long term whether they act now or start tomorrow), which often results in procrastination.

Procrastination involves delaying acting on our intentions (Lay & Silverman, 1996). It often results from inefficient self-regulation (e.g. Baumeister, 1997; Ellis & Kraus, 1997; Ferrari, 2001; Ferrari & Diaz-Morales, 2007; Gupta, Hershey, & Gaur, 2012; Harriot & Ferrari, 1996; Jackson, Fritch, Nagasaka, & Pope, 2003; Lay, 1990; Sirois & Pychyl, 2013; Specter & Ferrari, 2000). Whilst prior research has explored procrastination as a stable personality trait (e.g. Ferrari, 1992; Sadler & Buley, 1999), others view procrastination as a result of more context-specific influences (e.g. Lay, 1995; Milgram, Dangour, & Raviv, 1992). Within Construal Level Theory (CLT; Liberman & Trope, 1998, Liberman, Trope, & Stephan, 2007; Trope & Liberman, 2003) forming a concrete representation of the task reduces procrastination (McCrea, Liberman, Trope, & Sherman (2008). Those with a High FTP may be more proactive in their planning of concrete representations of their goal.

The current research explores procrastination from the future time perspective. Sirois (2014) provides a meta-analytic review exploring procrastination and perceptions of time. Results to date are sparse and mixed. Some results support the notion that procrastination involves a negative view of the future (e.g. 'I will probably fail anyway so why bother now') which is the avoidance of action being taken in the present and is consistent with those Low in FTP. Procrastination can be associated with negative evaluations of the past, a negative view of the present (e.g. 'I cannot do this right now, the time is not right'), and a positive

view of the future (e.g. 'there will be more time tomorrow and I will feel more like doing it then'), again, this positive view of the future is consistent with those Low in FTP. Thus, it is not a question of whether the attitude to the future is positive or negative per se but rather whether the future inspires action in the present or not.

Goal failure may either undermine or motivate future goal striving, but what is less known is why people have such different reactions to failure (Diener & Dweck, 1978; Dweck, 2000).   Attribution theory (Heider, 1958) suggests that we blame ourselves or external factors for the failure (see Fiske, & Taylor, 1991). Further, failure (i.e. the thwarted desired goal) is likely to be upsetting. The higher the emotional salience of the failure, the more aversive future striving may become (as there is a risk of further pain with further failure). Those Low in FTP are likely to be particularly upset as they were hoping to avoid having to do more now to achieve the future goal. However, those High in FTP are unlikely to be as upset as they may want to learn from their mistakes and move on to try and succeed (as they are focussed on the future where they have achieved their goal).

One method of 'learning from our mistakes' is cognitive reappraisal. This regulation strategy involves a cognitive change, that is, a change in the meaning of the event so that the related emotion also changes (Aldao, Nolen-Hoeksema, & Schweizer, 2010; Gross, Richards, & John, 2006; Troy, Shallcross, & Mauss, 2013; Webb, Miles, & Sheeran, 2012). For example, I might try the cold turkey method to quit smoking. When that fails, rather than being upset and continue to smoke, I may try nicotine patches instead. Thus, cognitive reappraisal may allow the past failures to be seen as productive learning experiences, which may motivate more attempts, envisaging a better chance of success based on what was learnt from the previous experience.

In summary, it was hypothesised that those Low in FTP would be significantly more likely to set high self-regulation goals (perceiving more time in the future to achieve them);

significantly less likely to formulate a plan to achieve their goals, so they will procrastinate more and be more upset at their goal failure and as a result, will be significantly less likely to use cognitive reappraisal than those High in FTP.

Method

Participants

Online posters were displayed on social networking sites inviting members of the public to take part. One hundred and thirty nine participants were recruited to the online survey.   Ninety-eight females and 41 males between the ages of 16 and 63 (M=20.07, SD=10.35) took part.

Materials

In addition to basic demographic questions (gender and age), a series of questions regarding goal failure were developed for participants to complete.

Goal Failure

First, participants identified a goal that they had recently tried to achieve but have not yet been able to. Next, they were asked how (or if) they had planned to achieve it. Participants were then asked whether they had expected to achieve it. Next, participants were asked how they felt when they did not achieve it using a 4-point likert scale (1=*not upset at all*, 4=*extremely upset*). For the final question in this section, participants were asked whether they would attempt their goal again.

Emotion Regulation

The cognitive reappraisal subset (α=.79) within the Emotion Regulation Questionnaire (Gross & John, 2003) comprises 6 items. Examples include 'When I want to feel more positive emotion (such as joy or amusement), I change what I'm thinking about'

and 'When I want to feel less negative emotion (such as sadness or anger), I change what I'm thinking about'.   Participants use a 7-point likert scale to rate how much they *disagree* (1) or *agree* (7) with each statement.

Procrastination

Lay's (1986) Procrastination Scale for use with non-student population (α=.88) comprises 20 statements. Example statements include 'I often find myself performing tasks that I had intended to do days before' and 'In preparing for some deadline, I often waste time by doing other things'. For each statement, participants respond using a 5-point likert scale (1 = '*extremely uncharacteristic*' to 5 = '*extremely characteristic*'). Following reverse scoring of some items, a higher score indicates more procrastination.

Time Perspective

The future subscale from the Zimbardo Time Perspective Inventory (ZTPI; Zimbardo & Boyd, 1999) was included in the survey (α=.77). It comprises 13 items, which include 'I am able to resist temptations when I know that there is work to be done' and 'I complete projects on time by making steady progress'. Each item is rated on a five-point scale (1= '*very untrue about me*' to 1 ='*very true about me*').   Following reverse scoring of some items, a higher score indicates a higher preference for this TP.

Procedure

Participants followed a link displayed on the electronic poster and were provided with a unique participant number. Participants answered the series of questions regarding past goal failure. Next, participants completed the cognitive reappraisal items from the Emotion Regulation Questionnaire (Gross & John, 2003); Lay's (1986) Procrastination scale, and finally the Future sub-scale items from Zimbardo and Boyd's (1999) ZTPI. An online debrief immediately followed.

Data Coding

First, the majority of participant's goals fell into one of two groups: Low Self-Regulation or High Self-Regulation. Low Self-Regulation was defined as requiring only a short-term effort to achieve the goal and involved only simple behaviours (e.g. pay the bills, return a book to the library). High Self-Regulation was defined as requiring long-term effort and involved complex behaviours (e.g. quit smoking, lose weight). Eighty participants (57.6%) had failed a high self-regulation goal whereas 55 participants (39.6%) had failed a low self-regulation goal, with 4 participants (2.9%) identifying two or more goals requiring different self-regulation and subsequently removed from analysis.

Second, the method the participants described to achieve their goal was coded as no plan (goal intention only, e.g. not smoke) (37.4%; $n=52$), or having a plan (e.g. join a local support group and speak with GP about NRT options) (56.8%; $n=79$), with 8 participants (5.8%) not answering this question.

Third, when participants were asked whether they had expected to achieve their goal, they had either responded 'yes' (65.5%, $n=91$) 'no' (15.1%, $n=21$) or 'maybe' ($n=21$), with 6 participants (4.3%) not answering this question.

Fourth, all participants were upset at their goal failure, however, they were split into one of two categories, either Upset (a score of 2 or less on the upset scale) or Very Upset (a score of 3 or 4 on the upset scale).

Finally, based on their Future sub-scale score on the ZTPI, participants were coded as either Low in Future Time Perspective or High in Future Time Perspective. If participants scored less than 3 on the Future subscale they were assigned to the Low Future TP group (42.4%; $n=59$). Those that scored higher than 3 on the Future were assigned to the High Future TP group ($n=59$).

Results

First, a Chi square analysis was performed on the nature of the goals set (High or Low self-regulation required). There was no difference between those with a Low FTP setting High self-regulation goals (50.0%, n=38) or Low self-regulation goals (50.0%, n=38). Those with a High FTP set more Low self-regulation goals (64.7%, n=33) than High self-regulation goals (35.3%, n=18), but this was not significant χ^2 (1)= 2.677, p=.102

Second, a 2 (Type of Goal: High vs. Low self-regulation) x 2 (FTP: High vs. Low) ANOVA was performed on the procrastination scores. There was a main effect of self-regulation, with those who set Low self-regulation goals procrastinating significantly less (M=54.63, SD=10.63) than those with High self-regulation goals (M=60.77, SD=13.69) F(1,116) =5.52, p =.020, d=.50). There was a significant main effect of the level of future time perspective with those High in FTP procrastinating significantly less (M=54.17, SD=11.75) than those Low in FTP (M=63.80, SD=12.28), F(1,116) =12.72, p=.001, d=.80). However, there was no interaction effect, F(1,116) =1.86, p=.175).

Third, a 2 (Plan: Yes vs. No) x 2 (FTP: High vs. Low) ANOVA was also performed on the procrastination scores. Those who had a plan were significantly less likely to procrastinate (M=54.51; SD=10.47) than those with no plan (M=64.57, SD=14.12), F(1,115) =14.42, p<.001, d=.80). Further, those in the Low FTP group had significantly higher procrastination scores (M=63.80, SD=12.28) compared to those High in FTP (M=54.20; SD=11.83), F(1,115) =14.99, p<.001, d=.80). Although not significant F(1,115) =3.37, p=.069), those in the Low FTP group with no plan scored higher procrastination scores (M=69.88, SD=12.62) than every other group (those with Low FTP but with a plan (M=57.48, SD=8.15); those High in FTP with no plan (M=57.31, SD=13.03) or with a plan (M=53.00, SD=11.24).

Fourth, a 2 (Upset vs. Very Upset) x 2 (FTP: High vs. Low) ANOVA was performed on the cognitive reappraisal scores. Those who were upset (*M*=20.29, *SD*=4.47) scored significantly higher on cognitive reappraisal scores compared to those who were very upset (*M*=16.67, *SD*=4.12), *F*(1,116) =10.15, *p*=.002, *d*=.84. Further, those in the High FTP group scored significantly higher on cognitive reappraisal (*M*=20.05, *SD*=4.49) than those in the Low FTP group *(M*=16.56, *SD*=4.12), *F*(1,116) =9.34*, p*=.003, *d*=.81. However, there was no significant interaction *(F*=.358, *p*=.551).

Fifth, those with no plan had significantly lower cognitive reappraisal scores (M=17.36, SD=4.54) than those with a plan (M=19.34, SD=4.71), t(112)= -2.28, p=.024, *d*=.43.

Finally, a multiple regression was conducted to predict future time perspective scores based on procrastination and cognitive appraisal scores. The model was significant, *F* (2,110) =24.54, p<.001 with R^2=.309. Future time perspective was predicted by both procrastination (β=-.369, p<.001) and cognitive reappraisal (β=.321, p<.001).

Discussion

The main aim of the present paper was to explore how the Future time perspective is involved in reflecting upon our non-achievement of our goals, how it may predict procrastination and its involvement in the cognitive reappraisal of unsuccessful attempts, which could promote future attempts at our goal. Results suggest that we often fail to achieve those goals that are long term, in part because we set too large a goal and fail to plan appropriately and in doing so increase the likelihood that we will procrastinate. In planning, we are clearer on what we can do now and what steps we need to take towards achieving our goal, thus feeling more in control. Plans highlight what we must do and what we must avoid to increase our chances of success. Those who do not plan appear to be setting much larger

goals that involve higher self-regulation, which should make planning more important. However, as the goal is so large it may be more difficult to know where to start, which prevents a basic plan being formulated. Thus, perhaps the problem in the first instance may not the lack of planning but that smaller goals should first be formulated.

Not surprisingly, those who set more long term goals requiring more self-regulation procrastinated more compared to those who set short term goals requiring less self-regulation. Those low in FTP with no plan did have higher procrastination scores compared to those low in FTP with no plan and to those high in FTP with or without a plan. One explanation is that those with high FTP are perhaps more realistic about their futures, and do not fool themselves into thinking that they can procrastinate and yet still obtain what they desire. Those with a low FTP may have a more negative view of the present and a positive view of the future, similar to findings cited by Gollwitzer and Sheeran (2006) and Sirois (2014), with the future used as a means of preventing taking action in the present.

Upon failing to achieve our goal we can decide whether to try again or give up on the goal. If we are very upset, we may have no interest in attempting our goal again (as an interesting finding here is how upset participants were related to how highly they also scored on time perspective). Those who were most upset were low in FTP, whereas those high in FTP were less upset. Also, those low in FTP with no plan scored significantly lower on cognitive reappraisal. One possible reason may be indicated by the cognitive reappraisal results. That is, those who reported that they were very upset at the goal failure did not make use of cognitive reappraisal to the same extent as those in high FTP. This may have meant significantly more rumination and such constant dwelling on a negative past is likely to increase distress. Further, those high in FTP did use cognitive reappraisal strategies and this may explain why, by the time they participated in this study and answered the questionnaire, they were barely upset at the failure of their goal. Through cognitive reappraisal, failures

may be re-evaluated to reduce their negative impact, thus allowing for further attempts to be made and new strategies to be tried and evaluated (Gross, Richards, & John, 2006; Troy, Shallcross, & Mauss, 2013).

In lessening the emotional impact of the failure, future attempts at the goal may be made. Those low in the FTP are less likely to adopt a new plan in attempt to succeed at their goals. Rather, they are failing to draw on previous experience to see the previous plan was unsuccessful (thus the plan needs to be adaptive). Indeed, it may be that they are unable to see the future success clearly due to being upset at the failed previous attempt, and not cognitively reappraising the situation to regulate the negative emotions. On the other hand, those high in the FTP may be drawing on this past information to help them put new plans into effect for attempting the goal again. Future research may wish to consider whether those high in the FTP are also high in a Past TP, that is, do we need the past to inform our future attempts, or is the future alone enough in planning for future success?

Future research may also wish to consider the important issue of temporal delay. Indeed, much has been made of construal level theory of psychological distance and mental time travel in temporal research (see Trope & Liberman, 2012, for review). Those with a 'shorter' future time perspective may not value more distant future goals as much as those with a 'longer' future time perspective due to the temporal delay. This makes it more difficult to realise the necessity between our present actions and the future consequences, thus making procrastination more likely.   An understanding and appreciation of the resources that are available to us in the present, and an extended Future TP may increase our chances of focussing on the steps towards achieving our goal rather than just on the goal end-state. This may be especially important if the goal requires a longer period of time to complete. Typically, people prefer smaller rewards that are more immediate compared to larger but more delayed rewards (e.g. Frederick, Loewenstein, & O'Donoghue, 2002). It is often very

hard to stay focussed on a goal if the reward is in a more distant future, thus we should perhaps be more aware of how the path towards our goal and the steps required are interrelated. If procrastination occurs when we are unaware of the steps we need to take towards goal achievement, then by focussing on the 'process' rather than the 'end state' may give us more of a sense of personal agency in the present when we realise minor yet significant progress has been made. This combined with recognising that each step is itself a reward closer to the end-goal reward, may also assist in continuing towards our goal by using cognitive reappraisal strategies in time discounting.

As this study relied heavily on the Zimbardo Time Perspective Inventory (ZTPI) a closer look at this instrument is needed. Since its introduction, the ZTPI has been used extensively in time perspective research. The measure demonstrates internal and re-test reliability as well as convergent, divergent, discriminant, and predictive validity (e.g. Adams & Nettle, 2009; Harber, Zimbardo, & Boyd, 2003; Mackillop, Anderson, Castelda, Mattson, & Donovick, 2006; Zimbardo & Boyd, 2008).   However, it is important to note that there are aspects of time perspectives that are not included and it does have limitations. For example, mindfulness is a state of present moment awareness where one is focussed and aware with a non-judgemental attitude to what is happening and this is generally considered a highly positive present state (Kabat-Zinn, 2004). However, for the ZTPI, the present moment is seen more as a 'pit-stop' to the future and those that 'stop' too long are either overly pleasure seeking (hedonistic) or 'no-hopers' (fatalists). Further, the future on the ZTPI is seen only as a positive, yet there is extensive research on negative future possible selves where one's future may be more ominous (e.g. Markus & Nurius, 1986; Oyserman, & James, 2009).

To fully explore why low FTP is so strongly related to procrastination, lack of cognitive appraisal and more distress when goals fail, a closer look at the items of the future subscale is needed (for example, "When I want to achieve something, I set goals and consider

specific means for reaching those goals" or "Meeting tomorrow's deadlines and doing other necessary work comes before tonight's play.") demonstrate that these items are not purely 'future focussed'. Indeed, they focus very much on the present – specifically, the doing of tasks in the present to create a better future. This is important, as those low in FTP were still goal focussed (they had set goals, and attempted to achieve them so wanted to focus on the future). However, what they appeared not to be doing was attempting to achieve their goals in the present (e.g. higher procrastination scores, less planning etc). Indeed, this finding is similar to that on fantasy futures versus expected futures, with those who create positive fantasies about their future goals failing to take action and those who have positive expectancies about their future goals (based on past experience) take action in the present to realise their goals (Oettingen & Mayer, 2002). Thus, the understanding of how your present relates to your future is crucial when taking action to achieve a future goal. It is not looking to the future alone. Indeed, our results suggest that those who 'fail' but are high in FTP (and hence also taking action in the present) are likely to view such a failure as a step in the learning process to achieving their goal. However, those low in FTP may find their 'fail' harder to cope with.

As a possible future intervention, altering the relationship between the future and the present may help those who fail at their goals with low FTP. Indeed, mental contrasting is one such technique that seeks to connect the work needed in the present to the obtaining of a desired goal in the future (see Oettingen, 2014 for a review of this literature). However, mental contrasting works best with those who have a high expectation of success. The current research did not measure expectation of success (as they had already failed to achieve the goal) but with long-term goals, in particular, a high expectation of success might be asking a lot.

A high expectation of success is highly relevant to the type of goals in this sample of general public participants. It is interesting (but perhaps worrying) to note that most of the goals that participants in this study had recently failed to achieve were health related. Our health goals may be our most meaningful goals as most of us want to succeed in maintaining good health for as long as possible. Therefore, failure in this area may be more acutely felt than failure in other areas (for example, not learning a new skill in doing DIY). Although we cannot achieve every goal we set, perhaps we can increase our goal achievement, particularly for those goals that truly matter to us, by making more use of our time perspectives. Thus, future research may explore three means by which time perspective may help. First, by reducing the time frame (for example, actively using achievable sub goals to achieve long term, high self-regulation), the expectation of success might be higher and mental contrasting with its stronger connection between the present and the future would work best. Second, by changing the time perspective to explore the possibility that the future is now (that is, what you do now is creating your future) may also allow participants to explore what they are doing now to achieve their goals and to see their future more 'immediately'. Third, the Prospective Brain Hypothesis suggests that what we remember of our episodic past predicts what we can imagine in our futures, that is, the episodic past is used to aid the construction of our imagined future. Thus, those with limited access to their past memories (or who have never experienced success in this area in the past) may be unable to imagine in much detail a realistic future (Schacter, Addis, & Buckner, 2007). If we base our futures on past experience, then past failures may lead us to lack the necessary know-how to appropriately plan to achieve certain goals (e.g. lose weight or quit smoking) as we are basing our future actions on a failed past. Indeed, health related behavior change usually fails numerous times before the successful learning to quit smoking or maintaining weight loss long term (Jeffery et al, 2000). Thus, the Prospective Brain Hypothesis would suggest that if we are to re-author

those failures and see them more positively as learning steps to success, then we may try one of two options. First, seek out alternative past experiences of success (if there are none in this area). Second, actively recall, in detail, past episodes of success within the past failure, that is, when that the new behaviour was successful (e.g., someone may have quit smoking for 2 months so how did they do that? What did they do well? When they coped best, what were they doing?). Thus, the 'negative' past experience of failure can be cognitively reappraised into a positive and informative past episode, which could help insure a successful goal completion in the future. Further research is needed to explore how helpful that would be. Indeed, Time Perspective Therapy involves encouraging people to change the focus of their time perspectives, from the negative to the positive, to clear a way to the positive future (Zimbardo, Sword, & Sword, 2013). Although we cannot achieve every goal we set, perhaps we can increase our goal achievement, particularly for those goals that truly matter to us, by making more use of our time perspectives.

References

Adams, J., & Nettle, D. (2009). Time perspective, personality, and smoking, body mass, and physical activity: An empirical study. *British Journal of Health Psychology, 14*, 83-105.

Aldao, A., Nolen-Hoeksema, S., & Schweizer, S. (2010). Emotion-regulation strategies across psychopathology: A meta-analytic review. *Clinical Psychology Review*, *30*, 217–237. DOI:10.1016/j.cpr.2009.11.004

Appleby, P., Marks, G., Ayala, A., Miller, L., Murphy, S., & Mansergh, G. (2005). Consideration of future consequences and unprotected anal intercourse among men who have sex with men. *Journal of Homosexuality*, *50*, 119–133.

Austin, J. T., & Vancouver, J. B. (1996). Goal constructs in psychology: Structure, process,

and content. *Psychological Bulletin,* 120 (3) 338-375.

Bandura, A. (1986). *Social foundations of thought and action: A social cognitive*

   theory. Englewood Cliffs, New Jersey: Prentice Hall.

Baumeister, R. F. (1997). Esteem threat, self-regulation, breakdown, and emotional

   distress and a functioning of self-defeating behaviour. *Review in General*

   Psychology, 1, 145-174.

Bickel, W. K., Odum, A. L., & Madden, G. L. (1999). Impulsivity and cigarette

   smoking: Delay discounting in current, never, and ex-smokers. *Psychopharmacology,*

   146, 447-454.

Boniwell, I., & Zimbardo, P. G. (2004). Balancing time perspective in pursuit of

   optimal functioning. In P. A. Linley and S. Joseph (Eds) *Positive psychology in*

   practice. New Jersey: John Wiley & Sons.

Buehler, R., Griffin, D., & McDonald, H. (1997). The role of motivated reasoning in

   optimistic time predictions. *Personality and Social Psychology Bulletin, 23,* 238-247.

Cartensen, L. L., Issacowitz, D. M., & Charles, S. T. (1999). Taking time seriously:

   A theory of socioemotional selectivity. *American Psychologist, 54,* 165 – 181.

Chapman, G. B., Brewer, N. T., Coups, E. J., Brownlee, S., Leventhal, H., &

   Leventhal, E. A. (2001). Value for the future and preventative health behaviour.

   Journal of Experimental Psychology: Applied, 7, 235-250.

Custers, R., & Aarts, H. (2010). The unconscious will: How the pursuit of goals

   operates outside of conscious awareness. *Science, 329,* 47-50.

Daugherty, J. R., & Brase, G. L. (2010). Taking time to be healthy: Predicting

   health behaviours with delay discounting and time perspective. *Personality and*

   Individual Differences, *48,* 202-207.

Diener, C, I., & Dweck, C, S. (1978). An analysis of learned helplessness:

Continuous changes in performances, strategy, and achievement cognitions following failure. *Journal of Personality and Social Psychology, 36,* 940-952.

Dweck, C. S. (2000). *Self theories: Their role in motivation, personality, and development*. Philadelphia: Taylor and Francis.

Ellis, A., & Kraus, K. (1997). *On procrastination.* New York: Free Press.

Epel, E. S., Bandura, A., & Zimbardo, P. G. (1999). Escaping homelessness: The influences of self-efficacy and time perspective on coping with homelessness. *Journal of Applied Social Psychology, 29,* 575-596.

Ferrari, J. R. (1992). Procrastination and perfect behaviour: An exploratory factor analysis of self-protection, self-awareness, and self-handicapping components. *Journal of Research in Personality, 26,* 75-84.

Ferrari, J. R. (2001). Procrastination as self-regulation failure on performance: Effects of cognitive load, self-awareness, and time limits on 'working best under pressure'. *European Journal of Personality, 15,* 391-406.

Ferrari, J. R., & Diaz-Morales, J. F. (2007). Procrastination: Different time orientations reflect different motives. *Journal of Research in Personality, 41,* 707-714.

Fiske, S. T., & Taylor, S. E. (1991). *Social cognition (2nd ed.)*. New York: McGraw-Hill

Fishbach, A., & Ferguson, M. J. (2007). The goal construct in social psychology. In A. W. Kruglanski & E. T. Higgins (Eds.), *Social psychology: Handbook of basic principles* (pp. 490-515). New York: Guilford Press.

Fortunato, V. J., & Furey, J. T. (2009). The theory of Mind Time and the relationships between thinking perspective and the Big Five personality traits. *Personality and Individual Differences*, *47*(4), 241-246.

Frederick, S., Loewenstein, G., & O'Donoghue, T. (2002). Time discounting and time

preference: A critical review. *Journal of Economic Literature, 40*(2), 351-401.

Gollwitzer, P. M. & Sheeran, P. (2006). Implementation intentions and goal achievement: A

   meta-analysis of effects and process. *Advances in Experimental Social Psychology,
   38,* 70-119.

Gross, J.J., & John, O.P. (2003). Individual differences in two emotion regulation

   processes: Implications for affect, relationships, and well-being. *Journal of
   Personality and Social Psychology, 85*, 348-362.

Gross, J. J., Richards, J. M., & John, O. P. (2006). Emotion regulation in everyday

   life. In D. K. Snyder, J. Simpson, and J. N. Hughes (Eds.) *Emotion regulation in
   couples and families: Pathways to dysfunction and health* (pp.13-35). Washington

   DC: American Psychological Association.

Gupta, R., Hershey, D., & Gaur, J. (2012). Time perspective and procrastination in the

   workplace: An empirical investigation. *Current Psychology,* 31 (2), 195-211

Harber, K. D, Zimbardo; P. G., Boyd, J N. (2003). Participant Self-Selection Biases as a Function of

   Individual Differences in Time Perspective. *Basic and Applied Social Psychology. 25*(3) 255-

   264.

Harriot, J., & Ferrari, J. R. (1996). Prevalence of procrastination among samples of

   adults. *Psychological Bulletin, 78,* 611-616.

Heider, F. (1958). The psychology of interpersonal relations. New York: Wiley.

Hodgins, D. C., & Engel, A. (2002). Future time perspective in pathological

   gamblers. *Journal of Nervous and Mental Disease, 190,* 775-780

Huston, S. J., & Finke, M. S. (2003). Diet choice and the role of time preference.

   Journal of Consumer Affairs, 37(1), 143-160.

Jackson, T., Fritch, A., Nagasaka, T., & Pope, L. (2003). Procrastination and

   perceptions past, present and future. *Individual Differences Research, 1*(1), 17-28.

Jeffery, R. W., Epstein, L. H., Wilson, G. T., Drewnowski, A., Stunkard, A. J., Wing, R.

R.(2000). Long-term maintenance of weight loss: Current status. *Health Psychology,*
19, 5-16.

Kabat-Zinn, J. (1990). *Full catastrophe living: Using the wisdom of your body and mind to*
face stress, pain and illness. New York: Delacorte.

Keough, K, A., Zimbardo, P. G., & Boyd, J. N. (1999). Who's smoking, drinking,
and using drugs? Time perspective as a predictor of substance use. *Basic and*
*Applied Social Psychology, 21(*2) 149 – 164.

Kirby, K. N., & Petry, N. M. (2004). Heroin and cocaine abusers have higher
discount rates for delayed rewards than alcoholics or non-drug-using controls.
Addiction, 99, 461-471.

Lay, C. (1986). At last, my research article on procrastination. *Journal of Research in*
Personality, 20, 474-495.

Lay, C. H. (1990). Working to a schedule on personal projects: An assessment of
person-object characteristics and trait procrastination. *Journal of Social Behaviour*
and Personality, 5, 91-104.

Lay, C. H. (1995). Trait procrastination, agitation, dejection, and self discrepancy.
In J. R. Ferrari, J. L. Johnson, & W. G. McCown, (Eds.). *Procrastination and task*
avoidance: Theory, research and treatment (pp. 97-112). New York: Plenum Press.

Lay, C. H., & Silverman, S. (1996). Trait procrastination, anxiety, and dilatory behavior.
Personality & Individual Differences, 21, 61-67.

Locke, E. A. (1968). Toward a theory of task motivation and incentives. *Organizational*
Behaviour nad Human Performances, 3, (2) 157-189 DOI:10.1016/0030-
5073(68)90004-4.

Locke, E. A., & Latham, G. P. (2002). Building a practically useful theory of goal setting
and task motivation: A 35-year odyssey. *American Psychologist, 57,* 705-717.

Locke, E. A., & Latham, G. P. (2004). What should we do about motivation theory? Six

    recommendations for the twenty-first century, *Academy of Management Review, 29*,

    388–403

Liberman, N., & Trope, Y. (1998). The role of feasibility and desirability considerations in

    near and distant future decisions: A test of temporal construal theory. *Journal of*

    Personality and Social Psychology, 75, 5–18.

Liberman, N., Trope, Y., & Stephan, E. (2007). Psychological distance. In E. T. Higgins & A.

    W. Kruglanski (Eds.), *Social psychology: Hand- book of basic principles* (Vol. 2).

    New York: Guilford Press.

MacKillop, J., Anderson, E. J., Castelda, B. A., Matteson, R. E., & Donovick, P. J.

    (2006). Divergent validity of measures of cognitive distortions, impulsivity, and time

    perspective in pathological gambling. *Journal of Gambling Studies, 22,* 339-354.

Markus, H., & Nurius, P. (1986). Possible selves. *American Psychologist*, 41, 954-969.

McCrea, S. M., Liberman, N., Trope, Y., & Sherman, S. J. (2008). Construal level and

    procrastination. Psychological Science, 19 (12) 1308-1314 DOI: 10.1111/j.1467-

    9280.2008.02240.x

Milfont, T. L., & Gouveia, V. V. (2006). Time perspective and values, An

    exploratory study of their relations to environmental attitudes. *Journal of*

    Environmental Psychology, 26, 72-82.

Milgram, N., Dangour, W., & Raviv, A. (1992). Situational and personal detriments

    of academic procrastination. *Journal of General Psychology, 119,* 123-133.

Oettingen, G. (2014). Rethinking positive thinking: Inside the new science of motivation.

    New York: Penguin Group.

Oettingen, G. & Mayer, D. (2002). The motivating function of thinking about the future:

    Expectations versus fantasies. *Journal of Personality and Social Psychology, 83(5),*

    1198-1212.

Orbell, S., & Hagger, M. (2006). Temporal framing and the decision to take part in

Type 2 diabetes screening: Effects of individual differences in consideration of future

consequences on persuasion. *Health Psychology, 25,* 537-548.

Oyserman D, James L. (2009). Possible selves: From content to process. In: K. Markman,

W. M. P. Klein, & J.A. Suhr, (Eds). *The Handbook of Imagination and Mental

Stimulation.* New York: Psychology Press

Phan, H. P. (2009). Amalgamation of future time orientation, epistemological

beliefs, achievement goals and experiment strategies: Empirical evidence established.

British Journal of Educational Psychology, 79(1) 155-173.

Pintrich, P. R., Conley, A. M., & Kempler, T. M. (2004). Current issues in achievement goal

theory and research. *International Journal of Educational Research, 39,* 319-337.

Reynolds, B., Richards, J., B., Horn, K., & Karraker, K. (2004). Delay discounting

and probability discounting as related to cigarette smoking status in adults.

Behavioural Processes, 65, 35-42.

Sadler, C. D., & Buley, J. (1999). Predictors of academic procrastination in college

students. *Psychological Reports, 84,* 686-688.

Schacter, D. L., Addis, D. R., & Buckner, R. L. (2007). Remembering the past to imagine the

future: The prospective brain. *Nature Reviews Neuroscience*, 8, 657-661.

Shell, D. F., & Husman, J. (2001). The multivariate dimensionality of personal

control and future time perspective beliefs in achievement and self-regulation.

Contemporary Educational Psychology, 26, 481-505.

Sirois, F. M. (2014). Out of sight, out of time? A meta-analytic investigation of

procrastination and time perspective. *European Journal of Personality*

DOI:10.1002/per.1947

Sirois, F. M., & Phchyl, T. (2013). Procrastination and the priority of short-term mood

reduction. Consequences for future self. *Social and Personality Psychology Compass, 7(2),* 115-127.

Specter, M. H., & Ferrari, J. R. (2000). Time orientations of procrastinators: Focusing on the past, present or future? *Journal of Social Behaviour and Personality, 15,* 197-202.

Steel, P. ,& Konig, C.J. (2006), Integrating Theories of Motivation. *Academy of Management Review. 31,* 889–913.

Stolarski, M., Bitner, J., Zimbardo, P.G. (2011). Time perspective, emotional intelligence and discounting of delayed awards. *Time & Society, 20*(3), 346-363.

Triandis, H. C. (1977). *Interpersonal Behaviour.* Monterey, C.A: Brook/Cole.

Trope, Y., & Liberman, N. (2003). Temporal construal. *Psychological Review, 110,* 403–421.

Trope, Y., & Liberman, N., (2012). Construal-Level Theory on psychological distance. *Psychological Review, 117* (2), 440-463.

Troy, A. S., Shallcross, A., J., & Mauss, I. B. (2013). A person-by-situation approach to emotion regulation: Cognitive reappraisal can either help or hurt, depending on the context. Psychological Science, DOI: 10.1177/0956797613496434

Webb, T. L., Miles, E., & Sheeran, P. (2012). Dealing with feeling: A meta-analysis of the effectiveness of strategies derived from the process model of emotion regulation. *Psychological Bulletin*, *138*, 775–808. DOI:10.1037/a0027600

Wills, T. A., Sandy, J. M., & Yaeger, A. M. (2001). Time perspective and early-onset substance use: A model based on stress coping theory. *Psychology of Addictive Behaviours, 15* (2), 118-125.

Zhang, J., & Howell, R. T. (2011). Do time perspectives predict unique variance in life satisfaction beyond personality traits? *Personality and Individual Differences, 50,* 1261-1266.

Zimbardo, P. G., & Boyd, J. N. (1999). Putting time in perspective: A valid, reliable

individual differences metric. *Journal of Personality and Social Psychology, 77* (6),

1271-1288.

Zimbardo, P. G., & Boyd, J. N. (2008). *The time paradox: The new psychology of*

time. New York: Free Press.

Zimbardo, P. G., Sword, R., & Sword, R. (2013). *The Time Cure: Overcoming PTSD with*

the New Psychology of Time Perspective Therapy. San Francisco, CA John Wiley &

Sons