Time is on my side...or is it?

Do our subjective experiences of time perspective and representations of time influence emotions and goal achievement?

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Declaration

Whilst registered as a candidate for the above degree, I have not been registered for any other research award. The results and conclusions embodied in this thesis are the work of the named candidate and have not been submitted for any other academic award.

"Who controls the past controls the future: who controls the present controls the past"

George Orwell

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Contents

Abbreviations

The following abbreviations have been used throughout this thesis and although they have been defined at their first appearance within the text, they are also listed here for ease of reference:

ZTPI	Zimbardo Time Perspective Inventory
BIF	Behaviour Identification Form
STAI	State Trait Anxiety Inventory
BDI	Beck Depression Inventory
GSE	General Self-Efficacy Scale
SRS	Self-Regulation Scale

List of Figures and Tables

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Dissemination of Research

The following is a list of relevant publications and presentations undertaken during the completion of this PhD programme and relevant to the thesis:

Richmond, J., Wilson, J. C, & Zinken, J (2012). A feeling for the future: How does agency in time metaphors relate to feelings? *European Journal of Social Psychology, 42,* 813-823

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Thesis Abstract

Time is objectively measurable, but is subjectively understood within our own time perspective (Zimbardo & Boyd, 1999) and representations of time (Margolies & Crawford, 2008; McGlone & Harding, 1998). The present thesis is in two parts. Part 1 explored how our perceptions and representations of time may influence our emotions. Study 1 sought to validate a measure of two time representations (ego-moving and time-moving) and found that people think about time in a metaphor-consistent manner across clock, calendar, and spatial questions *(N*=94). Study 2 (*N*=128) found that those choosing an ego-moving representation were more likely to see themselves approaching events, reported higher levels of personal agency and scored higher in the Future time perspective. Those who choose a time-moving representation saw the event as approaching them, had significantly lower scores on personal agency and scored highly on Present Fatalism. Study 3 (*N*=199) found that those who reported an ego-moving representation were significantly happier, whereas those reporting a time-moving representation were significantly more anxious and depressed. Study 4 (*N*=232) found that when happiness is induced, participants report significantly more ego-moving representations, whereas when anxiety or sadness are induced, participants report significantly more time-moving representations. Study 5 (*N*=106) found that when ego-moving representations were induced, participants reported significantly higher happiness scores, whereas when time-moving was induced participants report significantly higher anxiety and sadness/depression. Part 2 explored one aspect of ego-moving representations of time, that of goal-getting and perceptions of time more closely. In study 6 (*N*=139), time perspective was explored in relation to non-

achievement of goals. Findings suggest those high in Present Fatalism procrastinate significantly more frequently and often only form the intention towards achieving their goals, and were significantly more upset at past failures. Fatalists also tended not to use cognitive reappraisal strategies to enable them to think differently about how to achieve their goal in future attempts. Those high in the Future time perspective were less likely to procrastinate, less upset at non-attainment of goals, and did tend to use cognitive reappraisal. Study 7 (N=162) examined time perspective, self-efficacy, and goal achievement. For those who achieved their goal within 7 days, the Past Positive and Future time perspectives positively predicted self-efficacy, whereas Present Fatalism negatively predicted self-efficacy. Finally, study 8 (N=76) sought to determine whether focussing on different time perspectives were of help in achieving goals. Results revealed that by focusing on what we have achieved in the past and thinking about managing our future time in the same way we think about our present time may help us to achieve our goals by increasing self-efficacy.

Chapter 1

People's preoccupation with time is so salient that the word 'time' has actually become the most popular noun in the English language ("The Popularity of 'Time' Unveiled", 2006). Indeed, the theme of time is central to many aspects of life, in our everyday discourse with people, the proverbs and metaphors we use, the poetry and stories we read, and the songs we sing. In our daily lives our behaviours are governed by objective, or 'clock' time, as we are routinely aware of when we need to be at certain places in order to go about our daily activities. However, research suggests that we do not all share the same perspective of subjective, or 'psychological', time (e.g. Lewin, 1942; Fraisse, 1963; James, 1890; Zimbardo & Boyd, 1999). Indeed, setting humans apart from other species is the unique ability to mentally travel subjectively through time (e.g. Suddendorf & Corballis, 2007). Our subjective relationship with time reflects our beliefs, attitudes, and values that are related to time, and we all differ in the amount of time that we spend thinking about our past, our present and our future (Zimbardo & Boyd, 2008). Not surprisingly, we are also likely to differ on whether we have positive or negative thoughts regarding the past, present and future.

Despite its obvious importance, we are often unaware of the extent to which our subjective time perspective may influence our lives. Is our individual time perspective related to how much control we feel we have in our lives, or what emotional experiences we may have? Does it play a role when reflecting on non-achievement of our goals and,

is it involved when we make the decision to try to achieve what we want? And, indeed, if we were more aware of our individual time perspective, does changing our focus aid us in helping us achieve our goals? These issues are explored in the present thesis in two parts. Part 1 aims to explore the relationship between representations of time, time perspective, and emotional experiences. Chapter 2 begins by first testing ambiguous time questions used in determining ego-moving and time-moving representations of time (study 1), then investigates the relationship between level of perceived personal agency and the two 'present' and one 'future' time perspectives (study 2). The third, fourth and fifth studies (Chapter 3) examine how agentic control and time representation relate to emotional experiences. That is, whether there are associations between emotional experiences and representations of time (study 3), and whether this is a bidirectional relationship by manipulating emotional experience (study 4) then by manipulating representations of time (study 5). Part 2 then explores one aspect of the ego-moving representation of time in relation to goal getting and time perspective. In Chapter 4, study 6 examines how our subjective experience of time relates to non-achievement of our goals, procrastination, and what (if anything) we learn from past failures and whether this predicts future attempts at our goals. Finally, Chapter 5 explores whether different time perspectives and self-regulation predict self-efficacy towards successful goal achievement (study 7), then whether a time perspective intervention can help us achieve our future goals (study 8). The remainder of the present chapter will begin by exploring our representations of time, followed by defining time perspective, then examine its relevance to attempting agentically to achieve our goals.

Our representations of time

To understand abstract concepts such as time, we use metaphors that derive from more concrete concepts. We say that time heals, steals, and flies when we have fun; it is something that we make and take, keep and waste, save and spend, lose and kill; and can also be described as money, as a teacher, as a gift, or as a flowing river (Lakoff & Johnson, 1980). Time is often represented spatially, usually in one-dimensional directional terms such as up or down and ahead or behind but there is no universal concept as in different cultures time may move horizontally, vertically, forwards, back, up or down. Indeed, a common metaphor for English speakers is 'time as movement in space' (Casasanto & Boroditsky, 2008). It could be argued that this is not a metaphor as such, but reality. Indeed, calendar/ clock time is measured as a movement of our planet through space. A day is one rotation of our planet, whereas a year is one revolution of our planet around the sun. Further, physicists would point out that time is part of the space-time continuum i.e. not separable from space. However, the present thesis is examining subjective experiences of time and in this sense, the movement is metaphorical. This metaphorical 'movement' of time may be visualized in one of two ways. First, we are active agents moving towards or away from the reference object/event down a stationary timeline (Carver, 2006; Hauser, Carter, & Meier, 2009; Krieglmeyer, Deutsch, De Houwer & De Raedt, 2010; Margolies & Crawford, 2008). Second, the reference object is moving towards or away from us (McGlone & Harding, 1998).

Talmy (1996) suggested that those who view themselves as moving through time (that is, time is stationary, like a road to be travelled down) have a more global motion perspective, perceiving themselves as moving towards any future event which is seen as stationary. Further, those who view the future event as moving (that is, the event is like an object on a conveyor belt moving towards them) have a more local motion perspective, perceiving themselves as stationary (Talmy, 1996). As Figure 1 demonstrates, these two conceptualisations of time are often referred to in experimental literature as; first, an 'ego-moving' or 'person-moving' representation; and, second, as a 'time-moving' or 'object-moving' representation (Boroditsky, 2000; Clark, 1973; Fillmore, 1997 [1971]); Hauser, Carter, & Meier, 2009; Lakoff & Johnson, 1980; McGlone & Harding, 1998; Ruscher, 2011). The present thesis will refer to them as ego-moving and time-moving respectively.

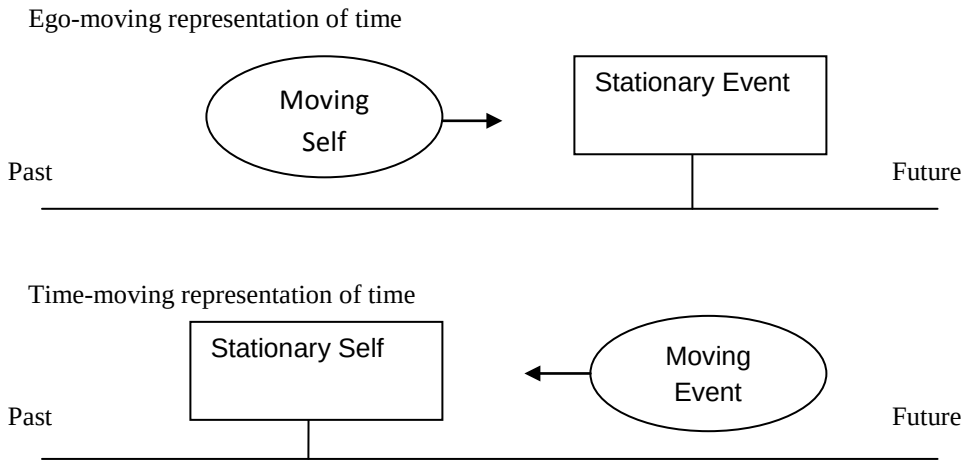

Figure 1 The ego-moving and time-moving metaphorical representations of time (adapted from Clark, 1973).

These spatial metaphors for time may influence our perception and judgement. For example, if told the meeting on Wednesday has been moved forward two days, those who see themselves as moving forward, report that the meeting is now on a Friday (McGlone & Harding, 1998). However, for those who see themselves as stationary, if told the meeting on Wednesday has been moved forward two days, perceive time as moving towards them and so they report that the meeting is now on Monday (McGlone & Harding, 1998; Margolies & Crawford, 2008). This research implies that the 'time-moving' metaphorical representation is the reverse of the 'ego-moving' metaphorical representation, as events that move forward through space can prime the perspective that time moves, whereas stationary events where people move through space can prime the perspective that time is stationary (Ruscher, 2011). However, this may be an artefact of the question asked. That is, McGlone and Harding's (1998) ambiguous time question, the "meeting has been moved forward", refers specifically to the 'week' itself (i.e., the calendar), rather than the 'ego'. Thus, the results may say more about a function of the language used than about an active, engaged self versus a passive self (e.g. Zinken, 2009). Therefore, the 'time-moving' representation (passive self) may be a way of metaphorically talking about 'time passes' through calendaric events (over weeks, months, years etc.) whereas the 'ego-moving' representation (engaged self) may represent intentions rather than time per se. Thus, rather than being the reverse of one another, they may be two different contexts. For example, one might say 'I am going to be a doctor' but less likely to say 'Doctorhood is coming closer'.

These representations of time refer to time in-the-present-moment. That is, 'I am now moving through time' or 'time is moving towards me'. However, humans do not

only think about time in the present moment, we also think about the past and the future. These will be referred to in the present thesis as time perspectives, and it is to these that we now turn.

Time perspectives

For many years the psychological study of time focused predominantly on reaction time or perceptions of elapsed time, with little attention paid to our subjective experience of time, that is, temporal perspectives. Lewin (1942) defined time perspective as "the totality of the individual's views of his psychological future and psychological past existing at a given time" (p.75) but as the topic became more popular, there emerged numerous different ways of approaching the concept. Zimbardo and Boyd (1999) extended Lewin's (1942) conceptualisation, and this will be used in the present thesis. Thus, time perspective is 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).

Zimbardo and Boyd (1999) constructed the Zimbardo Time Perspective Inventory (ZTPI) to assess biases towards one or more of the five factor subscales on the inventory. The ZTPI is a well established, reliable and valid measure of five time perspective factors, namely the 'Past Positive'; 'Past Negative'; 'Present Hedonistic'; 'Present Fatalistic'; and 'Future' perspectives. Since it's introduction, the ZTPI has been used extensively in time perspective research, and 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). The ZTPI consists of 56 items, and asks respondents to indicate how characteristic each item is of them using a 5-point Likert scale, which ranges from very uncharacteristic (1) to very characteristic (5). It is worth noting that one further time perspective (which can be measured with a further ten items added to the ZTPI) is the 'Transcendental Future' time perspective, which refers to a belief in life after death. However, this factor was not examined in the present thesis.

Many people assume that their memories of the past are accurate, but vast amounts of research suggests that memories are not an objective record of the past but more of a reconstruction, which is influenced by present attitudes, beliefs, emotions, and information (e.g. Bartlett, 1932; Loftus, 1997; Loftus & Palmer, 1974). Despite the failings of memory (or perhaps because of it), our subjective remembrance of past events matter more than the events themselves; it is these remembrances that we rely on when making decisions about our present and future. For example, if I remember that I love ice cream and forget that I always eat too much and then feel sick, now and in the future I will continue to eat too much ice cream. The two 'past' perspective subscales are termed 'Past Positive' and 'Past Negative' time perspectives (Zimbardo & Boyd, 1999).

The Past Positive time perspective can reflect events that we experienced as positive or positive attitudes towards past events that have enabled us to make the best of a bad situation. Past Positive items on the ZTPI include 'It gives me pleasure to think about the past' and 'I get nostalgic about my childhood'. Those who score high on the

Past Positive time perspective have been found to also have higher levels of self-esteem and friendliness, lower levels of anxiety, and tend to cope with stressful situations more effectively compared to those scoring lower on this perspective (Zimbardo & Boyd, 1999). Those scoring high in the Past Positive time perspective do not necessarily have better pasts, however, they may tend to interpret their pasts more positively. Thus, the meaning given to the event matters more than the event itself (Zimbardo & Boyd, 2008).

The Past Negative time perspective assesses our negative attitudes and views towards events that have occurred in the past, including past regrets. A negative reconstruction of previous events may cause rumination in the present, and items relating to this perspective on the ZTPI include 'I think about the bad things that have happened to me in the past' and 'I often think of what I should have done differently in my life'. Those scoring high on the Past Negative perspective have been shown to have lower self-esteem and are less energetic and friendly than those scoring low on this perspective (Zimbardo & Boyd, 1999). Again, those scoring high in the Past Negative perspective may not necessarily have more negative past experiences, but interpret their past more negatively (Zimbardo & Boyd, 2008).

We cannot physically time travel to change events in our past that we experience as negative, however, we often return to them mentally and sometimes give those events new meaning, thus reducing some of the negative impact these events caused (Suddendorf & Corballis, 2007; Zimbardo & Boyd, 2008). Further, we can also change our focus – we can focus on our past successes rather than our past failures. Thus, what we learnt worked for us in the past may help in the present to structure a plan for future

achievement rather than ruminating on what failed previously (or denying past failure and hence run the risk of constantly repeating it).

Next, the two 'present' perspectives are 'Present Hedonism' and 'Present Fatalism'. Present hedonists live for the moment, and choose courses of action in life that are pleasurable, stimulating and exciting, whilst actively trying to avoid tedious or boring activities. Hedonists often prefer inconsistency in their lives, and items relating to this perspective on the ZTPI include 'Taking risks keeps my life from becoming boring' and 'I often follow my heart more than my head'. On the other hand, a Present Fatalistic time perspective involves a fatalistic, helpless, and hopeless attitude towards life and the future. Fatalists often believe that nothing that they do will make a difference, and items on the ZTPI include 'My life path is controlled by forces I cannot influence' and 'Often luck pays off better than hard work'. 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; Zimbardo & Boyd, 1999). Present orientation can aid us in becoming immersed in our experiences, but whether we view experiences hedonistically or fatalistically can impact on how immersed we become and the sense of personal control, or agency, we have over events.

The 'Future' time perspective is the final subscale on the ZTPI and its items 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'. The Future time perspective includes behaviours that are often dominated by a striving for future goals and rewards,

but often at the expense of present enjoyment (Zimbardo & Boyd, 1999). Those scoring high in the Future time perspective usually have higher academic achievement, reduced sensation seeking, and indulge in fewer health risk behaviours compared to those low on the Future perspective (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 study of time perspective has been found to be useful in understanding addictive behaviours (e.g. Bickel, Odum, & Madden, 1999; Hodgins & Engel, 2002; Kirby & Petry, 2004; MacKillop, *et al*, 2006; Reynolds, Richards, Horn, & Karraker, 2004), health related behaviours (Adams & Nettle, 2009; Appleby *et al*, 2005; Chapman, Brewer, Coups, Brownless, & Leventhal, 2001; Daugherty & Brase, 2010; Huston & Finke, 2003; Orbell & Hagger, 2006), personality traits (e.g. Fortunato & Furey, 2009; Milfont & Gouveia, 2006; Zhang & Howell, 2011), and academic achievement (e.g. Phan, 2009). An optimally balanced time perspective would encompass past, present and future components that are flexible depending on a particular situation's demands, and our own particular needs (Zimbardo, 2002). An ideal, 'Balanced Time Perspective' is thus suggested to involve a high orientation towards Past Positive perspective, a moderately high orientation towards Future and Hedonistic perspectives, and a low orientation towards Past Negative and Present Fatalistic perspectives (Boniwell & Zimbardo, 2004; Zimbardo & Boyd, 2008).

The ZTPI will be used in the present thesis. However, it is important to note that there are aspects of time perspective that it does not include and it also has some limitations. For example, mindfulness is a present state where one is focussed and aware with a non-judgemental attitude to what is happening (Kabat-Zinn, 2004). Indeed, it is generally considered a highly positive present state, whereas the ZTPI sees the present as a 'pit-stop' to the future and those that 'stop' too long are either overly pleasure seeking or 'no-hopers'. Further, the future on the ZTPI is seen only as a positive, yet there is extensive research on negative future possible selves (e.g. Markus & Nurius, 1986; Oyserman, & James, 2009) which suggests other future options which may be extremely damaging.

In our culture, to be ego-moving with high personal agency and a strong Future time perspective means to be a high achiever. A high achiever means essentially to set and get goals. Thus, does how we use our subjective experience of time help or hinder successfully achieving the future goals we set ourselves?

Between setting a goal and achieving it

As well as being used in the encoding, storage and retrieval of our experiences, these time perspectives may also be used in forming expectations and in setting ourselves goals. Between our psychological reconstructions of the past and our imagined futures is our concrete present, and current decision making and courses of action may be influenced by our perspective on our previous life events and anticipated futures (Boniwell, 2005). By their nature, goals refer to future events. Our past successes and failures may influence the goals we set ourselves in that what we do today

may depend on the connections we make between our past behaviours and what behaviours we need to perform and avoid in both the present and the future. We set ourselves many goals throughout life, ranging from study and career goals to health related goals, and whilst sometimes we achieve some of them, we sometimes fail to achieve others. Inefficient time management may be one reason we fail, but we often know what we should do but do not act within an expected or desired time frame, or we unnecessarily delay engaging in activities, becoming more 'present-oriented' which often results in procrastination (Ferrari, Johnson, & McCown, 1995). However, is this due to hedonistic tendencies or is it due to past failures paralysing us in the present, hindering us so that we cannot move forward towards achieving our goals? As we do not always achieve the goals we set ourselves, this failure can either undermine or motivate us to attempt our goals again. People have different reactions to failure in different situations (Diener & Dweck, 1978; Dweck, 2000), thus, as well as depending on what the goal is, the way we feel about previous unsuccessful attempts may influence our decision of whether to give up on our goal or to attempt our goal again. One response to failing to achieve something we wanted to achieve is to be upset, but some people may be more upset than others, and the present thesis explores whether this may also be influenced by time perspective.

Previous research has attempted to discover why some people achieve the goals they set themselves where as others fail by examining how past self-regulation can build present self-efficacy, and how present self-efficacy predicts future goal achievement (e.g., Ajzen, 1985; Bandura, 1977; Pintrich, 2000, 2004; Zimmerman, 1989; Zimmerman & Schunk, 2008). In our selection and pursuit of future goals in the

present, we demonstrate something of how what we learned in the past can shade our future (e.g. Cartensen, Issacowitz, & Charles, 1999; Markus & Nurius, 1986; Oyserman & James, 2009). Being future oriented may seem like the more effective way of striving towards achieving the goals we set ourselves (e.g. Zimbardo & Boyd, 1999) but there are costs of becoming too biased towards one particular time perspective (Boniwell & Zimbardo, 2004). For example, those high in the Future time perspective may be less depressed as they spend less time ruminating about their past and more time planning for future rewards, but this is often at the expense of seeking novelty or enjoying the present. In relation to self-efficacy and goal achievement, it seems reasonable to assume that being high in the Future time perspective would increase self-efficacy towards goal achievement but it is unlikely that people can plan for the future without using past information. Thus, people who score high in the Future time perspective may learn from their pasts to create a more positive future, and therefore also score high in the Past Positive time perspective. Boniwell and Zimbardo (2004) posited that we can change our patterns of attentional time perspective focus, thus we can choose to focus on our past successes for future prospects. If the Past Positive and the Future time perspectives predict higher self-efficacy to promote goal achievement, we may be able to increase self-efficacy by boosting one's focus on Past Positive and Future time perspectives. This will also be explored in the present thesis.

The Present Thesis

The thesis is formed of two main parts. Part 1 explored how our metaphorical movement through space influences our perceptions and representations of time which, in turn, may influence our emotions. First, McGlone and Harding's (1998) ambiguous time question is used extensively in research to determine either ego-moving or time-moving representations of time, despite the measure consisting of a single question. Measures consisting of a single item are intrinsically unreliable and, as discussed, the question itself may serve to highlight the importance of the 'week' and thus be a function of the English language rather than perspective per se. Thus, Chapter 2 sought to validate the McGlone and Harding (1998) ambiguous time question measure of the two time representations (ego-moving and time-moving) to explore whether people think about time in a metaphor-consistent manner across clock, calendar, and spatial ambiguous questions. Study 2 explored whether choosing an ego-moving representation was more likely to relate to participants seeing themselves approaching events, reporting higher levels of personal agency and scoring higher in Future time perspective. Further, would those choosing a time-moving representation see the event as approaching them, have significantly lower scores on personal agency and score more highly in Present Fatalism? Study 3 then explored emotions and time representations. That is, do those who report an ego-moving representation also report being happier, compared to those who report a time moving representation, who may report more anxiety and depression? Study 4 sought to discover how flexible the effect may be by inducing happiness to see if that increases the reporting of more ego-moving time representations. It also induced anxiety and depression to see if that resulted in more time-moving representations.

Study 5 sought to explore if the reverse was also possible, that is when ego-moving is induced do participants report higher happiness scores, and when time-moving is induced, do participants report higher anxiety and depression scores?

Part 2 then explored in more depth one aspect of ego-moving representations, that of goal-getting and perceptions of time. By setting clear goals and by concentrating and focussing on achieving them, we may develop a sense of personal agency (Zimbardo & Boyd, 2008). Thus Chapter 4 (study 6) explores how time perspective is related to procrastination and investigates whether it plays a role in reflecting on non-achievement of our goals and whether it influences the decision to attempt the goal again in the future. Do present oriented people frequently procrastinate thus not achieve their goals, and are people who are more future oriented less likely to procrastinate? People have different reactions to failure, thus is time perspective related to how upset we are when we don't achieve our goals and is time perspective involved in helping us to think differently about past non-achievement of goals, thus enabling us to attempt the goal again in the future? Finally, Chapter 5 (studies 7 and 8) investigates whether time perspective predicts self-efficacy towards goal achievement. If we reflect on our previous successes, does this boost our confidence in our ability to achieve our goals, and can we use this information to project into the future? Thus, do the Past Positive and Future time perspectives predict higher self-efficacy to promote achieving what we want, and can we increase our self-efficacy by boosting our focus on Past Positive and Future time perspectives?

Chapter 2

Level of perceived agency, representations of time, and time perspective (Studies 1 and 2)

Chapter Summary

Most cultures have metaphors for time that involve movement, for example 'time passes' (Lakoff & Johnson, 1980). Although time is objectively measured it is subjectively understood, as we can perceive time as stationary whereby we move towards future events, or we can perceive ourselves as stationary with time-moving past us and events moving towards us (McGlone & Harding, 1998). This Chapter reports two studies that first examines whether participants (N=94) think about time in a metaphor-consistent manner (study 1), then study 2 (N=128) explores the relationship between time perspective (Zimbardo & Boyd, 1999), level of perceived personal agency (Vallacher & Wegner, 1989), and time representations (Margolies & Crawford, 2008; McGlone & Harding, 1998). Results from study 1 support the hypothesis of the robustness of the designation of ego-moving or time-moving representations of time. In study 2 the hypotheses are also supported, as people high in the future time perspective adopted more ego-moving representations of time with higher levels of agency. Present hedonists also adopted ego-moving representations but did not differ in agency levels whereas those high in present fatalism naturally adopted time-moving representations with lower levels of personal agency.

While we 'know' the past and can 'see' the present, it is the 'unknown' future that modernity looks to (e.g., Zimbardo & Boyd, 1999). Indeed, how we understand our future can be a strong predictor of how we act in the present (Markus & Nurius, 1986; Oyserman & James, 2009). This is most obvious in how we select and pursue our future goals in the present (Cartensen, Issacowitz, & Charles, 1999). However, what is less obvious is how our understanding of the future relates to how we feel in the present. This chapter reports two studies that are the first to explore how metaphor use for future events relates to our present emotional state. For example, if we think of future events as activities that we intentionally 'strive towards' does this indicate that we feel significantly happier in the present? If we think of future events as activities that we would rather avoid, do we lose that sense of agentic control and let events 'come at' us making us feel more anxious or sad in the present?

As discussed in Chapter 1, time perspective research has been explored in many areas of psychological research (e.g. Adams & Nettle, 2009; Bickel, Odum, & Madden, 1999; Boniwell & Zimbardo, 2004; Chapman, *et al*, 2001; Daugherty & Brase, 2010; Fortunato & Furey, 2009; Hodgins & Engel, 2002; Huston & Finke, 2003; Kirby & Petry, 2004; MacKillop, *et al*, 2006; Milfont & Gouveia, 2006; Orbell & Hagger, 2006; Phan, 2009; Reynolds, *et al*, 2004; Zhang & Howell, 2011; Zimbardo & Boyd 2008). The present chapter is primarily concerned with the two present perspectives (Hedonism and Fatalism) and the Future time perspective. First, a Present Hedonistic time perspective involves actively engaging in the moment, usually actively seeking pleasure and excitement whilst avoiding pain (including boredom). Thus, present hedonists have a sense of personal agency but are highly susceptible to influences in their immediate

environment and are often impulsive. Second, a Present Fatalistic time perspective involves a helpless and hopeless attitude towards life and the future. Fatalists often believe that nothing that they do will make a difference, so passively avoid trying to change. Thus, they may lack any strong sense of personal agency, which may lead to depression and suicide (van Beek, Berghuis, Kerkhof, & Beekman, 2011). Although previous research suggests that present oriented people are more likely to engage in thrill seeking behaviours (e.g. unsafe sex, drug and alcohol misuse), this is more indicative of hedonists whereas fatalists tend to have less self-esteem and more avoidant coping strategies (e.g. Epel, Bandura, & Zimbardo, 1999; Keough, Zimbardo, & Boyd, 1999; Zimbardo & Boyd, 1999). Third, and finally, those more focussed on the 'future' time perspective actively strive for positive future goals and rewards, but often at the expense of present enjoyment (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 perspective (e.g. Shell & Husman, 2001).

As discussed in Chapter 1, McGlone and Harding's (1998) ambiguous time question is used extensively in research to determine either ego-moving or time-moving representations of time, despite the measure consisting of a single question (namely "The meeting originally scheduled for next Wednesday has been moved forward two days. What day is the meeting now that it has been rescheduled?"). Single item measures are fundamentally unreliable and, the question itself may only highlight the importance of the 'week' (thus be a function of the English language rather than perspective per se). Thus, study 1 examined whether McGlone and Harding's (1998)

original ambiguous question is related to other ambiguous questions that focus on spatial, clock, and calendar events, thus sought to determine the general reliability and establish the validity of McGlone and Harding's (1998) original ambiguous question. Study 2 then explored how the level of perceived personal agency may relate to time perspective and the metaphorical (ego-, or time-moving) representations of time. Are those with higher personal agency more ego-moving and future-orientated?

STUDY 1

McGlone and Harding's (1998) ambiguous time question was tested with spatial, clock and calendar ambiguous questions to examine the robustness of the designation of ego-moving or time-moving representations of time. In comparison to those with a time-moving representation, it is hypothesised that those who answer with an ego-moving representation for McGlone and Harding's (1998) question are hypothesised to also answer consistently with ego-moving representations for the spatial, clock and calendar ambiguous questions.

Method

Participants

Participants were 28 males and 66 female undergraduate students with an average age of 21.08 (SD=4.15) years. They were invited to take part for course credit.

Materials and Procedure

Participants first answered McGlone and Harding's (1998) Ambiguous Time Question which reads "The meeting originally scheduled for next Wednesday has been

moved forward two days. What day is the meeting now that it has been rescheduled?". If participants answer "Friday", this is indicative of an ego-moving representation and if participants answer "Monday" then this is indicative of a time-moving representation. Participants were then asked a further nine ambiguous questions. These consisted of four spatial questions (e.g. "The letter 'M' in the alphabet has been moved forward four places. What letter will the letter 'M' now follow in its new position?"); two clock questions (e.g. "Normally an alarm clock is set for 9am but the alarm has been moved forward ten minutes. What time is the new alarm set for?"); and three calendar questions (e.g. "The first day of the January sales is normally 10th January but this year the sales start date has moved forward 5 days. On what date do the January sales now begin?"). These questions were also coded as either ego-moving or time-moving in their representation (see Appendix 2A for all questions).

Ethical Considerations

The present study was approved by both the Psychology Department Ethics Committee at the University of Portsmouth and the Research and Ethics Committee at Teesside University. The study was conducted in accordance with the British Psychological Society ethical guidelines and there was no deception involved in this study. Confidentiality was ensured by using anonymous participant numbers as identifiers on the questionnaire, and all informed consent forms (Appendix 2B) were kept separate to the questionnaires. The debriefing form (Appendix 2C) also detailed further contact information should they want help or further information about the study.

Results and Discussion

Thirty-nine participants (41.5%) answered the McGlone and Harding (1998) ambiguous time question with a 'Friday' response indicating an ego-moving representation, and 54 participants (57.4%) responded with a 'Monday' indicating a time-moving representation (one participant (1.1%) was coded as missing data for answering with a different day of the week). The consistency across all questions (spatial, clock and calendar) of answering with either ego-moving representations or time-moving representation of time was examined (see Table 2.1). First, for the spatial questions, the ego-moving answers showed a relatively low consistency with McGlone and Harding's (1998) answer (from 59.3% to 77.1%) but it was much higher for the time-moving representation (with a range of 79.3% to 88.6%). Second, for the clock questions, the ego-moving consistency between answers was better (from 61.9% to 73.9%) and again it was much higher for time-moving (with a range of 74.5% to 94.9%). Third and finally, for the calendar questions, as expected the ego-moving answers showed high consistency with McGlone and Harding's (1998) answer (from 87.9% to 89.9%) and there was also a high consistency with the time-moving option (from 79.4% to 84.7%).

Table 2.1

Chi Square Analysis of McGlone and Harding's (1998) Ambiguous Time Question with Spatial, Clock and Calendar Ambiguous Questions

		Question (McGlone & Harding, 1998)		
		Ego	Time	χ^2
Spatial a	Ego	64.6%	12.5%	
	Time	35.4%	87.5%	21.16**
Spatial b	Ego	59.3%	16.7%	
	Time	40.7%	83.3%	16.06**
Spatial c	Ego	77.1%	20.7%	
	Time	22.9%	79.3%	28.57**
Spatial d	Ego	66.7%	11.4%	
	Time	33.3%	88.6%	24.59**
Clock a	Ego	73.9%	5.1%	
	Time	26.1%	94.9%	40.90**
Clock b	Ego	61.9%	24.0%	
	Time	38.1%	74.5%	13.53*
Calendar a	Ego	87.9%	15.3%	
	Time	12.1%	84.7%	46.04**
Calendar b	Ego	89.7%	20.6%	
	Time	10.3%	79.4%	38.74**
Calendar c	Ego	89.7%	20.3%	
	Time	10.3%	79.7%	39.41**

*p<0.005, **p<0.001

Whilst some of the results of McGlone and Harding's (1998) ambiguous time question may be specific to the calendar, there is now evidence that using spatial and clock metaphors still produce relatively similar results (that is, this specific metaphor does generalise to wider metaphors). Supporting the hypothesis, results suggest that people are consistent in their representation of time, and therefore demonstrate the robustness of the designation of ego-moving or time-moving representations of time.

The McGlone and Harding (1998) ambiguous time question demonstrates validity, and thus will be used cautiously in studies 2 to 5 of the present thesis to assess indications of either ego-moving or time-moving representations of time.

STUDY 2

Next, the relationship between level of perceived personal agency and time perspective was examined. Within the time perspectives, focussing on the present can be seen as taking a narrower and local view, whereas focussing on the future requires a much broader, global view. Within action identification theory (Vallacher & Wegner, 1985), actions can be identified from low levels that specify 'how' the action is performed to high levels that specify the 'why' or 'with what effect' the action is performed. Similarly, Vallacher and Wegner (1985) posited that people may be characterised in terms of their level of personal agency. That is, those with higher levels of personal agency think about their actions by incorporating motives and meanings (and perhaps their futures) whereas those with lower levels think about their actions in terms of the details or method (and perhaps here and now). The Behaviour Identification Form (BIF) developed by Vallacher and Wegner (1989) assesses individual differences in action identification and level of personal agency. It was hypothesised that those who adopt an ego-moving representation were more likely to feel like they were approaching an event due to higher levels of personal agency as indicated by BIF scores, and would also score higher on Future orientation time perspective. Further, those who adopt a time-moving representation of time would feel that an event was approaching them, therefore with a lower level of personal agency on

the BIF, and would score higher on Present Fatalism time perspective. Finally, those scoring high on Present Hedonism are expected to adopt a time-moving representation of time, with lower levels of personal agency.

Method

Participants

Fifteen male and 113 female undergraduate students with an average age of 20.57 (SD=5.14) years were invited to take part for course credit.

Materials and Procedure

Participants first answered McGlone and Harding's (1998) Ambiguous Time Question as in study 1. Participants were then asked which statement best describes how they feel to assess whether they had approach or avoid motivations, based on that by Margolies and Crawford (2008). Participants either responded 'a) I am approaching the meeting' or 'b) The meeting is approaching me'. Next, participants completed Vallacher and Wegner's (1989) Behaviour Identification Form (α=.92), which consists of 25 listed behaviours followed by two different ways in which the behaviour may be identified. The two choices are designed to assess individual differences in action identification level, one at the lower level of agency, and the higher level of agency alternative (see Appendix 2D). Finally, participants' time perspective was measured using three of the five subscales (Present Hedonism; Present Fatalism; and Future orientation) from Zimbardo and Boyd's (1999) Zimbardo Time Perspective Inventory (Appendix 2E). The Present Hedonism scale (α=.72) consists of 15 items, the Present Fatalism subscale (α=.74) consists of 9 items, and the Future orientation subscale

(α=.76) consists of 13 items. Each item on each subscale is rated on a five point scale ('very untrue about me' to 'very true about me'). Following reverse scoring of some items, a higher score on each subscale indicates a higher preference for this time perspective.

Ethical Considerations

As before, this study was approved by both the Psychology Department Ethics Committee at the University of Portsmouth and the Research and Ethics Committee at Teesside University. The study was conducted in accordance with the British Psychological Society ethical guidelines and there was no deception involved in this study. Confidentiality was ensured by using anonymous participant numbers as identifiers on the questionnaire, and all informed consent forms (Appendix 2F) were kept separate to the questionnaires. Participants made a note of their unique participant number and were provided with contact information and details of how to withdraw their data should they wish to at a later date. The debriefing form (Appendix 2G) also detailed further contact information should they want help or further information about the study.

Results and Discussion

All screening tests for parametric tests were conducted but results are only reported when assumptions were violated. Participants' responses to McGlone and Harding's (1998) Ambiguous Time Question were analysed using a series of t-tests. As shown in Table 2.2 the hypothesis is supported, as participants with an ego-moving representation reported significantly higher agency (BIF) scores and significantly higher

Future time perspective scores than those with a time-moving representation[1]. Also supporting the hypothesis, participants with a time-moving representation reported significantly higher Present Fatalistic scores and significantly higher Present Hedonistic scores compared to participants with an ego-moving representation.

Table 2.2

T-test Analyses of McGlone and Harding's (1998) Ambiguous Time Question with Behaviour Identification Form (*BIF) and Zimbardo Time Perspective Inventory Scores*

	McGlone and Harding's (1998) Ambiguous Time Question						
	Ego-Moving		Time-Moving				
	M	*SD*	*M*	*SD*	*t*	*d*	*p*
BIF (agency)	17.45	3.56	14.06	4.38	4.48[a]	.85	<.001
Future	3.36	.41	3.02	.40	4.34[b]	.83	<.001
Fatalistic	2.27	.53	3.11	.53	7.18[c]	1.36	<.001
Hedonistic	2.98	.57	3.32	.48	-3.32[d]	.64	.001

[a]*df*= 114. [b]*df*= 110. [c]*df*= 112. [d]*df*= 106.

Next, whether participants viewed themselves approaching the meeting or whether they viewed the meeting as approaching them (the Margolies and Crawford, 2008, question) was analysed using t-tests. Supporting the hypothesis and as shown in Table 2.3, participants who viewed themselves as approaching the meeting reported higher agency scores and significantly higher Future oriented time perspective compared to those who viewed the meeting as approaching them. Also in support of the hypothesis, participants who viewed the meeting as approaching them reported

[1] There was a significant multivariate effect, $F(4,94)=14.65$, $p<0.0001$, $\Lambda=0.616$, $\eta^2=0.384$

significantly higher Present Fatalistic scores compared to those who viewed themselves as approaching the meeting. However, for the Present Hedonists, there was not a significant difference between those who perceived the meeting as approaching them and those who saw themselves as approaching the meeting.

Table 2.3

T-test Analyses of Margolies and Crawford's (2008) Ambiguous Question with Behaviour Identification Form (BIF) and Zimbardo Time Perspective Inventory Scores

	Margolies and Crawford's (2008) Ambiguous Question						
	Self-Approaching		Meeting Approaching				
	M	*SD*	*M*	*SD*	*t*	*d*	*p*
BIF (agency)	16.72	4.35	13.96	3.93	3.49[a]	.67	.001
Future	3.28	.46	3.00	.33	3.35[b]	.67	.001
Fatalistic	2.53	.65	3.03	.78	-3.86[c]	1.36	<.001
Hedonistic	3.12	.55	3.23	.53	-1.03[d]	.20	.305

[a]*df*= 113. [b]*df*= 108. [c]*df*= 111. [d]*df*= 105.

Next, to examine the relationship between McGlone and Harding's (1998) Ambiguous Time Question and the Margolies and Crawford, (2008), approach question, a chi square analysis was performed. Those who perceived the event as approaching them adopted a more time-moving representation (66.7%, *n*=38) rather than an ego-moving representation (50.7%, *n*=38) whereas those envisaging that they were approaching the event were more likely to adopt an ego-moving (49.3%, *n*=37) than a

time-moving representation (33.3%, *n*=17) however this was only marginally significant ($\chi^2$1 (N = 77) = 3.71, p =.054).

Finally, correlations showed a negative relationship between Present Fatalism and agency (*r*=-.46, p<0.01), and a positive relationship between a Future orientation and agency (*r*=.53, p<0.01), but no relationship between Present Hedonism and agency scores (*r*=-.16, p>0.05).

Chapter Discussion

Study 1 established the validity of McGlone and Harding's (1998) ambiguous time question by revealing that people answer in a metaphor-consistent manner (with either ego-moving or time-moving representations of time). Then, Study 2 provides initial evidence for higher levels of perceived agency relating to a greater likelihood of adopting an ego-moving representation of time. Thus, those who see themselves as active agents have a higher future orientation so are more likely to see themselves approaching events to come. Similarly, those with lower levels of perceived agency reported more time-moving representations, were more likely to be Present Fatalists and perceive events as approaching them. Interestingly, those scoring high on Present Hedonism were more likely to adopt a time-moving representation of time, but were more ambiguous as to whether they perceived themselves as approaching events or whether they perceived the events as approaching them, and consequently no difference was found with regard to level of perceived personal agency.

Feeling in control and proactively moving towards a positive future is likely to induce happiness, whereas fatalistically waiting for life to come at you might be more

depression inducing. So how agentic control and time representations relate to emotional experiences will be explored in Chapter 3, followed by a discussion of the results in context from studies 1-5.

Chapter 3

A feeling for the future: How does agency in time metaphors relate to feelings? (Studies 3, 4, and 5)

Chapter Summary

To build upon the results from studies 1 and 2, Chapter 3 explores the possibility that affect is likely to relate to time representations. In particular, the relationship between an ego-moving representation and happiness, and the relationship between time-moving representation and anxiety and depression was examined. Study 3 (*N*=199) first sought to establish these correlational relationships, then study 4 (*N*=232) examined whether provoking happiness, anxiety, or sadness would influence how time representations were used. Finally, study 5 (*N*=106) sought to understand if this relationship was bi-directional, that is, if the manipulation of the time representation (ego-, or time-moving) produced more happiness, anxiety and depression. Supporting the hypotheses, results provide bidirectional evidence for an ego-moving representation of time with happiness eliciting more agentic control, and evidence for a time-moving passivity associated with emotional experiences of anxiety and depression. This bidirectional relationship suggests that our representation of time is malleable, and therefore current emotional experiences may change through modification of time representations.

When we imagine events we think will be positive (e.g., a wedding), we tend to experience happiness or excitement (and feel more in control); if we think the event may be negative (e.g., a divorce), we experience apprehension or anxiety (and sense a passivity or loss of agency) (e.g. Beck, Rush, Shaw, & Emery, 1979; Gottlib & Cane, 1989; MacLeod, & Conway, 2005). Approach motivations involve the activation of goal-directed, engaging behaviour, whereas avoidance motivations involve inhibited, passive avoidant behaviour (Higgins, 1997). Positive affect is typically associated with approach motivations (ego-moving) and negative affect associated with avoidance motivations (time-moving) (e.g. Krieglmeyer, *et al*, 2010; Margolies & Crawford, 2008). However, anger has been found to also involve ego-moving motivations (Hauser, Carter, & Meier, 2009). Further, Ruscher (2011) demonstrated that when primed to adopt an ego-moving representation, participants were more likely to forecast shorter grieving periods in others in comparison to the time-moving representation. Ruscher's (2011) research investigated the perception of emotions as a function of time metaphors in others, thus to extend this research the present series of studies explore how ego- and time-moving perspectives are related to the affect experienced by the individual.

STUDY 3

In this study, it was hypothesised that high self-reported happiness would be associated with a higher likelihood of adopting an ego-moving representation of time, and that anxiety and depression would be represented by a higher likelihood of adopting a time-moving representation of time.

Method

Participants

Participants were 71 male and 128 female university undergraduate students with an average age of 18.80 (SD=2.42) years.

Materials and Procedure

Participants first answered the ambiguous time question (McGlone & Harding, 1998) and then completed a series of questionnaires. First, participants completed Hills and Argyle's (2002) Oxford Happiness Questionnaire (OHQ). The OHQ (Appendix 3A) is a measure of happiness and general wellbeing that can be used across many demographics and consists of 29 items to which participants respond on a 6 point scale (α=.92). Next, participants completed Spielberger, Gorsuch and Lushene's (1970) State-Trait Anxiety Inventory (STAI). The STAI (Appendix 3B) includes 2 subscales that examine anxiety as a trait and a state (α=.90). It consists of 40 items or statements about how the participant may be feeling at the time of answering the questionnaire and in general. Finally, participants completed Beck, Rush, Shaw, and Emery's (1979) Beck Depression Inventory (BDI). The BDI consists of 21 items which assesses depression in

adolescents and adults. The total score signifies level of depression ranging from normal to severely depressed. However, Item 9 (suicidal thoughts) was removed as this study is using a non-clinical sample (α=.84; Appendix 3C).

Ethical Considerations

The present study was approved by the University of Portsmouth and the Research and Ethics Committee at Teesside University. As previously stated, Item 9 of the BDI was removed as this study used a non-clinical sample. All informed consent forms (Appendix 3D) were kept separate to questionnaires. Although students received 'research participation scheme' credit in exchange for participation, they were informed that they could withdraw at any time. The debriefing form (Appendix 3E) detailed further contact information should they want help or further information about the study.

Results and Discussion

As hypothesised, t-test calculations revealed that participants with an ego-moving representation reported significantly higher scores for happiness than those with time-moving representations (see Table 3.1). Time-moving representation participants reported significantly higher state and trait anxiety scores and depression scores than participants who indicated an ego-moving representation.

Table 3.1

T-test Analyses of McGlone and Harding's (1998) Ambiguous Time Question with Emotional Experiences

	McGlone and Harding's (1998) Ambiguous Time Question						
	Ego-Moving		Time-Moving				
	M	*SD*	*M*	*SD*	*t*	*d*	*p*
Happiness	4.07	.51	3.67	.55	5.29[a]	.75	<.001
State Anxiety	35.87	10.37	48.28	13.01	-7.43[b]	1.05	<.001
Trait Anxiety	41.67	10.06	52.38	12.21	-6.72[c]	.96	<.001
Depression	5.13	6.03	8.87	6.77	-4.03[d]	.58	<.001

[a]*df* = 195. [b]*df*= 194. [c]*df*= 192. [d]*df*= 193.

Study 3 provided initial evidence of a link between the emotional experiences of happiness, anxiety, and depression with time representation. However, these correlational results do not determine the causal direction. That is, whether emotionally experiencing happiness, anxiety and/or depression effects time representation, and whether time representation affects emotional experiences of happiness, anxiety and/or depression. These directional relationships are explored in studies 4 and 5.

STUDY 4

It was hypothesised that a happiness emotion-producing condition (rather than an emotionally-neutral condition) would evoke an ego-moving time representation, and that anxiety and depression emotion-producing conditions (rather than emotionally-neutral conditions) would evoke time-moving representations of time.

Method

Participants

Two hundred and thirty two university undergraduate students (91 males; 141 females) with an average age of 20.92 (SD=5.54) years took part in study 4 for research participation credit.

Materials and Procedure

Participants were randomly assigned to either one of three emotion-producing conditions (Happiness-Induced; Anxiety-Induced; Sadness-Induced) or to one of the three equivalent conditions (Happiness-Non-Induced; Anxiety-Non-Induced; Sadness-Non-Induced). In the emotion 'Induced' conditions, participants first watched a related film clip (see Appendix 3F for film clip links) then read the related scenario in full with the parts in brackets included. Participants in the three equivalent 'Non-Induced' emotion conditions did not view any film clips, thus only read the related scenario but without the parts in brackets. Both the film clip and the extended text were used in the 'Induced' conditions to maximise the induction of the emotion to ensure successful manipulation of the emotion (see Lench, Flores, & Bench, 2011).

In the Happiness-Induced condition, participants first viewed a comedy television clip from the popular television show 'Mock the Week', which lasted 3 minutes and 51 seconds. Next, the scenario read: "You have planned to meet your friend on Wednesday [and your friend is going to treat you to a fun filled day doing all of your favourite things. You love spending time with this friend as you always have a great time]. Your friend has rescheduled meeting you, and moved the meeting forward two days".

In the Anxiety-Induced condition, the clip consisted of an excerpt from the high-adrenaline tale 'Vertical Limit' (2000). The clip is often used in emotion research to successfully induce feelings of anxiety (e.g. Gino, Wood, Schweitzer, 2012). The clip lasted 4 minutes and 28 seconds. Next, the scenario read: "You have been asked to attend a meeting with the head of the department here at the University next Wednesday [but you are not sure why you have been asked to meet with the head of the department but you get the feeling that you are in some sort of trouble, and you feel anxious about meeting the head of the department]. The meeting has been rescheduled and moved forward two days".

Finally, in the 'Sadness-Induced condition, the clip consisted of an excerpt of a 911 Operator on the telephone with someone trapped on the 105th floor of one of the Twin Towers after a plane hit the Twin Towers in New York on 11th September 2001. The clip lasted for 3 minutes and 55 seconds. Then, the scenario read: "You have planned to meet with your ex-partner next Wednesday whom you split up with 3 weeks ago in order to get your things back that you had left at their house. [Your ex left you 3 weeks ago and you are still deeply in love with them, but you know that your ex wants

nothing to do with you anymore, and you know that you are going to feel quite depressed after having met with them again]. Your ex has had to move meeting up with you forward two days".

All participants then answered McGlone and Harding's (1998) Ambiguous Time Question and then the Margolies and Crawford (2008) approach question as described in the previous studies. Finally, to ensure participants were successfully 'induced' into the emotional state required, participants were asked to rate their emotional state at that present moment using a 7 point rating scale (with 1 being least and 7 being the most) assessing how happy they were in the 'Happiness' conditions; how anxious in the 'Anxiety' conditions, or how sad in the 'Sadness' conditions. Those in the 'Induced' conditions who scored below 4 on the rating scale (i.e., low happiness, anxiety or depression) were excluded from subsequent analyses as the manipulation had not worked.

Ethical Considerations

The present study was approved by the Research and Ethics Committee at both the University of Portsmouth and at Teesside University. As before, the study was conducted in accordance with the British Psychological Society ethical guidelines. Participants completed the informed consent form (Appendix 3G) and given a debrief sheet (Appendix 3H) to take away with them.

Results and Discussion

Following data screening and to first check that the manipulation of the induced conditions were significantly different from the non-induced conditions, t-test analyses were performed. As Table 3.2 displays, participants in the Emotion-Induced conditions rated significantly higher for each emotion than those who were in the equivalent Non-Induced conditions, thus manipulation was successful. However, it should be noted that in the Happiness conditions, although the difference is significant, the means are remarkably close as the non-induced participants were generally very happy.

Table 3.2

T-test analyses for the manipulation of emotional experiences

	Emotion Induced		Emotion Non-Induced				
	M	*SD*	*M*	*SD*	*t*	*d*	*p*
Happiness	5.34	.96	4.96	1.29	-2.23[a]	.33	.027
Anxiety	5.81	1.16	2.83	1.58	-13.30[b]	2.15	<.001
Depression	5.76	1.12	2.84	1.86	-11.82[c]	1.90	<.001

[a]*df*=173. [b]*df* = 135. [c]*df*= 136.

Second, chi-square analyses were performed to determine whether events (i.e. Induced or Non-Induced) were associated with McGlone and Harding's (1998) ambiguous time question (which day is the event now). The Happiness-Induced group reported significantly more ego-moving representations (64.6%) compared to that of Happiness Non-Induced group (39.2%), χ^2 1 (N=77) = 11.44, *p*= .001. The Anxiety-Induced group reported significantly more time-moving representations (69.0%)

compared to that of Anxiety Non-Induced group (18.6%), χ^2 1 (N=78) = 48.27, p <.001. The Sadness-Induced group also reported significantly more time-moving representations (72.0%) compared to that of Sadness Non-Induced group (38.2%), χ^2 1 (N=77) = 19.76, p <.001.

Finally, chi-square analyses were performed to determine whether events (i.e. induced or not induced) were associated with the Margolies and Crawford (2008) approach question (I am approaching the event versus the event is approaching me). The Anxiety-Induced group were significantly more likely to report that the event was approaching them (59.5%) compared to the Anxiety Non-Induced group (27.5%), χ^2 1 (N=78) = 19.76, p <.001. Also, Sadness-Induced group reported significantly more that the event was approaching them (54.7%) in comparison to the Sadness Non-Induced group (35.3%), χ^2 1 (N=77) = 6.60, p=.010. However, in the Happiness-Induced condition 74.0% of participants responded that they were approaching the event whereas they were unexpectedly outperformed by the 91.2% of the Non-Induced condition who reported they were approaching the event, χ^2 1 (N=77) = 10.04, p=.002.

The current results support the hypothesis that a happiness emotion-producing condition (rather than the emotionally-neutral condition) would evoke approach motivation with an ego-moving representation in relation the McGlone and Harding (1998) question (what day is the event taking place now). However, it seems that the manipulation did not affect answers for the Margolies and Crawford (2008) question (I am approaching the event versus the event is approaching me). One potential confounding variable which may lead to differences in representations of time is the valence of the scenarios. That is, meeting the head of department, meeting an ex, and

meeting a friend are different in intrinsic attractiveness or aversiveness. Indeed, 60% of those meeting the head of the department, 45% of those meeting an ex partner, but only 18% of those meeting their friend felt that the event was approaching them. Thus, groups may wish to minimise the distance between 'now' and the happy event in the future, as the event will elicit happy, positive emotions, and it may be the event valence itself that promotes the feeling of approaching it.

The results do support the hypotheses that the anxiety and sadness emotion-producing conditions (rather than the emotionally-neutral conditions) would evoke a time-moving passivity. Participants in the Anxiety-Induced and the Sadness-Induced conditions reported more time-moving representations (signified with a 'Monday' response) and also reported that the event was approaching them. Participants therefore may perceive that they have less agentic control over negative emotional events. Perhaps it is preferable as then responsibility for the event is seen as being outside of personal control. Study 4 revealed that emotional experiences can effect time representation, but the question still remains as to whether time representation can affect emotional experiences. This relationship is examined in study 5.

STUDY 5

In this study the reverse causal directional relationship was investigated. Participants were primed to either adopt an ego-moving or a time-moving representation of time, and then self-reported happiness, anxiety, and sadness/depression was measured. An ego-moving representation of time should activate a general approach motivation (Margolies & Crawford, 2008), and thus grounded in more perceived agentic control, underlying positive emotions such as happiness. In contrast, a time-moving representation should activate more passivity, which underlie negative emotions such as anxiety and/or depression. Thus, it was hypothesised that participants who completed an ego-moving scheduling task would report higher levels of happiness. It was also hypothesised that participants who completed a time-moving scheduling task would report higher levels of anxiety or depression.

Method

Participants

Participants were 106 undergraduate university students (34 males, 72 females) with a mean age of 21.08 (SD=4.15) years.

Materials and Procedure

Participants were randomly assigned to either the ego-moving scheduling task or the time-moving scheduling task. Participants were informed that they would be completing a task in which they would be moving rescheduled events to different days of the week. The events that participants were to reschedule were those developed by

Hauser *et al*, (2009), who tested these events for valence and found that they did not significantly differ from the neutral scale mid point, although they were slightly above the mean. Thus, the events (appointment, meeting, interview, reception, assignment, session, presentation, event, trip, breakfast, lunch, dinner) are not strongly positive or negative in meaning. Any effect of the scheduling task on happiness, anxiety or depression would be due to the manipulation rather than the valence of these events (see Hauser *et al*, 2009). Participants sat at a desk and were supplied with written instructions and variety of diary pages for them to complete accordingly. Participants were told *"Next [initial day]'s [event] has been moved forward [number of days] days. The [event] is now on [day]. On the diary in front of you, please select [ending day]"*. For participants in the ego-moving scheduling task, the events 'moved forward' on a timeline *away* from the participant, and for participants in the time-moving scheduling task, the events 'moved forward' on a timeline *towards* the participant. After completing the scheduling tasks, participants reported how happy, anxious, or sad/depressed they felt using a scale of 1 to 7 (with 1 being the least and 7 being the most)

Ethical Considerations

Study 5 was approved by the Research and Ethics Committee at Teesside University and the University of Portsmouth. As before, the study was conducted in accordance with the British Psychological Society ethical guidelines. Participants completed the informed consent form (Appendix 3I) and were given a debrief sheet (Appendix 3J) to take away following participation.

Results and Discussion

As shown in Table 3.3, participants who completed the ego-moving scheduling task reported significantly higher scores for self-reported happiness compared to those allocated to the time-moving scheduling task. Participants who completed the time-moving scheduling task reported significantly higher self-reported anxiety and sadness/depression than those allocated to the ego-moving scheduling task.

Table 3.3

T-tests analyses for the manipulation of the representation of time

	Ego-moving Primed		Time-moving Primed				
	M	*SD*	*M*	*SD*	*t*	*d*	*p*
Happiness	4.52	1.45	3.09	1.64	4.73[a]	.92	<.001
Anxiety	2.79	1.18	3.77	1.52	-3.53[b]	.72	.001
Depression	2.02	1.31	3.02	1.54	-3.62[a]	.69	<.001

[a]*df* = 104. [b]*df* = 74.

The results support the hypotheses that an ego-moving representation of time induced higher self-reported happiness and a time-moving representation of time induced higher self-reported anxiety and depression.

Chapter Discussion

The results from studies 3, 4, and 5 provide evidence for an ego-moving representation of time with the positive emotion of happiness, and also provide evidence for a time-moving passivity (and therefore stronger sense of helplessness) with emotional experiences of anxiety and depression. This bidirectional relationship suggests that our representation of time and current emotional experiences can be modified. In being more aware of our representation of time, modifications to it may enable a stronger sense of agentic control, and elicit more positive emotions.

Depending on the habitual use of a specific time perspective, people may spend a great deal of time planning their futures, or living in either a hedonistic or fatalistic present. The future time perspective may involve the exploration of a potentially infinite number of possible futures (Markus & Nurius, 1986). Thus, there is a vast landscape in which we as the agent can 'move'. Further, this may allow for a more positive mood, as whatever is happening right now may, in an infinite number of ways, get better in the future (it may also get worse, but because we can see the 'better' options, we 'move' towards those options). For example, you are fired from your job today, but tomorrow you may find a better job; book the best holiday of your life; meet and fall in love with the person of your dreams; start a hobby that you always wanted to try, or stay in bed. Further, if we want to regulate negative emotion we can construct a positive or idealized past self (McFarland & Buehler, 2012), however, rather than looking to the past, actively engaging in a positive future may have a similar (but perhaps, more productive) emotional effect.

The present time perspectives are restricted to the present moment, so leave little room for the agent to 'move'. However, if we focus on making the most of the moment (i.e., a present hedonist) then some movement is still possible, but not as much. Indeed, whatever event is coming at you in the moment requires you-as-agent to react as often as to respond to it (that is, being more impulsive and less agentic). Further, this may allow for some positive mood but it is more restrictive as the options right now are more restrictive, thus, negative moods become more of a possibility. For example, you are fired from your job today you could punch your boss, or get drunk with your friends. Alternatively, you-as-agent may have given up on trying to respond at all, thus 'stuck in the moment' and now only react and avoid (i.e., a present fatalist). Such hopelessness and helplessness is passive, which paralyses you-as-agent. Further, this restriction increases the possibility of negative mood as you are fully exposed to whatever the situation throws at you. For example, you are fired at work today so you go home without anyone seeing you and cry.

Within a clinical population, van Beek *et al*, (2011) found that those high in Present Fatalism were less conscientious and less extraverted, and that they felt strong negative emotions such as anger, aggression, anxiety and depression. The current results within the present non-clinical samples support that of van Beek *et al*, (2011), as those high in Present Fatalism tend to adopt a more time-moving representation of time and feel like events are approaching them, and in doing so, may experience more negative moods.

Life is uncertain. Each person has the choice to look towards different futures or to focus more exclusively on the present. Further, we can only ever experience emotions

in the present moment, yet we interpret future events and decide how they may make us feel. If we see a future event in a negative way, then we are not motivated to approach that event (e.g. Higgins, 1997). This can leave us feeling stuck, wanting to avoid the event and causing us to experience feelings of helplessness, anxiety, sadness and depression. By modifying the way we cognitively construct the future event, it may be possible to change the way we currently feel now about that future event. This change in the perception of the future event (that is, by feeling either more neutral or more positive about it) may help us to actively strive towards the event. This, in turn, makes it more likely that we can take more actions to obtain positive future consequences and avoid negative future consequences (Zimbardo & Boyd, 1999). In setting ourselves goals, we imagine a positive future end state what we would like to achieve, thus agentically strive towards attempting to successfully achieve our goal, with an ego-moving representation of time. However, as discussed in Chapter 1, we do not always achieve the goals we set ourselves. In failing to succeed, we are faced with the decision of whether to try again, or give up on our goal. Thus, the following Chapter explores how time perspective may play a role in reflecting on past non-achievement of our goals and whether it influences the decision to attempt the goal again in the future.

Chapter 4

Failing time after time: Procrastination, time perspective, and cognitive reappraisal in goal non-achievement (Study 6)

Chapter Summary

This Chapter explored time perspective when thinking about the non-achievement of goals. Participants (*N*=139) first completed a questionnaire regarding their most recent goal failures, how (or if) they had planned to achieve them, then completed Lay's (1986) Procrastination scale, Gross and John's (2003) Emotion Regulation Questionnaire, and items from the ZTPI. Results show those high in Present Fatalism procrastinated significantly more frequently, often only forming the intention to achieve their goal but develop no plans. Further, they were significantly more upset at past failures and tended not to use cognitive reappraisal strategies to enable them to think differently about how to achieve their goal in future attempts. Present Hedonism tended to negatively predict procrastination. Those high in hedonism tended not to be as upset at past non-achievement and tended to use reappraisal strategies to enable them to attempt their goal again. Finally, those high in Future time perspective were significantly less likely to procrastinate, significantly less upset at non-achievement and significantly more likely to use cognitive reappraisal strategies. This study suggests that altering our time perspective could decrease procrastination in the present, increase cognitive reappraisal regarding unsuccessful attempts, and increase our chances of success towards future goal achievement.

The perception of time may play a fundamental role in choosing and pursuing social goals (Carstensen, Issacowitz, & Charles, 1999), but what is less known is how time perspective may play a role in reflecting on non-achievement of our goals and our tendency to procrastinate, and whether it influences the decision to attempt our goal again. A goal has been defined as a cognitively-represented desired end state which can influence both behaviour and emotions (e.g. Custers & Aarts, 2010; Fishbach & Ferguson, 2007). When we decide on our personal goal we must also decide how to achieve it (that is, we create a goal intention). Goal intentions are defined as sets of behavioural instructions we assign ourselves to achieve our desired outcomes (Triandis, 1977). Thus, they can provide us with limited information on the course of action we intend to follow towards goal achievement. However, without more specific planning, intentions may not be sufficient to enable us to achieve our goal, especially if the goal is complex. Thus, we may fail to acknowledge the problems that may arise (and the situations that might best be avoided). For example, we may set ourselves a goal to quit smoking with the goal intention of going 'cold turkey' next weekend and then using nicotine patches after that. However, this does not take into account our birthday party that weekend where many friends will be smoking, nor does it provide us with a strategy for dealing with such 'vulnerable' situations.

Further, avoiding some behaviours and focusing on others requires self-regulation (that is, the discipline to focus on some behaviours and not others, Bandura, 1986). Some goals, such as paying the bills on time, are short term goals that can be achieved in the near future. Long term goals tend to be more complex, such as quitting smoking, and as such require more long term higher self-regulation compared to short

term goals. Such goals also require more strategies as over the longer period of time there are many more opportunities to fail to achieve the on-going goal. Long term, high self-regulation goals are often those that are more important to us, but because their achievement is often in the distant future, maintaining focus may be particularly difficult without a clear plan for what needs doing in the present. Thus, we may procrastinate when it is not clear or it is too difficult to get started in the present moment.

Inefficient self-regulation can often lead to procrastination (e.g. Baumeister, 1997; Ellis & Kraus, 1997; Ferrari, 2001; Ferrari & Diaz-Morales, 2007; Harriot & Ferrari, 1996; Lay, 1990). 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). The present Chapter will explore procrastination from the perspective of an understanding of time. In exploring procrastination and perceptions of time, Jackson, Fritch, Nagasaka, and Pope (2003) found that procrastination was 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'). However, Specter and Ferrari (2000) posited that procrastination involves a negative view of the future (e.g. 'I will probably fail anyway so why bother now'), positively associated with the past, but not associated with the present. Ironically, this combination is more consistent with the Present Fatalistic time perspective. Procrastination may also involve neglecting previous experiences (and in particular past failures) which leads to postponing

behaviours that are required in the present towards goal achievement (e.g. Buehler, Griffin, & McDonald, 1997).

Such mixed research findings beg the question as to how Zimbardo and Boyd's (1999) time perspective may relate to procrastination. An ideal balanced time perspective is thought to involve being moderately high in both the Future and the Present Hedonistic perspectives and low in the Present Fatalistic time perspective (Boniwell & Zimbardo, 2004; Zimbardo & Boyd, 2008). A Present Hedonistic time perspective reflects a 'devil may care' attitude towards life as hedonists are often impulsive, less conscientious, and take risks to prevent life from becoming boring, with an orientation towards immediate pleasure rather than considering future consequences (e.g. Keough, Zimbardo & Boyd, 1999; Wills, Sandy, & Yaeger, 2001; Zimbardo & Boyd, 2008). As Present Hedonism involves actively seeking pleasure in immediate gratification and avoiding tedious tasks, hedonists may procrastinate frequently by indulging in more pleasurable behaviours rather than doing what is required towards achieving their goals (unless the tasks required are enjoyable). A Present Fatalistic time perspective involves more of a helpless and hopeless attitude towards life, as fatalists believe that their lives are controlled by external factors outside of their influence, or that luck pays off better than hard work (e.g. Epel, Bandura, & Zimbardo, 1999; Zimbardo & Boyd, 2008). Those high in Present Fatalism often have a negative view of life with a strong external locus of control, as fatalists believe that nothing they do will make a difference and this passivity is the hallmark of frequent procrastination. The Future time perspective indicates a strong present focus on obtaining future goals and avoiding any negative consequence (Shell & Husman, 2001; Zimbardo & Boyd, 2008).

With such a strong sense of future thinking, those high in the Future time perspective may not procrastinate as present behaviour is often dominated by striving for future goals and rewards.

Whether goals are long or short term, or whether we had a specific plan of how to achieve our goal or just the goal intention, we still sometimes fail to achieve them. Upon failing, we can decide whether to give up on the goal, or whether to attempt to reach it again (either using the same method as before, or using a different strategy). Failure can either undermine or motivate, but what is less known is why people have such different reactions to failure (Diener & Dweck, 1978; Dweck, 2000). Further, failure (i.e. the thwarted desired goal) is likely to be upsetting. If such upset is overwhelming, procrastination and no attempt to re-try to achieve the goal is likely. A natural response to failing to achieve something we wanted to achieve is to be upset, but some people may be more upset than others, and this may be influenced by time perspective. One method of reducing the negative emotional impact of failure is to use cognitive reappraisal. This emotion regulation strategy involves a cognitive change, that is, we change the meaning of the event so that the related emotion also changes (Gross, Richards, & John, 2006). For example, upon failing to quit smoking after trying the cold turkey method, rather than being upset and continuing to smoke, we can use this information to realise that the method we tried was not useful, and explore different methods that are available. Thus, cognitive reappraisal allows us to think differently about past failures and see them as more of a learning experience for example, which can motivate us to try again, envisaging that we will be more successful in our next attempt based on what we have learnt from the previous experience. In cognitively

reappraising past failures (e.g. reflecting on where we went wrong and how this can be rectified through evaluating and adapting our previous methods) we may be able to use this information to promote more successful attempts in the future. However, it is likely that biases towards different time perspectives result in cognitive reappraisal being used differently by each dominant time perspective. Present hedonists may not be as upset at past failures as they attempt to maximise their enjoyment of what is happening now, however they may use cognitive reappraisal strategies to allow them to enhance the present. Present fatalists on the other hand may be very upset at past failures and may not use cognitive reappraisal strategies, as they believe nothing that they do will make a difference. Those with a more future orientation may not be as upset when looking back at past failures (as they are likely to have had previous successes to moderate the distress of failure as this is the 'goal-getting' time perspective). Further, they are more likely to be familiar (if not expert) at cognitive reappraisal as a further means of achieving goals.

The present study explores the role time perspective plays in reflecting on non-achievement of our goals and whether it influences the decision to attempt the goal again in the future. First, it is hypothesised that procrastination would be higher in those with goals that required more long term higher self-regulation compared to those who had set more short term goals requiring less self-regulation. Second, it is hypothesised that procrastination will be higher in those with a goal intention but no plan and they will be more present oriented (compared to those who had a plan). Third, it is hypothesised that procrastination will be higher in the two present time perspectives and that the Future time perspective negatively predicts procrastination. Fourth, it is

hypothesised that cognitive reappraisal and the Future time perspective will be higher in those who are less upset at past failures, for those who would attempt their goal again, and for those who think that they will succeed in future attempts at their goal. Fifth and finally, it is hypothesised that the Future time perspective positively predicts cognitive reappraisal.

Method

Participants

A sample of 139 participants were recruited via an online survey. Ninety eight females and 41 males between the ages of 16 and 63 (M=20.07, SD=10.35) participated.

Materials and Procedure

Participants provided demographic details of gender and age then were asked a series of open ended questions regarding past non achievement of their goals. They first identified a goal that they had recently tried to achieve but have not yet been able to. Next, they were asked how they had planned to achieve their goal, whether they had expected to achieve it, how they felt when they didn't achieve it, whether they will try again and if so what (if anything) they would do differently next time. Next, participants completed the cognitive reappraisal items (α=.79) from the Emotion Regulation Questionnaire (Gross & John, 2003, see Appendix 4A); Lay's (1986) Procrastination scale for use with a non-student population (α=.88, Appendix 4B), and finally the Present Hedonistic (α=.81), Present Fatalistic (α=.72), and Future (α=.77) items from Zimbardo and Boyd's (1999) Zimbardo Time Perspective Inventory (Appendix 2E).

Ethical Considerations

The present study was approved by the Research and Ethics Committee at both the University of Portsmouth. The study was conducted in accordance with the British Psychological Society ethical guidelines. Participants completed the informed consent form (Appendix 4C) and received a debrief sheet following participation (Appendix 4D).

Data Coding

Participant's goals were independently coded as either requiring short term, lower self-regulation that could be achieved in under a week and only require simple behaviours (e.g. pay the bills, return a book to the library) or as requiring more long term, higher self-regulation that take longer and require more complex behaviours (e.g. quit smoking, lose weight). The method the participants described to achieve their goal was independently coded as either no plan (goal intention only, e.g. not smoke) (*n*=52), or having a plan (e.g. join a local support group and speak with GP about NRT options) (*n*=79), with 8 participants not answering this question.

Results

The types of goals that participants identified either related to diet, health and exercise (*n*=53); with trying to quit smoking given its own category (*n*=31); work and/or study goals (*n*=45); saving money (*n*=7) or home improvement (*n*=3). First, 'long term goals' (*n*=72) or 'short term goals' (*n*=49) goals were compared for level of procrastination. Following data screening, a t-test revealed that those who set long term

goals reported significantly more procrastination (M=60.48; SD=13.81) compared to those who set short term goals (M=54.63, SD=10.63; $t(117)= 2.628$, $p= .010$, $d=.57$).

Regarding their method of goal achievement, as shown in Table 4.1, participants with no plan reported significantly higher procrastination scores compared to those with a plan. In examining time perspective, those with no plan scored significantly higher in Present Fatalism compared to those with a plan. There was no significant difference between groups for Present Hedonism. There was, however, a significant difference between the groups for Future time perspective as those with a plan scored significantly higher in Future time perspective compared to those with no plan. Further, 71% of those with no plan were attempting a long-term goal (with 29% attempting a short-term goal), whereas 71% of those with a plan were attempting a short term goal ($\chi^2= 4.24$, $df= 1$, p=.039).

Table 4.1

T-test analyses for the method of goal achievement (plan or no plan) with procrastination and time perspective

	No Plan		Plan				
	M	*SD*	*M*	*SD*	*t*	*p*	*d*
Procrastination	64.04	14.42	54.51	10.47	4.18 [a]	<.001	.75
Present Fatalism	2.94	.51	2.68	.65	2.34 [b]	.002	.50
Present Hedonism	3.42	.74	3.28	.60	-1.47 [c]	.144	
Future	2.84	.58	3.21	.58	-3.25 [d]	<.001	.64

[a] $df = 75$. [b] $df = 114$ [c] $df = 115$ [d] $df = 117$

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To explore if the three time perspectives significantly predicted procrastination a regression analysis was performed. As Table 4.2 displays, the model was significant. Present Fatalism significantly positively predicted procrastination, whereas the Future time perspective significantly negatively predicted procrastination. However, Present Hedonism only tended to negatively predict procrastination.

Tale 4:2

Regression Analyses of Time Perspectives on Procrastination

	Procrastination		
	B	SE	β
Present Fatalism	.916	.164	.396*
Future TP	-.910	.125	-.515*
Present Hedonism	-.188	.097	-.135
R^2	.498		
$F_{3,108}$	34.74*		

*p<.001

In examining how they felt after they failed to achieve their goal, participants were coded as either very upset (n=64) or less upset (n=65). As shown in Table 4.3, those who were very upset were significantly lower on the Future time perspective subscale than those who were less upset. Next, the pattern was reversed for the for Present Fatalism scores. However, there was no significant difference for Present Hedonism scores for those who were very upset and for those who were less upset. Further, 67% of those with an intention only were very upset (with 33% reporting being

less upset), whereas only 39% of those with a plan were very upset (χ^2= 9.42, *df*= 1, *p*=0.002).

Table 4.3

T-test analyses of time perspective scores for those very upset and less upset after failing to achieve their goal

	Very Upset		Less Upset				
	M	*SD*	*M*	*SD*	*t*	*p*	*d*
Future	2.58	.57	3.37	.40	5.75[a]	<.001	1.60
Present Fatalism	2.89	.61	2.68	.63	1.84[b]	.034	.54
Present Hedonism	3.41	.72	3.40	.57	-.88[c]	.930	

[a]*df* = 115. [b]*n* = 120 [c]*df* = 117

For those who would attempt their goal again, 15 stated that they would try the same or a similar approach whereas 114 stated that they would attempt to achieve their goal using a different approach. In examining what method they plan to adopt next time, participants were coded as either having no plan (*n*=58) or some plan (*n*=56). Those who stated they would do nothing different were excluded from analyses due to low number of participants (*n*=15). The method which participants would adopt next time was examined in relation to time perspective. As Table 4.4 displays, those with no plan scored significantly higher on Present Fatalism compared to those with a plan. There was a significant difference for Future time perspective scores, as those with a plan scored significantly higher compared to those with no plan. There was no significant difference between groups for Present Hedonism scores.

Table 4.4

T-test analyses of time perspective scores for those with or without a plan for future attempts at their goal

	No Plan		Plan				
	M	*SD*	*M*	*SD*	*t*	*p*	*d*
Future	2.86	.59	3.30	.58	-3.80[a]	<.001	.75
Present Fatalism	2.98	.57	2.64	.63	3.03[b]	.003	.57
Present Hedonism	3.42	.72	3.40	.57	-.88 [b]	.867	

[a]*df* = 106. [b]*n* = 105

Finally, those with only an intention (no plan) had significantly lower cognitive reappraisal scores (M=16.72, SD=4.57) than those with a plan (M=20.89, SD=3.56), *t*(112)= -5.143, *p*<.001. Further, those who were very upset scored significantly lower on reappraisal (M=17.47, SD=4.95) compared to those who were less upset (M=21.16, SD=4.05), *t*(112)=4.46, *p* <.001, *d*=.81. To explore whether the three time perspectives significantly predicted cognitive reappraisal, a regression analysis was performed. As shown in Table 4.5, the model was significant. The Future time perspective and Present Hedonism significantly positively predicted reappraisal. Present Fatalism did not significantly predict reappraisal

Table 4.5

Regression Analyses of Time Perspectives on Cognitive Reappraisal

	Cognitive Reappraisal		
	B	SE	β
Future TP	.363	.052	.548*
Present Hedonism	.140	.041	.269*
Present Fatalism	-.072	.068	-.084
R^2	.370		
$F_{3,108}$	20.51*		

*p<.001

Chapter Discussion

The main aim of the present study was to explore how time perspective is involved in reflecting upon our non-achievement of the goals we set ourselves, how it may predict procrastination behaviour and also 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 perhaps 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. Planning in itself is evidence of future thinking that is rooted in the present, thus those high in future orientation are perhaps better prepared for any obstacles that may stand in our way. For example, 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, which should make planning more important, however, because the goal is so large perhaps it is much more difficult to know where to start which prevents a basic plan being formulated. Thus, perhaps the problem in the first instance is not the lack of planning but that smaller goals should first be formulated.

Not surprisingly, procrastination was found to be positively predicted by Present Fatalism and those high in Present Fatalism were also more likely to have no plan. Indeed, why plan if you feel hopeless about the goal (Keough, Zimbardo & Boyd, 1999; Zimbardo & Boyd, 2008) or that you have so little control over the future that there is no point. There was no significant effect for present hedonists, similar to the findings of Specter and Ferrari (2000). However, this may reflect their impulsive nature (sometimes they plan, sometimes they don't) rather than an irrelevance of this time perspective. Finally as predicted, the Future time perspective negatively predicted procrastination. Thus, those with a more future orientation may envisage their end desired state and recognise the steps that need to be taken towards that goal, decreasing the likelihood of indulging in behaviours that are unrelated to the goal.

Upon failing to achieve our goal we have the decision to make over whether to try again or give up, and if we are very upset at failing then we may not want to attempt our goal again (for risk of further pain should we again fail) or we may think that we are unable to achieve it. What was interesting in the present study was that how upset participants were related to how highly they also scored on time perspective. Those who were most upset scored highly in Present Fatalism, whereas those high in Future time perspective were less upset (there were no significant differences for Present Hedonism). This is interesting as it could be considered that as fatalists expect to have

little control over the future they may have expected to fail. Indeed, they were the most upset. Further, as those high in the Future time perspective are experts at goal getting and goal setting, it would seem reasonable to expect them to be very upset and use such emotion to motivate further change, yet they were less upset. One possible reason may be indicated by the cognitive reappraisal results. Fatalists did not make use of cognitive reappraisal to the same extent as hedonists or those high in the Future time perspective. This may have meant significantly more rumination and such constant dwelling on a negative past is likely to increase distress. Indeed, the next chapter will explore the role of the Past Negative time perspective and goal achievement. Further, those with a more Future time perspective 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. Cognitive reappraisal was also significantly higher for those with a plan of how they will attempt their goal next time Thus, 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).

The findings in study 6 suggest that Present Hedonism may not be a useful time perspective when exploring failure to attain goals. However, those high in Present Fatalism may frequently procrastinate, perhaps because they are attempting larger goals with no plan of how to achieve them and therefore do not know what behaviours they need to perform or avoid towards achieving their goal. Present fatalists may be more upset at their past failures, perhaps because they do not use cognitive reappraisal strategies to change the way they think about their previous attempts, possibly due to

their high external locus of control (Zimbardo & Boyd, 2008). On the other hand, those high in the Future time perspective may not procrastinate as frequently as they have more specific (and smaller) goals and plans as to how they want to achieve their goal. It is interesting (but perhaps worrying) to note that most of the goals that participants 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 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, the following Chapter first explores time perspective as a predictor of self-efficacy towards successful goal achievement, then examines whether a time perspective intervention can increase our chances of achieving our goals by increasing our personal-efficacy.

Chapter 5

Using our understanding of time to increase self-efficacy towards goal achievement (Studies 7 and 8)

Chapter Summary

This Chapter reports two studies that explore whether focussing on different time perspectives may help us to successfully achieve the goals we set. In study 7, 162 participants identified a goal that they wished to achieve in the next week, then completed a series of questionnaires including the General Self Efficacy (GSE) Scale (Schwarzer & Jerusalem, 1995); Schwarzer, Diehl, and Schmitz's (1999) Self Regulation Scale (SRS); and the full 56-item ZTPI (Zimbardo &Boyd, 1999). A week later, participants were asked if they had achieved their goal. For those who had, the Past Positive and Future time perspectives were found to positively predict self-efficacy, whereas Present Fatalism negatively predicted self-efficacy. Study 8 then examined whether consciously encouraging a focus on past and future time perspectives could promote successful goal achievement. Seventy-six participants were assigned to one of four writing conditions (general plan; past focused; future focused; both past and future focused). Supporting the hypotheses, results revealed that self-efficacy towards successful goal achievement can increase through writing with a focus on both a positive past and a projective positive future.

Research has identified individual differences in expectancies about future outcomes and attainment, with a focus on future orientated thinking promoting more successful goal achievement (e.g. Aspinwall, 2005; Snyder, 1994). However, there is very little research examining how individual time perspective influences self-efficacy, self-regulation, and goal achievement. Given that people devote different amounts of cognitive activity to their past, present or future (Zimbardo & Boyd, 1999), how we focus on different time perspectives may help us successfully achieve the goals we set. Thus, the present Chapter reports two studies that are the first to explore the relevancy of time perspective in relation to goal achievement. First, study 7 explored time perspective as a predictor of levels of self-efficacy and self-regulation towards goal achievement. Second, study 8 explored whether consciously reflecting on the Past and Future time perspectives (that may not normally be used to determine self-efficacy) can increase successful goal achievement.

As discussed in the previous chapter, goal achievement requires self-regulation and one aspect of self-regulation is self-efficacy (that is, do we think we have the skills to achieve our goal, Bandura, 1986). Self-efficacy affects goal intention formation (e.g. we pursue goals that we think we are capable of achieving) and our persistence in striving to achieve our goal (e.g. we maintain that pursuit when things go wrong if we believe that we can be successful eventually). What we have learned in the past can impact on what goals we pursue in the future (e.g. Cartensen, Issacowitz, & Charles, 1999; Markus & Nurius, 1986; Oyserman & James, 2009). Self-efficacy increases when we learn from our past and use that information to better manage ourselves in the

present and in the future. Those who have lower self-efficacy beliefs about achieving their goals have been found to be less likely to form behavioural intentions (e.g. Ajzen, 1985), whereas those with higher self-efficacy tend to themselves set higher goals (Donovan & Hafsteinsson, 2006).

However, there is a difference between having positive expectancies towards achieving a goal (e.g. if I walk everyday I will get fitter) and positive fantasies about goal achievement (e.g. I will get fit when I win the lottery and can afford a personal trainer). Positive fantasies often involve imagining achieving our goals with ease and simplicity and do not take into account the past, and are therefore often not-as-achievable goals (Klinger, 1990; Singer, 1966). One reason the goal is not-as-achievable is that we may underestimate the effort required and so may give up as soon as we come to an obstacle when moving towards the goal (we may also prefer the fantasy in our heads rather than doing any work in our lives). In contrast, positive expectations about a desired future often involve being realistic about the work we need to do based on our past experience which often involves a higher perceived self-efficacy towards achieving our goals (e.g. Bandura, 1977; Mischel, 1973). Thus, these two modes of operating have different implications for motivation, effort and actions we must perform (Oettingen & Mayer, 2002).

Depending on the habitual use of a specific time perspective (Zimbardo & Boyd, 1999), people may spend a great deal of time reminiscing or ruminating about their pasts, living in either a hedonistic or fatalistic present, or planning their futures (or some combination of these). The Past Positive time perspective involves a focus on past successes, so reflecting on previous goal achievement(s) may increase self-efficacy by

boosting self-regulatory behaviour. However if we are constantly focusing on past successes we may not be focusing on present opportunities, so too much past focus may not be helpful (e.g. an obsession with 'Glory Days'), even if it is positive. Conversely, the Past Negative time perspective may undermine self-efficacy, limiting self-regulatory behaviour. This is because all that is seen is previous failure. Unless this failure is seen as a learning experience that can inform the present, a negative past focus can rapidly reduce any sense of competency (e.g. a constant focus on past humiliating incidents). As discussed in Chapter 2, the present time perspectives (Hedonism and Fatalism) are restricted to the present moment, thus often leave little room for agentic movement. By focussing on making the most of the moment (i.e., a Present Hedonist) then some movement is still possible as an attentional focus on Present Hedonism involves actively seeking pleasure in immediate gratification and avoiding activities that require tedious tasks, but this may result in less self-regulatory behaviour towards future goals. However, it may require some self-regulation to achieve immediate gratification, but little self-regulation and immediate gratification in fantasizing about an 'easy' future that is obtained without too much (or any) work.

Alternatively, there are those who are 'stuck in the moment' and often only react and avoid (i.e., a Present Fatalist). Such hopelessness and helplessness is passive, and those high in Present Fatalism tend to have a strong external locus of control, believing that nothing that they do will make a difference, suggesting a decrease in (or lack of) self-efficacy. Of all the time perspectives, this is the most likely to disable any sense of goal achievement partly because there is little proactive learning, as fatalists see little point as it is 'out of their control anyway'. Thus, Fatalists may be significantly less

likely to attempt goal setting on a regular basis. Finally, the Future time perspective can involve the exploration of a potentially infinite number of possible futures (Markus & Nurius, 1986). Thus, there is a vast landscape in which we can agentically 'move' towards achieving our goals. However, as the goals we actually pursue are often determined from our past learnings and successes, the field of type of goal narrows. By its very nature, the Future time perspective is suggestive of behaviour being dominated by a striving for future goals and rewards (e.g. Zimbardo & Boyd, 1999). Those high in the Future time perspective may have more impulse control, are more conscientious, and plan more (e.g. Zimbardo & Boyd, 2008), thus the Future time perspective indicates a strong present focus on obtaining future goals and avoiding any negative consequences which may increase self-efficacy by enhancing self-regulation.

Boniwell and Zimbardo (2004) suggested that in relation to wellbeing, an ideal time perspective includes being high in the Past Positive perspective, fairly high in both the Future and Present Hedonistic perspectives, and low in Past Negative and Present Fatalistic perspectives. Thus, those with a more Balanced Time Perspective may have higher self-efficacy and may achieve their goals more than those with an 'unbalanced' time perspective. More specifically, it seems reasonable that being high in the Future time perspective would increase self-efficacy towards goal achievement but it is unlikely that people can plan for the future without using past information. Thus, people who score high in the Future time perspective may learn from their pasts to create a more positive future, and therefore also score high in the Past Positive time perspective. Boniwell and Zimbardo (2004) suggest that we can change our patterns of attentional time perspective focus, thus we can choose to focus on our past successes or future

prospects. If the Past Positive and the Future time perspectives predict higher self-efficacy to promote goal achievement, we may be able to increase self-efficacy by boosting one's focus on Past Positive and Future time perspectives.

The present Chapter reports two studies that explore how using time related information may increase self-efficacy towards goal achievement. First, the five different time perspectives and self-regulation are explored as predictors of self-efficacy towards goal achievement. Then, study 8 explores how altering our time perspective may increase self-efficacy towards successful goal achievement.

STUDY 7

The way we frame our goals (as either achievable or not-as-achievable) is likely to influence whether we achieve our goals (e.g. Oettingen & Mayer, 2002). Thus, study 7 first examines whether setting achievable or not-as achievable goals promotes goal achievement. Next, it is hypothesised that those with a Balanced Time Perspective (scoring high in the Past Positive time perspective, moderately high in the Present Hedonistic and Future time perspectives, and low in the Past Negative and Present Fatalistic time perspective) would achieve their goal and score higher in self-efficacy. Then, it is hypothesised that those who achieve their goal will score higher in self-efficacy, self-regulation, and the past positive and future time perspectives. Finally, the five time perspectives (Zimbardo & Boyd, 1999) are explored in relation to self-efficacy. It is hypothesised that self-regulation, the Past Positive and Future time perspectives positively predict self-efficacy-towards goal achievement.

Method

Participants

Undergraduate students were invited to take part as students working within an academic year are often required to make both short and long term decisions and plan for both short term and long term goals. Thus, 119 female and 43 male undergraduate students with an average age of 19.98 (SD = 4.88) years participated for research participation credit.

Materials and Procedure

First, participants identified a goal that they wished to achieve in the next 7 days, and were also invited to write a plan about how they may achieve their specified goal. Participants identified their goals in either 'achievable' or 'not-as-achievable' ways (as coded by two independent coders). Next, participants completed a questionnaire containing Schwarzer and Jerusalem's (1995) General Self Efficacy (GSE) Scale; (Appendix 5A) Schwarzer, Diehl, and Schmitz's (1999) Self Regulation Scale (SRS, Appendix 5B); and finally Zimbardo and Boyd's (1999) full 56-item ZTPI (Appendix 5C). The GSE Scale consists of 10 items in which participants respond using a 4 point scale assessing whether the statements predicting coping with daily hassles are characteristic/true of them (α= .71). The SRS refers to post intentional regulation when pursuing goals and consists of 10 items in which participants respond using a 4 point scale (α= .76). The full 56-item ZTPI, incorporating the Past Positive (α= .69); Past Negative (α= .66); Present Hedonism (α= .81); Present Fatalism (α= .71); and Future orientation (α= .76) was then administered. Seven days after the completion of the

questionnaire, participants were asked to report whether or not they achieved their set goal.

Ethical Considerations

The present study was approved by both the Psychology Department Ethics Committee at the University of Portsmouth and the Research and Ethics Committee at Teesside University. The study was conducted in accordance with the British Psychological Society ethical guidelines and there was no deception involved in this study. Confidentiality was ensured by using anonymous participant numbers as identifiers on the questionnaire, and all informed consent forms (Appendix 5D) were kept separate to the questionnaires. The debriefing form (Appendix 5E) also detailed further contact information should they want help or further information about the study.

Data Coding

The goals that participants wanted to achieve in the next 7 days were independently coded as either 'achievable' or 'not-as-achievable' in nature. For example, "return library books" was coded as an achievable goal, whereas "get a paid job" was coded as not-as-achievable.

Results

First, 40.2% (*n*=65) participants achieved their goal and 59.8% (*n*=97) participants did not achieve their goal. Eighty five (52.5%) participants identified their goals in achievable ways, 77 did not (47.5%). Of those who identified achievable goals, significantly more (69.4%; *n*=59) actually achieved their goal compared to 7.8% (*n*=6) who reported a not- so- achievable goal. Only 15.4 % of participants wrote a plan for their goal (*n*=25). However, 100% of those who wrote a plan achieved their goal compared to the 29.2% of those who achieved their goal without writing a plan, χ^2 1 (N=162) = 44.12, adjusted residual = 6.6, p <.001.

Second, a series of t-tests were conducted following data screening to compare those who achieved their goal and those who did not (see Table 5.1). Those who achieved their goal scored significantly higher on self-efficacy, self-regulation, and the Future time perspective compared to those who did not achieve their goal. Those who did not achieve their goal scored higher in the Present Hedonist time perspective[2]. There were no significant differences between the Past time perspectives or the Present Fatalistic time perspective.

[2] There was a significant multivariate effect, $F(4,154)=61.85$, $p<0.0001$, $\Lambda=0.384$, $\eta^2=0.616$

Table 5.1

T-test analyses for self-efficacy, self-regulation, and time perspective for those who did and did not achieve their goal

	Goal Achieved						
	Yes		No				
	M	*SD*	*M*	*SD*	*t*	*p*	*d*
Self-Efficacy	33.25	2.77	26.64	2.57	15.57[a]	<.001	1.72
Self-Regulation	28.12	2.78	25.36	2.68	6.92[b]	<.001	1.01
Future TP	3.39	.38	3.07	.48	4.49[a]	<.001	.74
Present Hedonism	3.28	.60	3.57	.53	5.19[a]	.002	.53
Present Fatalism	2.57	1.03	2.79	.61	-1.72[a]	.087	
Past Positive	3.40	1.06	3.25	.51	1.10[b]	.271	
Past Negative	2.99	.75	3.06	.67	-.60[a]	.545	

[a]*df* = 160. [b]*n* = 157

Next, participants were coded as either having a 'Balanced' or 'Unbalanced' time perspective, in accord with the optimally Balanced Time Perspective as proposed by Boniwell and Zimbardo (2004). A chi-square analysis was performed to examine Balanced Time Perspective and goal achievement. Participants (64.6%, *n*=42) with a Balanced Time Perspective were significantly more likely to have achieved their goal whereas 35.4% (*n*=23) with an Unbalanced Time Perspective achieved their goal. For those who didn't achieve their goal, significantly more (61.9%, *n*=60) had an Unbalanced Time Perspective compared to 38.1% (*n*=37) who had a Balanced Time Perspective ($\chi^2$1 (N=162) = 10.91, p =.001). Then, a t-test revealed that those with a

Balanced Time Perspective scored significantly higher in self-efficacy (M=30.43, SD=4.11) compared to those with an Unbalanced Time Perspective (M=28.21, SD=3.98), *t*(160)=3.47, p=.001).

Finally, to better understand how time perspective and self-regulation predict self-efficacy, two regressions were conducted for those who achieved their goal and those who did not. As Table 5.2 displays, for those who achieved their goal, the model was significant. The positive predictors were self-regulation, the Future Time Perspective, and the Past Positive perspective. Further, the Present Fatalism time perspective negatively predicted self-efficacy For those who did not achieve their goal, the model was also significant. However, there was a significant relationship for Past Negative and Present Fatalism predicting self-efficacy only.

Table 5.2

Multiple regression analyses predicting self-efficacy for those who did and did not achieve their goal

	Self-Efficacy					
	Goal Achieved			Goal Not Achieved		
	B	SE	β	B	SE	β
Self-Regulation	.422	.106	.423**	.153	.093	.130
Future TP	.211	.066	.383*	.014	.040	.035
Past Negative	-.028	.039	-.077	-.158	.037	-4.17**
Past Positive	.071	.033	.243*	.056	.054	.102
Present Hedonistic	.026	.040	.085	-.004	.036	-.012
Present Fatalistic	-.071	.033	-.239*	-.113	.053	-.247*
R^2	.405 [a]			.303 [b]		
F	6.573**			6.169**		

[a]6,64. [b] *6,91*

**p<.005 ** p<.001*

Discussion

These results demonstrate the importance of setting ourselves achievable goals rather than not-as-achievable goals, and that writing a plan may enhance our chances of successful goal achievement, perhaps because it highlights how achievable the goal is, thus the goal can be modified accordingly. The achievable goals were easier goals which require short term self-regulation, and the method to achieving them is relatively simple (for example, 'return books to the library' involves simple tasks such as putting the books in a bag etc). The not-as-achievable goals were harder goals that require more long term self-regulation (for example, 'getting a paid job' involves many more complex tasks which are not as manageable). Further, results show that self-efficacy for those who achieved their goals related to self-regulation; Past Positive; (negatively) Present Fatalistic; and Future time perspective only, which suggests that being realistic about how to achieve our goals by using previous successes towards the desired future can help us achieve what we want to achieve. However, self-efficacy was not related to self-regulation but negatively to Past Negative and Present Fatalistic time perspectives for those who did not achieve their goals suggesting that these time perspectives may undermine efficacy and thus limit self-regulatory behaviour. This is interesting as the two groups did not differ significantly in their scores for the Past time perspectives or the Present Fatalistic time perspective. Thus, it is not that one group is reporting more or less of these time perspectives (for example, more positive past experiences) but rather that they may be using this information differently. This will be explored in study 8.

STUDY 8

Those high in self-efficacy may know what they need to do to achieve their goals by recognising their past successes when they have previously achieved similar goals. Then, by recognising what they do not know (and therefore need to learn) and projecting this information into the future, realistic expectations (achievable goals) are set. However, those low in efficacy may not use this time-related information, and instead set harder goals using unrealistic timescales which may result in setting goals that are not-as-achievable (fantasies). These not-as-achievable goals are often not reached as no concrete plans are made, perhaps because they do not know what is needed to achieve their goal. Thus, the goals we set ourselves may depend on our level of self-efficacy.

Study 7 provided initial evidence of how writing a plan may promote goal achievement. The act of planning itself requires a focus on the future and choosing to write a plan is evidence of future thinking. What is less known is whether writing about the past, the future, or both the past and the future increases goal achievement through self-efficacy by accessing time-related information which may not normally be used to determine self-efficacy. To be able to think about the future, we may need to reflect on and learn from our past performances. Thus, study 8 explores whether writing a general plan (Condition 1), writing a plan with a past focus (Condition 2), a plan with a future focus (Condition 3), or a plan with an integrated past and future focus (Condition 4), will increase self-efficacy towards goal achievement.

First, it is hypothesised that those high in efficacy set 'easier' goals compared to those low in efficacy. Further, in thinking of a goal which we would ideally like to achieve, those high in efficacy may tend to set more 'achievable' (realistic) goals

compared to those low in efficacy who set more 'not-as-achievable' (fantasy) goals. Next, it is hypothesised that those high in both the Past Positive and Future time perspectives would achieve their goals and would score higher on both self-efficacy and self-regulation. Finally, it is hypothesised that those in the integrated past and future focussed plan condition (Condition 4) will increase in self-efficacy, Past Positive and Future time perspective and will be progressing with or will have successfully achieved their goals more than any other group.

Method

Participants

Seventy six undergraduate students (15 males and 61 females) with an average age of 21.59 years (SD=5.89) participated in this study.

Materials and Procedure

The data was collected in two phases. In phase 1, participants first completed Schwarzer and Jerusalem's (1995) GSE Scale as in study 7, and the two past subscales and the future subscale from Zimbardo and Boyd's (1999) ZTPI. Then, participants were asked to outline two goals that they would really like to achieve in the next month (see Appendix 5F). The first should be a goal that participants should easily be able to achieve in the next month, and the second should be a goal that they would really desire to achieve in the next month. For both the 'easy-to-achieve' goal and the desired, 'love-to-achieve' goal, participants were asked to rate on a 7 point scale (from 1 being 'not at all' to 7 being 'highly likely') how likely they thought it was that they would achieve

that goal, and then used a 7 point scale (from 1 being 'not at all' to 7 being 'very much so') to rate how much they thought they had the skills to achieve their goal.

Next, participants were randomly assigned to one of four writing conditions: Condition 1 (general plan); Condition 2 (highlighting past successes in goal achievement); Condition 3 (highlighting time discounting in the future); or Condition 4 (an integration of both past and future focused plan). In Condition 1 (n=19), participants were given the following instructions: 'Much research into goal setting suggests that the best predictor of achieving your goals is if you write out a plan on how you would achieve those goals. Please take a couple of minutes now and write out a plan on how you could achieve each of your two goals'.

In Condition 2 (n=23), the instructions were: 'Often when people are setting goals, they forget how amazing they have been in achieving goals in the past because often we forgot about them once we achieve them and also we forget how many goals we have really achieved. Take a moment now and write down some of the goals that you have achieved in the past, even though at the time it may have been quite hard for you to do so (e.g., how often did you study for exams even though you would much rather be doing something else, or avoided overeating even though you were desperate to pig out, or planned to get all your Christmas shopping done on time and did it). Particularly write about any goals that have some similarity with the two you described above. Finally, much research into goal setting suggests that the best predictor of achieving your goals is if you write out a plan on how you would achieve those goals. Please take a couple of minutes now and write out a plan on how you could achieve each of your two goals.'

In Condition 3 (*n*=14), participants were instructed: 'Often when people are setting goals they know how busy they are now (and have been in the past) but they think they will have more time in the future (hence they put off doing anything towards their goals till they have 'more time'). One way to stop this is to think about your future time as the same as the time you have now. Spend a moment or two now thinking how you can make time to achieve your two goals above but imagine that you will be as busy as you have been in the past week. How could you get creative and innovative to make sure these two goals are achieved? Finally, much research into goal setting suggests that the best predictor of achieving your goals is if you write out a plan on how you would achieve those goals. Please take a couple of minutes now and write out a plan on how you could achieve each of your two goals'.

Finally for Condition 4 (*n*=20), participants were given the following instructions: 'Often when people are setting goals, they forget how amazing they have been in achieving goals in the past because often we forgot about them once we achieve them and also we forget how many goals we have really achieved. Take a moment now and write down some of the goals that you have achieved in the past, even though at the time it may have been quite hard for you to do so (e.g., how often did you study for exams even though you would much rather be doing something else, or avoided overeating even though you were desperate to pig out, or planned to get all your Christmas shopping done on time and did it). Particularly write about any goals that have some similarity with the two you described above. Next, people setting goals know how busy they are now (and have been in the past) but they think they will have more time in the future (hence they put off doing anything towards their goals till they

have ‘more time’). One way to stop this is to think about your future time as the same as the time you have now. Spend a moment or two now thinking how you can make time to achieve your two goals above but imagine that you will be as busy as you have been in the past week. How could you get creative and innovative to make sure these two goals are achieved? Finally, much research into goal setting suggests that the best predictor of achieving your goals is if you write out a plan on how you would achieve those goals. Please take a couple of minutes now and write out a plan on how you could achieve each of your two goals.’

One month later, participants were invited back for phase 2. Participants once again completed the GSE (Jerusalem & Schwarzer, 1992) and the past positive, past negative and the future time perspective subscales of the ZTPI (Zimbardo & Boyd, 1999). Next, participants were asked the following: ‘one month ago you wrote about 2 goals. Please complete the following information about these goals’. Participants were asked to identify again their ‘easy-to-achieve’ goal and ‘love-to-achieve’ goal, whether they had a plan, and whether they had achieved each goal, progressing with each goal, or given up on each goal. Then on a 7 point scale (from 1 being ‘not at all’ to 7 being ‘very much so’) they were asked to rate how much they thought they had the skills to achieve first their ‘easy-to-achieve’ goal, then their ‘love-to-achieve’ goal.

Ethical Considerations

The present study was approved by both the Psychology Department Ethics Committee at the University of Portsmouth and the Research and Ethics Committee at Teesside University, and the was conducted in accordance with the British

Psychological Society. Confidentiality was ensured by using anonymous participant numbers as identifiers on the questionnaire, and all informed consent forms (Appendix 5G) were kept separate to the questionnaires. The debriefing form (Appendix 5H) also detailed further contact information should they want help or further information about the study.

Data Coding

Participants 'easy –to-achieve' goals were independently coded as either 'easier' (*n*=38) or 'harder' (*n*=27) in nature. For example, "return book to the library" was coded as an easier goal, whereas "save money" a harder goal. Then, participants 'love-to-achieve' goals were examined for whether they were 'realistic' and thus achievable or 'fantasy' and therefore not-as-achievable goals. Thus, the 'love-to-achieve' goals were independently coded as either 'achievable' (*n*=36) or 'not-as-achievable' (*n*=40) For example, "complete assignment" was coded as an achievable goal whereas "learn Japanese" was coded as a not-as-achievable goal.

Results

All screening for parametric tests were conducted but results are only reported when assumptions were violated. First regarding the easy-to-achieve goals, 30 participants (78.9%) achieved their 'easier' goal and 20 participants (74.1%) achieved their 'harder' goal within a month. Regarding their love-to-achieve goal, 46.2% (*n*=12) achieved their 'achievable' goal whereas 31.7% (*n*=13) achieved their 'not-as-achievable' goal.

Next, as demonstrated in Table 5.3, the regression model examining time perspective in predicting self-efficacy was significant. The Future time perspective and Past Positive time perspective significantly positively predicted self-efficacy. There was a significant negative relationship for the Past Negative time perspective.

Table 5.3

Regression Analyses of Time Perspectives on Self-Efficacy

	Self-Efficacy		
	B	SE	β
Future TP	4.604	.980	.548**
Past Positive	1.925	.705	.307*
Past Negative	-1.232	.530	-.197*
R^2	.603		
$F_{3,65}$	31.40**		

**p<.005 ** p<.001*

Regarding the easy-to-achieve goals, Table 5.4 shows those who set 'easier' goals (*n*=38) rather than 'harder' (*n*=27) goals scored significantly higher self-efficacy scores, Past Positive time perspective scores, and Future time perspective scores. There was no significant difference for Past Negative scores.

Table 5.4

T-test analyses for self-efficacy, self-regulation, and time perspective for 'easy-to-achieve' goals

	Easy-to-achieve goal						
	Easier		Harder				
	M	*SD*	*M*	*SD*	*t*	*p*	*d*
Self-Efficacy	30.90	4.39	26.74	4.37	4.27[a]	<.001	1.72
Past Positive	3.48	.77	2.99	.66	2.87[a]	.006	1.01
Past Negative	3.18	.91	3.49	.66	1.60[b]	.114	
Future TP	3.53	.55	3.11	.52	2.48[a]	.016	.74

[a] $df = 65$. [b] $df = 64$

Overall, in exploring who achieved this 'easy-to-achieve' goal at phase 2, none of the participants in Condition 4 (past and future focused plan) had given up on their goal, and also as Table 5.5 demonstrates, more participants in both Condition 4 and Condition 2 (past focused) achieved this goal. Interestingly, more participants in Condition 1 (general plan) had achieved or were progressing with their goal compared to those in Condition 3 (future focused), suggesting that a positive view of the past, with a positive view of the future, increases successfully achieving an easy-to-achieve goal rather than just the future alone.

Table 5.5

Percentage of 'easy-to-achieve' goals achieved, progressing with, or given up on, across the four conditions

	Goal Achieved		Progressing With		Given Up	
	%	*n*	*%*	*n*	*%*	*n*
General Plan (C1)	57.9	11	26.3	5	15.8	3
Past Focussed (C2)	73.9	17	13.0	3	13.0	3
Future Focused (C3)	50.0	7	35.7	5	14.3	2
Past and Future Focussed (C4)	85.0	17	15.0	3	0.0	0

Next, regarding the love-to-achieve goals, Table 5.6 shows those who set 'achievable' goals (*n*=36) rather than 'not-as-achievable'(*n*=40) goals scored significantly higher self-efficacy scores, Past Positive time perspective scores, and Future time perspective scores. Again, there were no significant differences for Past Negative scores.

Table 5.6

T-test analyses for self-efficacy, self-regulation, and time perspective for 'love-to-achieve' goals

	Love-to-achieve goal						
	Achievable		Not-as-achievable				
	M	*SD*	*M*	*SD*	*t*	*p*	*d*
Self-Efficacy	31.73	3.59	27.51	4.76	3.89[a]	<.001	1.00
Past Positive	3.53	.62	3.09	.81	2.29[b]	.027	.61
Past Negative	3.16	.92	3.50	.66	-1.69[c]	.124	
Future TP	3.54	.48	3.23	.59	2.16[d]	.034	.58

[a]*df* = 67. [b] *df* = 65, [c]*df* = 64. [d]*df* = 66

Overall, in examining who achieved this 'love-to-achieve' goal at phase 2, again none of the participants in Condition 4 had given up on their goal, and as shown in Table 5.7, similar results are obtained to the 'easy-to-achieve' goal in that more participants in both Condition 4 and Condition 2 (past focused) achieved this goal. Again, it appears a positive view of the past combined with the future can increase striving towards or achieving our goals.

Table 5.7

Percentage of 'love-to-achieve' goals achieved, progressing with, or given up on, across the four conditions

	Goal Achieved		Progressing With		Given Up	
	%	*n*	*%*	*n*	*%*	*n*
General Plan (C1)	26.3	5	57.9	11	15.8	3
Past Focussed (C2)	30.4	7	60.9	14	8.7	2
Future Focused (C3)	21.4	3	64.3	9	14.3	2
Past and Future Focussed (C4)	55.0	11	45.0	9	0.0	0

Next, a chi-square analysis was performed to examine those high in both the Past Positive and Future time perspectives (i.e. a Balanced Time Perspective, Boniwell & Zimbardo, 2004) and achievement of each goal. For the 'easy to achieve' goal, 79.5% of participants (*n*=31) with a Balanced Time Perspective achieved their 'easy-to-achieve' goal with 20.5% (*n*=8) not achieving their goal. 75.0% (*n*=18) with an Unbalanced Time Perspective did achieve their goal and 25.0% (*n*=6) did not, however the Chi square was statistically non significant ($\chi^2$1 (N = 63) = .173, p =.677). For the 'love-to-achieve' goal, 40.0% (*n*=16) with a Balanced Time Perspective achieved their goal and 60.0% (*n*=24) did not. 32.2% (*n*=8) with an Unbalanced Time Perspective achieved it, and 68.0% (*n*=17) did not, and again this was not statistically significant ($\chi^2$1 (N = 65) = .423, p =.516). A t-test revealed that those with a Balanced Time Perspective scored significantly higher in self-efficacy (M=32.59, SD=3.37) compared to those with an Unbalanced Time Perspective (M=27.00, SD=3.62), *t*(67)=6.52,

p<.001). However, there was a non significant difference for self-regulation scores for those with a Balanced Time Perspective (M=27.67, SD=3.19) compared to those with an Unbalanced Time Perspective (M=26.59, SD=3.18), $t(65)=1.36$, p=.178).

Finally, as scores were not normally distributed, a Wilcoxon Signed Rank Test was performed to analyze change scores for self-efficacy; Past Positive and the Future time perspectives (see Howell, 2010). Participants in Condition 4 significantly increased in self-efficacy scores (Z =4.14, p <.001), Past Positive scores (Z=5.50, p<.001), and in Future time perspective scores (Z =4.82, p <.001). No other conditions were significant.

Discussion

The results suggest that people high in self-efficacy, with higher Past Positive and Future time perspective scores had either achieved or were still progressing with their goal, and they had set more achievable, realistic goals with a plan. Relating to their 'easy-to-achieve' goals, participants with higher self-efficacy scores at phase 1 tended to set 'easier' goals whereas those with lower self-efficacy scores at phase 1 set 'harder' goals. Relating to the 'love-to-achieve' goals, those low in self-efficacy tended to set more 'not-as-achievable' goals (which are more fantasy) whereas those higher in self-efficacy set more 'achievable', realistic goals. Participants focusing on both the past and the future (Condition 4), were all either still progressing with or had achieved both the 'easy-to-achieve' and the 'love-to-achieve' goal as none had given up. Participants in Condition 2 which is past focused (compared to Condition 3 which is future focused) also had achieved or were still progressing with their goal, which suggests that it may serve to learn from our pasts to create a positive future to boost our

self-efficacy (and thus self-regulatory behaviour in not giving up on the goal) towards goal achievement. Interestingly, for both the 'easy-to-achieve' and the 'love-to-achieve' goals, participants were more likely to have achieved or were still progressing with their goals in comparison to Condition 3, although this difference was not statistically significant.

Participants in Condition 4 (regardless of whether they were high or low in self-efficacy at phase 1) significantly increased in self-efficacy, Past Positive and Future time perspective scores. There were no other significant changes in scores for the other conditions. Not surprisingly, participants in Condition 4 also significantly increased in how much they thought they had the skills to achieve their goal (which is essentially self-efficacy), suggesting that as we become more aware of our past successes and use this information to positively plan for our future goals, we increase our chances to persevere and achieve our goals.

Chapter Discussion

Studies 7 and 8 sought to determine whether time perspective and self-regulation predicts self-efficacy, and whether changing our time perspective by recalling past successes and positively planning for future goals can increase self-efficacy towards goal achievement. Results support the hypotheses in that the Past Positive and Future time perspectives positively predicted self-efficacy and by writing about both a positive past and those future goals can increase the belief that we have the skills to achieve both relatively easy goals and also those goals we would love to achieve. As the Future time perspective involves planning for the future and a striving towards future goals (Zimbardo & Boyd, 2008), then it is hardly surprising that those scoring high in the

Future time perspective achieved their goals more than those lower in the Future time perspective. However, it is interesting that, in relation to goal achievement, by focusing on the past to boost self-efficacy and the future to plan for how to achieve our goals, we can increase our chances further towards successful goal achievement. It appears that we need the past to inform our future, as focusing on the future alone means that we are not recalling or remembering information from our past that may be needed to increase self-efficacy, and thus our chances of success.

In study 7, participants who identified 'achievable' goals achieved their goals, and in study 8, participants who set 'achievable' goals scored higher self-efficacy scores. Previous research suggests that people who have lower self-efficacy beliefs about achieving their goals are less likely to form intentions whereas those higher in self-efficacy set higher goals (e.g. Ajzen, 1985; Donovan & Hafsteinsson, 2006; Pintrich, 2004; Zimmerman & Schunk, 2008). The present results suggest that those higher in self-efficacy set easier, more realistic, achievable goals that they know they can achieve based on their previous successes. Then, they can build upon the successes of these easier, achievable goals to make higher goals, rather than trying to attempt large harder to achieve goals.

As higher self-efficacy promotes goal achievement, then altering our time perspective can be a relatively easy way to increase self-efficacy. Indeed, participants writing with an integrated past and future focus increased in self-efficacy, Past Positive and Future time perspective scores suggesting that by focusing what we have achieved in the past and thinking about managing our future time in the same way we think about our present time can help us to achieve our goals. However, due to a very low sample

size in study 8 and also difficulties in participants writing and setting themselves goals, much more research is required to increase the validity of these results.

Boniwell and Zimbardo (2004) Balanced Time Perspective includes being high in the Past Positive and Future time perspectives. Indeed, in relation to goal achievement in study 7, those with a Balanced Time Perspective were significantly more likely to achieve their goal compared to those with an unbalanced time perspective (who were more likely to not achieve their goal). They also scored higher in self-efficacy. In further examining the five time perspectives, it appears that being high in the Past Positive and the Future time perspective can increase self-efficacy towards goal attainment, whereas being high in the Past Negative and Present Fatalistic results in less goal achievement. Thus, results from study 7 suggest that those high in Present Hedonism did not achieve their goals perhaps as a result of less self-regulation towards goal achievement, as hedonists often actively seeking pleasure in immediate gratification whilst avoiding activities that require tedious tasks. In study 8, there were no statistical differences for those high in the Past Positive and the Future time perspectives for whether they would achieve each goal, but those high in the two time perspectives (Past Positive and Future) did score higher in self-efficacy. As participant numbers were very low in this study, increasing the sample may provide clearer results with regards to the ideal time perspective and goal achievement. Thus, a Balanced Time Perspective may alter depending on the task at hand and the type of goals we set. We are often told to manage our time more effectively in the future. However, the main conclusion from the present research suggests that reflecting on how we successfully

managed our time in the past and how we might adapt those skills for our future might result in greater goal achievement.

Chapter 6

General Discussion

The only 'time' that exists is the 'present', and for us to cope with the present we divide experiences in to past, present and future to put our lives into chronological order. The current thesis demonstrates that people use time perception in a number of different ways, some of which may be more effective than others. Zimbardo and Boyd (1999) argued that time perspective is "an often non-conscious process" (p.1271), and, as such, we are often unaware how we can use it to our advantage. As research in this area is still in its infancy, this thesis uniquely examined how metaphors for time relate to time perspective (Part 1) and how time perspective relate to achieving our goals (Part 2). Each part will now be reviewed in turn.

Part 1 opened exploring the robustness of the designation of ego-moving or time-moving representations of time, particularly with clock and calendric events (study 1). The McGlone and Harding (1998) question was found to be a valid measure of ego- and time-moving representations of time with different metaphors. Then, results from study 2 found that those with an ego-moving representation have higher personal agency and are more future oriented whereas those with a time-moving representation tend to be more present oriented. Indeed, those who felt like they were approaching an event demonstrated higher personal agency and Future time perspective, whereas those who viewed an event as approaching them scored higher in Present Fatalism. This was as predicted. However, in examining whether participants felt like they were approaching

an event or that an event was approaching them, there was no significant difference for those high in Present Hedonism.

The next series of studies (studies 3-5, Chapter 3) explored McGlone and Harding's (1998) ambiguous time metaphor further with the emotional experiences of happiness, anxiety, and sadness/depression. A bi-directional relationship was investigated between the ego-moving representation of time with increased happiness and the time-moving representation with more anxiety and sadness/depression. These results suggest that time perspective can indeed affect our mood. For example, by becoming more ego-moving towards future events, this increases our sense of personal agency and acts to enhance positive mood.

Based on the findings from Part 1, two main issues need further exploring: Language and Event motivations/valance. First, although the ambiguous metaphor was found to be robust, more research is needed before it is established that these findings are based on time representation and not merely a quirk of the English language. For example, would stating that the meeting is 'brought' forward (rather than 'moved' forward) yield similar results? By considering this and by employing the use of other time metaphors in future research, it could be possible to test the therapeutic value of changing our perceptions towards future events. This may provide us with a better understanding of whether people consider themselves to be moving through time or whether they feel that time is moving past them, by either looking to the future or moving towards it. Further, do these findings hold for other languages? Although space /time is universal, there may be language family limits to the universality of the current findings. For example, it may be expected that these results generalise to languages

within the same Indo-European language family as English (e.g. Italian). However, other language families, such as, Sino-Tibetan (e.g. Mandarin) may use alternative constructions of the time/space metaphors that do not produce similar results. Indeed, different cultures 'see' time differently (e.g. de Silva Sinha, Sinha, Sampaio, & Zinken, 2012). For example, Brazilian tribes view the future as behind them (as it is unknown and therefore they cannot see it) and the past as ahead of them (as they can 'see' it and it is known), and as such, the phrase 'moving forward' may suggest reverting to the past.

The metaphor use is not the only aspect of these studies that is culturally biased. In particular, the association between ego-moving, future orientated, high personal agency and happiness may be a particularly English-westernized ideal of a proactive adult. Thus, those conforming to such a 'holy trilogy' of ego-moving, high personal agency and future orientation are likely to be happier as they are obtaining a cultural ideal. Indeed, it would be interesting to explore this aspect further by interviewing adults about how much this trilogy constitutes their 'ideal' self.

The second aspect of event motivations and valance were not explored in the current series of studies but as they do relate to them, they are worth discussing. Approach motivations tend to involve active, goal-directed behaviours whereas avoidance motivations involve inhibited, passive behaviours (Higgins, 1997), and results from study 2 suggest that ego-moving representations of time are associated with higher levels of personal agency whereas time-moving representations involve more passivity. Theorists have typically associated positive emotions with approach motivations and negative emotions with avoidance motivations. However more recently, Hauser *et al* (2009) found that the higher the anger, the more ego-moving one reports. This suggests

that it is not simply that a positive event leads to ego-moving and a negative event leads to the event moving (time-moving representation). Rather, it may be that each emotion in a given context is associated with a certain amount of movement. Indeed, much has been made of the connection between movement and emotion (see McGlone & Pfiester, 2009). This can be seen in the language we use, with specific emotions metaphorically eliciting different types of movement (for example, we 'skip in happiness', 'jump for joy', and 'explode in anger'). Research on fictive motion (e.g. "the road runs down the coast"), suggests that when we hear such phrases, we mentally simulate motion and this leads to ego-moving responses (Matlock, Ramscar & Boroditsky, 2005). Thus, emotions that relate heavily to movement may elicit more ego-moving approaches (and approach motivations) and emotions which are less associated with movement (e.g. 'scared stiff' and being 'really down') may elicit more time-moving approaches. This may be because when the movement is active, we ascribe agency to the person experiencing the emotion as it is them that is moving (e.g. 'exploding with anger' it is the person who is said to be metaphorically exploding). However, other times it is the emotion that has the agency (and the related movement) ascribed to it ('depression descended on me like a thick fog/ darkness'; or the 'black dog of depression visited again'; or for anxiety, 'there are butterflies in my stomach'). Thus, future research may explore whether this is indeed the case. If it is, then it would suggest that there will be some positive emotions that may be time-moving (for example, based on English metaphor use, ecstasy may be one such emotion as in 'being overwhelmed by ecstasy'). Further, it also suggests that some negative emotions may be moderated by reversing (or lessening) the metaphorical movement and future research may find this a fruitful

method of dealing with particularly extreme negative emotions. For instance, anger management may perhaps be improved if anger is perceived as, for example, 'a wave of emotion temporarily splashing over me'. The more 'stationary' negative emotions may also be aided by adding more movement. Indeed, Ruscher (2011) found perceived grief was shortened when more ego-moving (perhaps 'moving on' or 'getting over the loss'). Could depression and anxiety also be shortened if they were to metaphorically (or literally) involve more movement, and, in doing so, would the person experiencing the depression or anxiety feel more agentic? By recognising that our representation of time is state-like (rather than trait-like) we perhaps could become more flexible in modifying the emotional valence towards the future.

Indeed, further research might explore the valence of events in relation to both time representation and to time perspective. Does our preference for a specific time perspective shift when we are faced with high valence events? For example, when highly negative events that we may be held responsible for occur, do we turn to a more fatalistic time perspective? Is the valence (high positive or negative) of the event a better predictor of approach or avoid motivations?

Whilst feeling happy and moving forward sounds like a good state to do things in, what happens when we feel stuck, and unable to move forward? Part 2 began by exploring procrastination and time perspectives (study 6, Chapter 4). Indeed, time perspective was shown to be a good predictor of procrastination. For example, Present Fatalists often only form an intention towards achieving their goals and are more likely to procrastinate. However, those who score highly in the Future time perspective plan more regarding how to achieve their goals. Both the Future time perspective and

(marginally) the Present Hedonistic time perspective negatively predicted procrastination whereas the Present Fatalistic time perspective positively predicted procrastination. As procrastination involves postponing behaviours that are required in the present (e.g. Buehler, Griffin, & McDonald, 1997), Fatalists may view the goals they have set themselves as approaching them, and procrastinate whilst waiting for goals to approach, thinking that nothing they can do will make a difference. In being very upset at previous unsuccessful attempts towards a goal, Fatalists tend not to use cognitively reappraisal strategies (tending not to reflect on where they went wrong and how this can be rectified through evaluating and adapting their previous methods) thus decrease their chances at a more successful attempt in the future.

Present Hedonism only marginally negatively predicted procrastination, and also those high in hedonism were not as upset at previous failures, possibly too busy 'living in the moment' (e.g. Keough, Zimbardo & Boyd, 1999; Wills, Sandy, & Yaeger, 2001; Zimbardo & Boyd, 2008), but they did tend to use reappraisal strategies to enable them to attempt their goal again. This may be situation specific, and future research may consider examining enjoyable and not-so-enjoyable goals to test whether Hedonists are less (or more) likely to procrastinate depending on the nature of their goal. Also, Hedonists may set very different goals to Fatalists (or indeed compared to those scoring high in the other time perspectives) thus future research may also wish to consider the nature of goals and time perspective. Finally, it is also important to note that high Hedonism was categorised as high in this sample. The sample was predominantly students and few actually scored at the top end of this scale. Had they been at the top of the Hedonistic scale, it is unlikely they would have turned up for the experiment (or

indeed, would still be studying at University). Thus a broader sample with higher level of Hedonism should also be explored.

The results from study 6 do suggest that procrastination may involve a more fatalistic attitude towards the goal that is to come (rather than procrastinating due to hedonistically living in the moment). Those high in Future time perspective were significantly less likely to procrastinate. They were also significantly less upset at non-achievement as they use cognitive reappraisal strategies. As the Future time perspective indicates a strong present focus on obtaining future goals and avoiding any negative consequence (e.g. Shell & Husman, 2001; Zimbardo & Boyd, 2008), such a strong sense of future thinking suggests that those high in the Future time perspective do not frequently procrastinate as present behaviour is often dominated by striving for future goals and rewards. One explanation is that those with a future orientation are perhaps more realistic about their future, and do not fool themselves into thinking that they can procrastinate and yet still obtain what they desire. Also, in failing to achieve set goals, it appears that those with a more Future time perspective use reappraisal strategies to aid as a coping mechanism to reduce stress to enable them to attempt their goal again, further demonstrating how time perspective can affect mood.

To further explore the relationship between mood and time perspective, future research might look at the movement towards shortening time in happy moods. For example, the old adage that 'time flies when we are having fun' suggests that positive events or goals involve approach motivations that can cause the perceptual shortening of time (e.g. Gable & Poole, 2012). Often, people perceive that time 'speeds up' when we are involved in pleasant activities, whereas time 'drags' during long periods of distress

or boredom (e.g. Flaherty, 1999). Thus, future research may therefore wish to consider if different time perspectives and an ego-moving representation of time are involved in shortening time perception, which could prolong approach motivated behaviour, thus increasing our chances of achieving our goals.

There is one final issue that is worth commenting on, and that is regulatory fit. As self-regulation refers to the process in which we seek to align ourselves with appropriate goals, our regulatory focus comprises of the needs that we try to satisfy, and the standards of the goals that we are trying to achieve. That is, in regulatory fit theory (Higgins, 1987), certain standards represent our beliefs of our 'ideal' selves (encompassing our hopes, wishes and aspirations) whereas other standards represent our 'ought' selves. Thus, when we bring ourselves into alignment with our ideal selves (achieving our goal) we may feel happier whereas when we fall short of our ideal self (failure to achieve our goal) we experience upset. At first glance it would appear that a Present Fatalistic time perspective may be a result of circumstances in that fatalists may 'fit' better in a sad or depressive state, whereas those who are more future oriented may 'fit' better with an ego-moving representation of time, agentically striving towards achieving their goals. Thus, when there is a match between orientation towards our goal and the method which we adopt towards goal achievement, we may fit more comfortably with ourselves (Higgins, 2005). However, the present thesis has shown that may not be the entire story as if this were the case then the Fatalists in the present samples would not have been so distressed at failing to achieve their goal. Regulatory fit has yet to be explored in relation to failure so this is certainly an area for future development.

In the final two studies (Chapter 5, studies 7 and 8) the influence of time perspective on goal setting was established. In study 7, those who had already achieved their goals scored higher in self-efficacy, self-regulation and the Future time perspective whereas those who did not achieve their goal scored higher in Present Hedonism. Both the Future time perspective and self-regulation positively predicted goal achievement whereas Present Fatalism negatively predicted goal achievement. Finally in study 8, both the Future time perspective and the Past Positive time perspective positively predicted goal achievement, and those scoring high in these time perspectives set more realistic, achievable goals and often made a plan of how to achieve their goal. Study 8 demonstrated how personal efficacy towards successful goal achievement can increase through writing with a focus on both a positive past with a projective positive future.

That writing about the past with the future should have had such a strong effect is perhaps not surprising. There are three aspects that are worth exploring: memory, reminiscing, and temporal direction. First, working memory and long term memory are involved in determining our temporal judgements (e.g. Taatgen, van Rijn, & Anderson, 2007). We often know that our future will not be an exact replication of our past; however, we are often unaware of the extent to which our memory of the past is prone to errors and distortions. From Bartlett's (1932) pioneering ideas to more recent research (e.g. Atance & O'Neill, 2005; Schacter, 2001; Suddendorf & Busby, 2005), it seems clear that memory involves not only our ability to 're-experience' events from the past, but also our ability to imagine, or 'pre-experience' events in the future. Although Bartlett (1932) did not posit that memory is always inaccurate (Ost & Costall, 2002), he suggested that because we live in an ever-changing world, reproductive memory is not

as important as constructive memory. Further, the difference between thought and reality can be large, for example, when we think about the previous day we may remember 20 or 30 things that happened compared to the thousands of things that the brain processed. Thus, our 'past' is our memory of a very small collection of items that we focus on, and we use this to extrapolate into the future. This extrapolation is the ability to mentally simulate hypothetical situations, and we are able to simulate alternative pasts and hypothetical futures to regulate present emotions and goal motivation behaviours (e.g. Szpunar, 2010; Taylor & Schneider, 1989; Tulving, 1983). Future research may wish to explore the therapeutic value of understanding subjective time (and how changing and adapting the focus of past experiences) may be beneficial in helping people to cope with previous events and use this information to create better potential futures.

Second, whilst a full review of reminiscence is beyond the scope of the present thesis, reminiscing about positive past experiences can function to establish and maintain identity (e.g. Erikson, 1963), boost self-esteem (e.g. Lewis, 1971), or create enjoyment and pleasure (e.g. Bryant, Smart, & King, 2005; Hughston & Merriam, 1982; Thornton & Brotchie, 1987), and also of assistance when we try to cope with life's many demands. In setting ourselves goals, it may be possible that a quick trip down memory lane to recall previous successes may increase our belief that we can successfully achieve what we want, and give us information and insight to what steps to take. If "episodic reconstruction is just an adaptive feature of the future planning system" (Suddendorf & Busby, 2003, p.393), remembering past successes may indeed be of use to move us closer to what we want. With the proliferation of phone apps, it

would be most interesting to explore whether a 'reminiscing app' could help people deal with their present and future more effectively by reminding them of their past successes and what they have done well.

Third, Lam and Buehler (2009) suggested that the temporal direction of recalled events can determine how we subjectively experience temporal distance. That is, their research suggests that we feel closer to a past event if we recall a stream of related events in a backwards (from where we are now), reverse chronological direction (rather than working from the past event to the present). This reverse recall is thought to create an impression that relatively little has changed since this past event (and in turn makes us feel closer to that event). Thus, future research may also wish to consider whether recalling past successes in this reverse direction can further increase self-efficacy towards goal achievement. Overall, it seems important to be more aware of how focussing on different time perspectives can function to enhance (or indeed prevent) the effective achievement of our goals.

The goal of the present thesis was to provide a basis for deepening our understanding of the relationships between time perspectives, time representations, emotions and behaviours. As with any research, decisions about methodology are made to best answer the questions posed. Indeed, a strength of the current thesis is that a variety of different measures were (for example, film clips, scenarios, written notes/diary materials etc) were used thus avoiding common method variance. However there are inevitably limitations. First, this thesis predominantly used questionnaires as a method of data collection, and despite the pitfalls of relying extensively on questionnaire research, the findings are interesting. Although Zimbardo and Boyd's

(1999) ZTPI is a reliable and valid measure, the presence of only one 'future' subscale and two 'present' subscales is perhaps questionable. The ZTPI is 'narrow' in that the Future subscale is predominantly positive, whereas the two 'Present' subscales are negative (Hedonism may be enjoyable but it is generally not considered a good way of life). Indeed, the only two perspectives that appear more 'balanced' are the two past perspectives (Past Positive and Past Negative). Further items that distinguish between a 'fantasy' future and more 'realistic expectations' about the future (and perhaps taking into account the consideration of both immediate and more delayed future consequences of behaviour), or items that assess a more 'mindful' present may allow for a deeper understanding of how people may use time to their benefit (or disadvantage). Thus, 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 insights from the past, the resources that are available to us in the present, and an extended future time perspective 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 agency in the present, increasing self-efficacy (and in turn self-regulation) 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. However, to measure most of these issues and develop this research further, questionnaires need to be used in combination with more qualitative research.

Second, the present research focused on quantitative methods only. This allowed for very specific aspects to be measured reliably and efficiently. However, it also results in more limited data. For example, in Chapter 5, participants were asked to after a set period of time to report as to whether they had achieved their goals. Time perspective may indeed change on a daily basis depending on the daily tasks, so future research may consider measuring time perspective frequently over a specific period of time to discover which of the perspectives may be of more use to individuals in completing a variety of tasks (both pleasant and not-so-pleasant). If participants were asked to think about their time perspective more actively on a daily basis (for example by keeping a daily diary) then a qualitative analysis of individual variations in time perspective may provide us with a better understanding of within-person variations. Further, interviewing participants about their time metaphors may also increase the validity of the findings in Part 1. Thus, by broadening the methodologies used, more elaborate conclusions may be drawn about the nature and influence of time representations and time perspective on our emotions and behaviour.

Third and finally, the sample throughout this thesis has focused predominantly on a student population. As already mentioned, it is possible that there was a small range of time perspective scores (for example, the 'Hedonists' were not necessarily very high in Hedonism, nor Fatalists high in Fatalism), thus further research may also consider examining different populations to increase the spectrum of different time perspective scores. Also, in increasing the spectrum, it would be possible to examine age differences. For example, research suggests that as people get older they perceive themselves as having less time 'ahead' of them, thus become less future oriented (e.g. Guy, Rittenburg, & Hawes, 1994; Usunier & Valette-Florence, 2007). Past orientation may also increase with age as the older we become the more previous experiences we have. The reverse may also be true of younger people, and being more aware of our subjective relationship with time may aid development through adolescence. Thus, future research may wish to explore whether chronological age affects the goals we set ourselves and the goals we wish to achieve, and whether indeed the notion of a 'balanced' time perspective is different given chronological age and the tasks at hand.

Despite the inevitable limitations, the studies yielded large effect sizes thus demonstrating the strength of these relationships. One of the strengths of the current research is that it has the potential to form the basis of a large number of future possible directions for the current researcher, some of which have already been mentioned. One such series of studies would be combining the findings of Part 1 and Part 2. The research questions would include: Can the emotions experienced when one has decided to procrastinate (a non ego-moving state) be shifted using time metaphors into a more productive emotional state that encourages working towards the goal? Does using ego-

moving time metaphors increase the likelihood of planning or setting more achievable goals and increase future focus? Does recalling previous times when the desire to avoid a task was high, but procrastination was successfully resisted, increase goal achievement? (And perhaps, Can we easily recall such times?) Does developing a broader range of time perspectives aid their usefulness?

In conclusion, although The Rolling Stones once sang that 'Time is on my side', we are rarely consciously aware of how flexible and potentially useful our subjective experiences of time are. To truly have time on our side in a society that demands everything was done by yesterday and availability should be 24/7, rethinking time perspectives and representations may allow us more breathing space to achieve what we want and avoid what we don't. This relates to most peoples idea of free will. Amongst others, William James (1890) and Kurt Lewin (1942) stressed the importance of free will in human behaviour. Fundamentally, free will is present intentional behaviours with agency and thought. Thus, by acknowledging that our past and our future are abstract mental constructions that are subject to errors and distortions (albeit sometimes useful distortions), it may be possible to live more 'aware' in the present. Further, with a reminiscence of a positive past to increase personal efficacy, to allow for more realistic thinking (rather than wishful thinking), with less worry and anxiety over the future and less depressive rumination about the past, we may move forward at peace with our lives. Those with a more Balanced Time Perspective may be able to adapt to different situations with more ease. By working hard when it is time to work, and playing hard (or relaxing) when it is time to play, we may indeed find more personal

happiness in a world which often appears relentless and worrisome, and that may be the greatest goal of all.

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Appendices

Chapter 5: Study 8

McGlone and Harding's (1998) Ambiguous Time Question

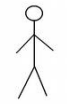
"The meeting originally scheduled for next Wednesday has been moved forward two days. What day is the meeting now that it has been rescheduled?"

Spatial Questions:

a. The block marked 'X' in block D in the diagram has been moved forward three places. Which column is the block in now that it has been moved?

			X			
A	B	C	D	E	F	G

b. There are 5 people standing as below. Person number 3 moves forward two places. Is person number 3 now standing in box number 1 or box number 5?

				
1	2	3	4	5

c. A book will be re-edited so that 'page 10' will move forward 5 pages. What page will 'page 10' now appear on?

d. The letter 'M' in the alphabet has been moved forward four places. What letter will the letter 'M' now follow in its new position?

Clock Questions

a. Your bus which usually arrives at your bus stop at quarter past every hour has been moved forward fifteen minutes. At what time will the bus now arrive at your bus stop at ever hour?

b. Normally an alarm clock is set for 9am but the alarm has been moved .forward ten minutes. What time is the new alarm set for?

Calendar Questions

a. You are scheduled to sit your exam in week 28 of the academic year. The exam period has been moved forward one week. What week are you now scheduled to sit your exam?

b. The first day of the January sales is normally 10th January but this year the sales start date has moved forward 5 days. On what date do the January sales now begin?

c. The winter Olympics normally takes place in December but the committee has moved it forward one month. What month will the winter Olympics now take place?

INFORMED CONSENT FORM

Title of the research: Study 1 – Examining McGlone and Harding's (1998) Ambiguous Time Question

Researcher: Jill Richmond **email** jill.richmond@tees.ac.uk

Supervisor: Dr Clare Wilson

Informed consent is routinely required from participants in psychological studies.

Please read the following information and decide whether or not to participate in this study.

Study description:

The study comprises of 10 questions. Please answer each question as accurately as possible. You will be given debrief information following once you have completed the questionnaire

You will also be asked for basic demographic information (gender, age).

The study will take approximately 5-10 minutes to complete

Further important details:

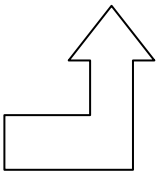
- This research is carried out in accordance with the ethical guidelines of the British Psychological Association and the University of Portsmouth. This entails that:
    - Your participation is entirely ***voluntary***. You may withdraw it without any negative consequences, at any time during the study. You may also withdraw your data within a period of one week, should you regret your participation.
    - Your data will be held ***confidentially*** and may be stored for a period of five years after the appearance of any associated scientific publications.
    - You will be able to obtain ***feedback*** about the overall results of this research (although it is not the departmental policy to give individual feedback).
- There are no reasonable physical or mental risks of participating in this study.

If you have any further questions about this study, please ask for clarification before you complete the questionnaire.

By completing the following questionnaire you are giving your consent to taking part in this study.

Participant Number:

Please ensure you thoroughly and carefully read this form before you begin. Once you have read this form, please sign and begin answering the items in this questionnaire pack. If you have any questions regarding this consent form then please ask prior to signing this form or completing this questionnaire pack. Please make a note of your own unique Participant number – which can be found above.



This study is being conducted by the Department of Psychology, Teesside University. We are very grateful that you are considering participating in this study. The anonymous results of this study may be submitted for publication in an academic journal.

This study is looking at how people think about themselves in time. Please make sure you sign and return the consent form with this questionnaire pack. You do not have to answer any questions that you do not want to. If you do not want to continue please hand your questionnaire back. Please try to answer all the questions as truthfully as you can. The study should take around 10 minutes to complete, after that you will be given a debrief sheet explaining more about the study and giving you contact details if you have any questions.

You will not be asked for any identifying details; therefore the information that you provide is **confidential**.

You can remove your data from the study **at any time**, just contact the person indicated on the debrief sheet that you will be given when you are finished.

Demographic Information:

Please enter your age and gender below:

Age: _____

Gender: _____

Study 1 Debrief ***2C***

Testing McGlone and Harding's (1998) Ambiguous Time Question

Thank you for participating in this study, your time and cooperation is much appreciated.

Your data will be used for a PhD dissertation and may be submitted for publication as an article. Your responses will be confidential and will be treated as group not individual data, and your data will not be recorded in any way that will allow your identification.

In 1998, McGlone and Harding developed the ambiguous time question that you answered first in this questionnaire pack ("The meeting originally scheduled for next Wednesday has been moved forward two days. What day is the meeting now that it has been rescheduled?"). The question is designed to assess representation of time, as some people answer that the meeting will now take place on 'Friday' whereas others answer 'Monday'. These representations of time are referred to in the literature as ego-moving and time-moving respectively. This study aims to explore whether people are consistent in being either ego-moving or time-moving in their representation of time, by testing this on spatial, clock and calendar questions.

If you have any further concerns or questions or would like a copy of the main findings, please do not hesitate to get in touch with Dr Clare Wilson:

Dr Clare Wilson
Department of Psychology
King Henry Building,
King Henry I Street,
Portsmouth,
Hampshire,
PO1 2DY
Tel: 023 92846305
Email: clare.wilson@port.ac.uk

Thank you once again for agreeing to participate in this study!

In the unlikely event that you become distressed as a result of taking part in this study we recommend that you contact one of the groups below who will be able to put you in touch with an appropriate person to talk to: **Contact Mind*info*line 0845 766 0163 info@mind.org.uk**
Contact Samaritans In the UK dial 08457 90 90 90; In the Republic of Ireland dial 1850 60 90 90
If you had any concerns about this study, you should contact Dr Clare Wilson using the contact information provided on this form. If your concerns are not dealt with then you can contact the Chair of the Psychology Research Ethics Committee in confidence by writing to: Chair of Psychology Department Research Ethics Committee, Department of Psychology, King Henry I Street, Portsmouth, Hampshire, PO1 2DY

Behaviour Identification Form (Vallacher &Wegner, 1989) *2D*

Any behaviour can be described in many ways. For example, one person might describe a behaviour as "writing an essay," while another person might describe the same behaviour as "pushing keys on the keyboard." Yet another person might describe it as "expressing thoughts." This form focuses on your personal preferences for how a number of different behaviours should be described. Below you will find several behaviours listed. After each behaviour will be two different ways in which the behaviour might be identified. For example:

1. Attending class
    a. sitting in a chair
    b. looking at a teacher

Your task is to choose the identification, ***a* or *b,*** that best describes the behaviour for you.

Simply circle to the option you prefer.

Be sure to respond to every item.

Please mark **only one** alternative for each pair.

Remember, mark the description that *you personally believe* is more appropriate for each pair.

1. Making a list
    a. Getting organized
    b. Writing things down

2. Reading
    a. Following lines of print
    b. Gaining knowledge

3. Joining the Army
    a. Helping the Nation's defence
    b. Signing up

4. Washing clothes
    a. Removing odours from clothes
    b. Putting clothes into the machine

5. Picking an apple
    a. Getting something to eat
    b. Pulling an apple off a branch

6. Chopping down a tree
    a. Wielding an axe
    b. Getting firewood

7. Measuring a room for carpeting
    a. Getting ready to remodel
    b. Using a yard stick

8. Cleaning the house
    a. Showing one's cleanliness
    b. Vacuuming the floor

9. Painting a room
    a. Applying brush strokes
    b. Making the room look fresh

10. Paying the rent
    a. Maintaining a place to live
    b. Writing a check

11. Caring for houseplants
    a. Watering plants
    b. Making the room look nice

12. Locking a door
    a. Putting a key in the lock
    b. Securing the house
13. Voting
    a. Influencing the election
    b. Marking a ballot

14. Climbing a tree
    a. Getting a good view
    b. Holding on to branches

15. Filling out a personality test
    a. Answering questions
    b. Revealing what you're like
16. Tooth brushing
    a. Preventing tooth decay
    b. Moving a brush around in one's mouth

17. Taking a test
    a. Answering questions
    b. Showing one's knowledge

18. Greeting someone
    a. Saying hello
    b. Showing friendliness

19. Resisting temptation
    a. Saying "no"
    b. Showing moral courage

20. Eating
    a. Getting nutrition
    b. Chewing and swallowing

21. Growing a garden
    a. Planting seeds
    b. Getting fresh vegetables

22. Travelling by car
    a. Following a map
    b. Seeing countryside

23. Having a cavity filled
    a. Protecting your teeth
    b. Going to the dentist

24. Talking to a child
    a. Teaching a child something
    b. Using simple words

25. Pushing a doorbell
    a. Moving a finger
    b. Seeing if someone's home

37 item Zimbardo Time Perspective Inventory (Zimbardo & Boyd, 1999*)** **2E

	Very Unlike Me				Very Like Me
1. I believe that getting together with friends to party is one of life's important pleasures	**1**	**2**	**3**	**4**	**5**
2. Fate determines much in my life	1	2	3	4	5
3. I plan my day ahead each morning	**1**	**2**	**3**	**4**	**5**
4. I do things impulsively	1	2	3	4	5
5. If things don't get done on time, I don't worry about it	**1**	**2**	**3**	**4**	**5**
6. When I want to achieve something, I set goals and consider ways to reach those goals	1	2	3	4	5
7. When listening to my favourite music, I often lose track of time	**1**	**2**	**3**	**4**	**5**
8. At night I do my homework before I play or watch television	1	2	3	4	5
9. Since whatever will be will be, it doesn't really matter what I do	**1**	**2**	**3**	**4**	**5**
10. I try to live my life as fully as possible, one day at a time	1	2	3	4	5
11. It upsets me to be late for appointments	**1**	**2**	**3**	**4**	**5**
12. Ideally, I would live each day as if it were my last	1	2	3	4	5
13. I do what I say I am going to do and I do it on time	**1**	**2**	**3**	**4**	**5**
14. I make decisions on the spur of the moment	1	2	3	4	5
15. I take each day as it is rather than try to plan it out	**1**	**2**	**3**	**4**	**5**
16. It is important to put excitement in my life	1	2	3	4	5
17. I feel that it's more important to enjoy what you're doing than to get work done on time	**1**	**2**	**3**	**4**	**5**
18. Before making a decision, I weigh the costs against the benefits	1	2	3	4	5
19. Taking risks keeps my life from becoming boring	**1**	**2**	**3**	**4**	**5**
20. It is more important for me to enjoy life's journey than to focus only on the destination	1	2	3	4	5
21. It takes joy out of the process and flow of my activities, if I have to think about goals, outcomes, and products	**1**	**2**	**3**	**4**	**5**
22. You can't really plan for the future because things change so much	1	2	3	4	5
23. My life path is controlled by forces I cannot influence	**1**	**2**	**3**	**4**	**5**
24. It doesn't make sense to worry about the future, since there is nothing I can do about it anyway	1	2	3	4	5
25. I complete projects on time by making steady progress	**1**	**2**	**3**	**4**	**5**
26. I take risks to put excitement in my life	1	2	3	4	5
27. I make lists of things to do	**1**	**2**	**3**	**4**	**5**
28. I often follow my heart more than my head	1	2	3	4	5
29. I am able to resist temptations when I know that there is work to be done	**1**	**2**	**3**	**4**	**5**

30. I find myself getting swept up in the excitement of the moment	1	2	3	4	5
31. Life today is too complicated; I would prefer the simpler life of the past	**1**	**2**	**3**	**4**	**5**
32. I prefer friends who are spontaneous rather than predictable	1	2	3	4	5
33. I keep working at difficult, uninteresting tasks if they will help me get ahead	**1**	**2**	**3**	**4**	**5**
34. Spending money today is better than saving for tomorrow	1	2	3	4	5
35. Often luck pays off better than hard work	**1**	**2**	**3**	**4**	**5**
36. I am passionate about my friends	1	2	3	4	5
37. There will always be time to catch up on my homework	**1**	**2**	**3**	**4**	**5**

INFORMED CONSENT FORM

Title of the research: Study 2 – Level of perceived agency, representations of time, and time perspective

Researcher: Jill Richmond **email** jill.richmond@tees.ac.uk
Supervisor: Dr Clare Wilson

Informed consent is routinely required from participants in psychological studies. Please read the following information and decide whether or not to participate in this study.

Study description:
The study comprises of several questionnaires. Please answer each question as accurately as possible. You will be given debrief information following once you have completed the questionnaire
You will also be asked for basic demographic information (gender, age).
The study will take approximately 10-15 minutes to complete

Further important details:

- This research is carried out in accordance with the ethical guidelines of the British Psychological Association and the University of Portsmouth. This entails that:
    - Your participation is entirely ***voluntary***. You may withdraw it without any negative consequences, at any time during the study. You may also withdraw your data within a period of one week, should you regret your participation.
    - Your data will be held ***confidentially*** and may be stored for a period of five years after the appearance of any associated scientific publications.
    - You will be able to obtain ***feedback*** about the overall results of this research (although it is not the departmental policy to give individual feedback).
- There are no reasonable physical or mental risks of participating in this study.

If you have any further questions about this study, please ask for clarification before you complete the questionnaire.
By completing the following questionnaire you are giving your consent to taking part in this study.

Level of perceived agency, representations of time, and time perspective

Thank you for participating in this study, your time and cooperation is much appreciated. Your data will be used for a PhD dissertation and may be submitted for publication as an article. Your responses will be confidential and will be treated as group not individual data, and your data will not be recorded in any way that will allow your identification.

This study seeks to examine ego-moving and time-moving representations of time which are two spatial metaphors to represent the passage of time (Lakoff & Johnson, 1980). Ego-moving concerns the individual viewing themselves as actively approaching the future through a stationary timeline whereas time-moving involves the individual viewing themselves as passive agents where events approach them. This study aims to explore these two spatial metaphors with Time Perspective (Zimbardo & Boyd, 1999) and level of perceived personal agency (Vallacher & Wegner, 1989). Different people may describe their actions in different ways, and whether we are concerned with our pasts, or futures, or more present orientated may also be related to these representations of time.

If you have any further concerns or questions or would like a copy of the main findings, please do not hesitate to get in touch with Dr Clare Wilson:

Dr Clare Wilson,
Department of Psychology, King Henry Building, King Henry I Street, Portsmouth, Hampshire, PO1 2DY
Tel: 023 92846305
Email: clare.wilson@port.ac.uk

Thank you once again for agreeing to participate in this study!

Jill Richmond

In the unlikely event that you become distressed as a result of taking part in this study we recommend that you contact one of the groups below who will be able to put you in touch with an appropriate person to talk to: **Contact Mind*info*line 0845 766 0163 info@mind.org.uk**

Contact Samaritans In the UK dial 08457 90 90 90; In the Republic of Ireland dial 1850 60 90 90

If you had any concerns about this study, you should contact Dr Clare Wilson using the contact information provided on this form. If your concerns are not dealt with then you can contact the Chair of the Psychology Research Ethics Committee in confidence by writing to: Chair of Psychology Department Research Ethics Committee, Department of Psychology, King Henry I Street, Portsmouth, Hampshire, PO1 2DY.

Oxford Happiness Questionnaire (Hills & Argyle, 2002) *3A*

1 = strongly disagree 2 = moderately disagree 3 = slightly disagree 4 = slightly agree 5 = moderately agree 6 = strongly agree

1. I don't feel particularly pleased with the way I am. (R) _____

2. I am intensely interested in other people. _____

3. I feel that life is very rewarding. _____

4. I have very warm feelings towards almost everyone. _____

5. I rarely wake up feeling rested. (R) _____

6. I am not particularly optimistic about the future. (R) _____

7. I find most things amusing. _____

8. I am always committed and involved. _____

9. Life is good. _____

10. I do not think that the world is a good place. (R) _____

11. I laugh a lot. _____

12. I am well satisfied about everything in my life. _____

13. I don't think I look attractive. (R) _____

14. There is a gap between what I would like to do and what I have done. (R) _____

15. I am very happy. _____

16. I find beauty in some things. _____

17. I always have a cheerful effect on others. _____

18. I can fit in (find time for) everything I want to. _____

19. I feel that I am not especially in control of my life. (R) _____

20. I feel able to take anything on. _____

21. I feel fully mentally alert. _____

22. I often experience joy and elation. _____

23. I don’t find it easy to make decisions. (R) _____

24. I don’t have a particular sense of meaning and purpose in my life. (R) _____

25. I feel I have a great deal of energy. _____

26. I usually have a good influence on events. _____

27. I don’t have fun with other people. (R) _____

28. I don’t feel particularly healthy. (R) _____

29. I don’t have particularly happy memories of the past. (R) _____

State Trait Anxiety Inventory (Spielberger, Gorsuch, & Lushene, 1970) *3B*

A number of statements which people have used to describe themselves are given below. Read each statement and then circle the appropriate number to the right of the statement to indicate how you *feel* right now, that is, *at this moment*. There are no right or wrong answers. Do not spend too much time on any one statement but give the answer which seems to describe your present feelings best.

Not at all	**Somewhat**	**Moderately so**	**Very much so**
1	**2**	**3**	**4**

1. I feel calm	1	2	3	4
2. I feel secure	1	2	3	4
3. I am tense	1	2	3	4
4. I am regretful	1	2	3	4
5. I feel at ease	1	2	3	4
6. I feel upset	1	2	3	4
7. I am presently worrying over possible misfortunes	1	2	3	4
8. I feel rested	1	2	3	4
9. I feel anxious	1	2	3	4
10. I feel comfortable	1	2	3	4
11. I feel self-confident	1	2	3	4

12. I feel nervous	1	2	3	4
13. I am jittery	1	2	3	4
14. I feel "high strung"	1	2	3	4
15. I am relaxed	1	2	3	4
16. I feel content	1	2	3	4
17. I am worried	1	2	3	4
18. I feel over-excited and "rattled"	1	2	3	4
19. I feel joyful	1	2	3	4
20. I feel pleasant	1	2	3	4

A number of statements which people have used to describe themselves are given below. Read each statement and then circle the appropriate number to the right of the statement to indicate how you *generally* feel. There are no right or wrong answers. Do not spend too much time on any one statement but give the answer which seems to describe how you generally feel.

Almost Never	**Sometimes**	**Often**	**Almost Always**
1	**2**	**3**	**4**

21. I feel pleasant	1	2	3	4
22. I tire quickly	1	2	3	4
23. I feel like crying	1	2	3	4
24. I wish I could be as happy as others seem to be	1	2	3	4
25. I am losing out on things because I can't make up my mind soon enough	1	2	3	4
26. I feel rested	1	2	3	4
27. I am "calm, cool, and collected"	1	2	3	4
28. I feel that difficulties are piling up so that I cannot overcome them	1	2	3	4
29. I worry too much over something that really doesn't matter	1	2	3	4
30. I am happy	1	2	3	4

31. I am inclined to take things hard 1 2 3 4

32. I lack self-confidence 1 2 3 4

33. I feel secure 1 2 3 4

34. I try to avoid facing a crisis or difficulty 1 2 3 4

35. I feel blue 1 2 3 4

36. I am content 1 2 3 4

37. Some unimportant thought runs through my mind and bothers me

1 2 3 4

38. I take disappointments so keenly that I can't put them out of my mind

1 2 3 4

39. I am a steady person 1 2 3 4

40. I get in a state of tension or turmoil as I think over my recent concerns and interests 1 2 3 4

Beck Depression Inventory (Beck, Rush. Shaw, & Emery, 1979) *3C*

This questionnaire consists of 20 groups of statements. After reading each group of statements carefully, circle the number (0, 1, 2 or 3) next to the one statement in each group which *best* describes the way you have been feeling the *past week, including today*. If several statements within a group seem to apply equally well, circle each one. *Be sure to read all the statements in each group before making your choice.*

1.
0 I do not feel sad.
1 I feel sad.
2 I am sad all the time and I can't snap out of it.
3 I am so sad and unhappy that I can't stand it.

2.
0 I am not particularly discouraged about the future.
1 I feel discouraged about the future.
2 I feel I have nothing to look forward to.
3 I feel that the future is hopeless and that things cannot improve.

3.
0 I do not feel like a failure.
1 I feel I have failed more than the average person.
2 As I look back on my life, all I can see is a lot of failures.
3 I feel I am a complete failure as a person.

4.
0 I get as much satisfaction out of things as I used to.
1 I don't enjoy things the way I used to.
2 I don't get real satisfaction out of anything anymore.
3 I am dissatisfied or bored with everything.

5.
0 I don't feel particularly guilty.
1 I feel guilty a good part of the time.
2 I feel quite guilty most of the time.
3 I feel guilty all of the time.

6.
0 I don't feel I am being punished.
1 I feel I may be punished.
2 I expect to be punished.
3 I feel I am being punished.

7.
0 I don't feel disappointed in myself.
1 I am disappointed in myself.
2 I am disgusted with myself.
3 I hate myself.

8.
0 I don't feel I am any worse than anybody else.
1 I am critical of myself for my weaknesses or mistakes.
2 I blame myself all the time for my faults.
3 I blame myself for everything bad that happens.

9.
0 I don't cry any more than usual.
1 I cry more now than I used to.
2 I cry all the time now.
3 I used to be able to cry, but now I can't cry even though I want to.

10.
0 I am no more irritated now than I ever am.
1 I get annoyed or irritated more easily than I used to.
2 I feel irritated all the time now.
3 I don't get irritated at all by the things that used to irritate me.

11.
0 I have not lost interest in other people.
1 I am less interested in other people than I used to be.
2 I have lost most of my interest in other people.
3 I have lost all of my interest in other people.

12.
0 I make decisions about as well as I ever could.
1 I put off making decisions more than I used to.
2 I have greater difficulty in making decisions than before.
3 I can't make decisions at all anymore.

13.
0 I don't feel I look any worse than I used to.
1 I am worried that I am looking old or unattractive.
2 I feel that there are permanent changes in my appearance that make me look unattractive.
3 I believe that I look ugly.

14.
0 I can work about as well as before.
1 It takes an extra effort to get started at doing something.
2 I have to push myself very hard to do anything.
3 I can't do any work at all.

15.
0 I can sleep as well as usual.
1 I don't sleep as well as I used to.
2 I wake up 1-2 hours earlier than usual and find it hard to get back to sleep.
3 I wake up several hours earlier than I used to and cannot get back to sleep.

16.
0 I don't get more tired than usual.
1 I get tired more easily than I used to.
2 I get tired from doing almost anything.
3 I am too tired to do anything.

17.
0 My appetite is no worse than usual.
1 My appetite is not as good as it used to be.
2 My appetite is much worse now.
3 I have no appetite at all anymore.

18.
0 I haven't lost much weight, if any, lately.
1 I have lost more than 5 pounds.
2 I have lost more than 10 pounds.
3 I have lost more than 15 pounds.

I am purposely trying to lose weight by eating less. Yes _____ No _____

19.
0 I am no more worried about my health than usual.
1 I am worried about physical problems such as aches and pains; or upset stomach; or constipation.
2 I am very worried about physical problems and it's hard to think of much else.
3 I am so worried about my physical problem that I cannot think about anything else.

20.
0 I have not noticed any recent change in my interest in sex.
1 I am less interested in sex than I used to be.
2 I am much less interested in sex now.
3 I have lost interest in sex completely.

INFORMED CONSENT FORM

Title of the research: Study 3 – The relationship between emotional experiences and representations of time

Researcher: Jill Richmond **email** jill.richmond@tees.ac.uk
Supervisor: Dr Clare Wilson

Informed consent is routinely required from participants in psychological studies.
Please read the following information and decide whether or not to participate in this study.

Study description:
The study comprises of several questionnaires. Please answer each question as accurately as possible. You will be given debrief information following once you have completed the questionnaire
You will also be asked for basic demographic information (gender, age).
The study will take approximately 10-15 minutes to complete

Further important details:

- This research is carried out in accordance with the ethical guidelines of the British Psychological Association and the University of Portsmouth. This entails that:
    - Your participation is entirely ***voluntary***. You may withdraw it without any negative consequences, at any time during the study. You may also withdraw your data within a period of one week, should you regret your participation.
    - Your data will be held ***confidentially*** and may be stored for a period of five years after the appearance of any associated scientific publications.
    - You will be able to obtain ***feedback*** about the overall results of this research (although it is not the departmental policy to give individual feedback).
- There are no reasonable physical or mental risks of participating in this study.

If you have any further questions about this study, please ask for clarification before you complete the questionnaire.
By completing the following questionnaire you are giving your consent to taking part in this study.

Study 3 Debrief *3E*

The relationship between emotional experiences and representations of time

Thank you for participating in this study, your time and cooperation is much appreciated.

Your data will be used for a PhD dissertation and may be submitted for publication as an article. Your responses will be confidential and will be treated as group not individual data, and your data will not be recorded in any way that will allow your identification.

This study seeks to examine ego-moving and time-moving representations of time which are two spatial metaphors to represent the passage of time (Lakoff & Johnson, 1980). Ego-moving concerns the individual viewing themselves as actively approaching the future through a stationary timeline whereas time-moving involves the individual viewing themselves as passive agents where events approach them. This study aims to explore these two spatial metaphors with emotions such as happiness, anxiety and sadness to see if there is a relationship.

If you have any further concerns or questions or would like a copy of the main findings, please do not hesitate to get in touch with Dr Clare Wilson:

Dr Clare Wilson
Department of Psychology
King Henry Building,
King Henry I Street,
Portsmouth,
Hampshire,
PO1 2DY
Tel: 023 92846305
Email: clare.wilson@port.ac.uk

Thank you once again for agreeing to participate in this study!

Jill Richmond

In the unlikely event that you become distressed as a result of taking part in this study we recommend that you contact one of the groups below who will be able to put you in touch with an appropriate person to talk to: **Contact Mind*info*line 0845 766 0163 info@mind.org.uk**

Contact Samaritans In the UK dial 08457 90 90 90; In the Republic of Ireland dial 1850 60 90 90

If you had any concerns about this study, you should contact Dr Clare Wilson using the contact information provided on this form. If your concerns are not dealt with then you can contact the Chair of the Psychology Research Ethics Committee in confidence by writing to: Chair of Psychology Department Research Ethics Committee, Department of Psychology, King Henry I Street, Portsmouth, Hampshire, PO1 2DY.

Film Clip Links ***3F***

Happiness-Induced condition

A comedy television clip from the popular television show 'Mock the Week' Retrieved 4th September 2007

http://www.youtube.com/watch?v=z9pijfVauJI&feature=channel

Anxiety-Induced condition

An excerpt from the film 'Vertical Limit' (2000). Retrieved 4th September 2007

http://www.youtube.com/watch?v=Y83qA10xTKI

Sadness-Induced condition

An excerpt of a 911 Operator on the telephone with someone trapped on the 105th floor of one of the Twin Towers after a plane hit the Twin Towers in New York on 11th September 2001. Retrieved 4th September 2007

http://www.youtube.com/watch?v=CYZqQWfGIJg

INFORMED CONSENT FORM

Title of the research: Study 4 – Exploring the directional relationship of representations of time

Researcher: Jill Richmond **email** jill.richmond@tees.ac.uk
Supervisor: Dr Clare Wilson

Informed consent is routinely required from participants in psychological studies.
Please read the following information and decide whether or not to participate in this study.

Study description:
The study involves reading a brief scenario and answering a few questions, and may involve watching a brief film clip. Please answer each question as accurately as possible. You will be given debrief information following once you have completed the questionnaire
You will also be asked for basic demographic information (gender, age).
The study will take approximately 5 minutes to complete

Further important details:

- This research is carried out in accordance with the ethical guidelines of the British Psychological Association and the University of Portsmouth. This entails that:
    - Your participation is entirely ***voluntary***. You may withdraw it without any negative consequences, at any time during the study. You may also withdraw your data within a period of one week, should you regret your participation.
    - Your data will be held ***confidentially*** and may be stored for a period of five years after the appearance of any associated scientific publications.
    - You will be able to obtain ***feedback*** about the overall results of this research (although it is not the departmental policy to give individual feedback).
- There are no reasonable physical or mental risks of participating in this study.

If you have any further questions about this study, please ask for clarification before you complete the questionnaire.
By completing the following you are giving your consent to taking part in this study.

Debriefing sheet

Exploring the directional relationship of representations of time

Thank you for participating in this study, your time and cooperation is much appreciated.

Your data will be used for a PhD dissertation and may be submitted for publication as an article. Your responses will be confidential and will be treated as group not individual data, and your data will not be recorded in any way that will allow your identification.

This study seeks to examine ego-moving and time-moving representations of time which are two spatial metaphors to represent the passage of time (Lakoff & Johnson, 1980). Ego-moving concerns the individual viewing themselves as actively approaching the future through a stationary timeline whereas time-moving involves the individual viewing themselves as passive agents where events approach them. This study aims to explore these two spatial metaphors with emotions such as happiness, anxiety and sadness to see if there is a directional relationship. Some people who took part in this study viewed a film clip which may have made them feel happy, anxious, or sad. In answering the questions in this study, we aim to see whether different emotional experiences (happiness, anxiety or sadness) affect these representations of time.

If you have any further concerns or questions or would like a copy of the main findings, please do not hesitate to get in touch with Dr Clare Wilson:

Dr Clare Wilson
Department of Psychology
King Henry Building,
King Henry I Street,
Portsmouth,
Hampshire,
PO1 2DY
Tel: 023 92846305
Email: clare.wilson@port.ac.uk

Thank you once again for agreeing to participate in this study!

Jill Richmond

In the unlikely event that you become distressed as a result of taking part in this study we recommend that you contact one of the groups below who will be able to put you in touch with an appropriate person to talk to: **Contact Mind*info*line 0845 766 0163 info@mind.org.uk**

Contact Samaritans In the UK dial 08457 90 90 90; In the Republic of Ireland dial 1850 60 90 90

If you had any concerns about this study, you should contact Dr Clare Wilson using the contact information provided on this form. If your concerns are not dealt with then you can contact the Chair of the Psychology Research Ethics Committee in confidence by writing to: Chair of Psychology Department Research Ethics Committee, Department of Psychology, King Henry I Street, Portsmouth, Hampshire, PO1 2DY.

INFORMED CONSENT FORM

Title of the research: Study 5 – Exploring the bidirectional relationship of representations of time

Researcher: Jill Richmond **email** jill.richmond@tees.ac.uk
Supervisor: Dr Clare Wilson

Informed consent is routinely required from participants in psychological studies. Please read the following information and decide whether or not to participate in this study.

Study description:
The study involves answering a few questions, and completing a scheduling task which involves moving different events to different days in a diary. Please answer any questions as accurately as possible. You will be given debrief information following once you have completed the questionnaire
You will also be asked for basic demographic information (gender, age).
The study will take approximately 10-15 minutes to complete

Further important details:

- This research is carried out in accordance with the ethical guidelines of the British Psychological Association and the University of Portsmouth. This entails that:
    - Your participation is entirely ***voluntary***. You may withdraw it without any negative consequences, at any time during the study. You may also withdraw your data within a period of one week, should you regret your participation.
    - Your data will be held ***confidentially*** and may be stored for a period of five years after the appearance of any associated scientific publications.
    - You will be able to obtain ***feedback*** about the overall results of this research (although it is not the departmental policy to give individual feedback).
- There are no reasonable physical or mental risks of participating in this study.

If you have any further questions about this study, please ask for clarification before you complete the questionnaire.
By completing the following you are giving your consent to taking part in this study.

Debriefing sheet

Exploring the bidirectional relationship of representations of time

Thank you for participating in this study, your time and cooperation is much appreciated.

Your data will be used for a PhD dissertation and may be submitted for publication as an article. Your responses will be confidential and will be treated as group not individual data, and your data will not be recorded in any way that will allow your identification.

This study seeks to examine ego-moving and time-moving representations of time which are two spatial metaphors to represent the passage of time (Lakoff & Johnson, 1980). Ego-moving concerns the individual viewing themselves as actively approaching the future through a stationary timeline whereas time-moving involves the individual viewing themselves as passive agents where events approach them. This study aims to explore these two spatial metaphors with emotions such as happiness, anxiety and sadness to see if there is a directional relationship. This study involved you moving different neutral events to different days in on diary pages. The way in which you arranged the events and then answered the questions assessing representation of time and feelings may show us that there is a relationship between emotional experiences and representation of time.

If you have any further concerns or questions or would like a copy of the main findings, please do not hesitate to get in touch with Dr Clare Wilson:

Dr Clare Wilson
Department of Psychology
King Henry Building,
King Henry I Street,
Portsmouth,
Hampshire,
PO1 2DY
Tel: 023 92846305
Email: clare.wilson@port.ac.uk

Thank you once again for agreeing to participate in this study!

Jill Richmond

In the unlikely event that you become distressed as a result of taking part in this study we recommend that you contact one of the groups below who will be able to put you in touch with an appropriate person to talk to: **Contact Mind*info*line 0845 766 0163 info@mind.org.uk**

Contact Samaritans In the UK dial 08457 90 90 90; In the Republic of Ireland dial 1850 60 90 90

If you had any concerns about this study, you should contact Dr Clare Wilson using the contact information provided on this form. If your concerns are not dealt with then you can contact the Chair of the Psychology Research Ethics Committee in confidence by writing to: Chair of Psychology Department Research Ethics Committee, Department of Psychology, King Henry I Street, Portsmouth, Hampshire, PO1 2DY.

Emotion Regulation Questionnaire (Gross & John, 2003) ***4A***

We would like to ask you some questions about your emotional life, in particular, how you control (that is, regulate and manage) your emotions. The questions below involve two distinct aspects of your emotional life. One is your emotional experience, or what you feel like inside. The other is your emotional expression, or how you show your emotions in the way you talk, gesture, or behave. Although some of the following questions may seem similar to one another, they differ in important ways. For each item, please answer using the following scale:

1----------2----------3----------4----------5----------6----------7

1.____ When I want to feel more positive emotion (such as joy or amusement), I change what I'm thinking about.
2.____ I keep my emotions to myself.
3.____ When I want to feel less negative emotion (such as sadness or anger), I change what I'm thinking about.
4.____ When I am feeling positive emotions, I am careful not to express them.
5.____ When I'm faced with a stressful situation, I make myself think about it in a way that helps me stay calm.
6.____ I control my emotions by not expressing them.
7.____ When I want to feel more positive emotion, I change the way I'm thinking about the situation.
8.____ I control my emotions by changing the way I think about the situation I'm in.
9.____ When I am feeling negative emotions, I make sure not to express them.
10.___When I want to feel less negative emotion, I change the way I'm thinking about the situation.

Note

Do not change item order, as items 1 and 3 at the beginning of the questionnaire define the terms "positive emotion"
and "negative emotion".

Scoring (no reversals)

Reappraisal Items: 1, 3, 5, 7, 8, 10; Suppression Items: 2, 4, 6, 9.

Procrastination Scale (for use with non-student population, Lay, 1986) 4B

People may use the following statements to describe themselves. For each statement, decide whether the statement is uncharacteristic or characteristic of you using the following 5 point scale. Note that the 3 on the scale is Neutral – the statement is neither characteristic nor uncharacteristic of you. In the box to the right of each statement, fill in the number on the 5 point scale that best describes you.

Extremely Uncharacteristic	Moderately Uncharacteristic	Neutral	Moderately Characteristic	Extremely Characteristic
1	2	3	4	5

1.	I often find myself performing tasks that I had intended to do days before.	☐
2.*	I often miss concerts, sporting events, or the like because I don't around to buying tickets on time.	☐
3.*	When planning a party, I make the necessary arrangements well in advance.	☐
4.	When it is time to get up in the morning, I most often get right out of bed.	☐
5.	A letter may sit for days after I write it before mailing it.	☐
6.	I generally return phone calls promptly.	☐
7.	Even with jobs that require little else except sitting down and doing them, I find they seldom get done for days.	☐
8.	I usually make decisions as soon as possible.	☐
9.	I generally delay before starting on work I have to do.	☐
10.*	When travelling, I usually have to rush in preparing to arrive at the airport or station at the appropriate time.	☐
11.	When preparing to go out, I am seldom caught having to do something at the last minute.	☐
12.	In preparing for some deadline, I often waste time by doing other things.	☐
13.*	If a bill for a small amount comes, I pay it right away.	☐
14.*	I usually return an RVSP request very shortly after receiving the invitation.	☐
15.	I often have a task finished sooner than necessary.	☐
16.	I always seem to end up shopping for birthday or Christmas gifts at the last minute.	☐
17.	I usually buy even an essential item at the last minute.	☐
18.	I usually accomplish all the things I plan to do in a day.	☐
19.	I am continually saying I'll do it tomorrow	☐
20.	I usually take care of all the tasks I have to do before I settle down and relax for the evening.	☐

Note: Reversed-keyed items: 3,4,6,8,11,13,14,15,18,20

Note: * indicates items that differ from student to non-student forms

Study 4 Consent *4C*

On not achieving your goals: Exploring the relationship between goal non-achievement, agency and time perspectives.

Why do we procrastinate?

Why we would rather veg out in front of the TV rather than get our stuff done?

Would you like to help a researcher understand why we sometimes fail to achieve our goals?

This study involves a short on-line questionnaire (it will take about 15 minutes to complete and is completely anonymous)

The study is about what you do and how you feel when you try (and sometimes fail) to achieve goals (and plan for the future). It consists of two main parts. In part 1, you will be asked a series of open-ended questions about a goal that you recently failed to achieve. In part 2, you will be asked to answer a questionnaire about how you think and feel about goal achievement in general and also about how you think about the past and the future in relation to goals.

This study is being conducted as part of the PhD research of Jill Richmond (email jill.richmond@tees.ac.uk) at the Department of Psychology, University of Portsmouth.

Her supervisor is Dr Clare Wilson
Department of Psychology
King Henry Building,
King Henry I Street,
Portsmouth,
Hampshire,
PO1 2DY
Tel: 023 92846305
Email: clare.wilson@port.ac.uk

INFORMED CONSENT FORM

Title of the research: On not achieving your goals: Exploring the relationship between goal non-achievement, agency and time perspectives.

Researcher: Jill Richmond **email** jill.richmond@tees.ac.uk
Supervisor: Dr Clare Wilson

Informed consent is routinely required from participants in psychological studies.
Please read the following information and decide whether or not to participate in this study.

Study description:
The study is about what you do and how you feel when you try (and sometimes fail) to achieve goals (and plan for the future). It consists of two main parts. In part 1, you will be asked a series of open-ended questions about a goal that you recently failed to achieve. In part 2, you will be asked to answer a questionnaire about how you think and feel about goal achievement in general and also about how you think about the past and the future in relation to goals.
You will also be asked for basic demographic information (gender, age).
The study will take approximately 15 min to complete.

Further important details:

- This research is carried out in accordance with the ethical guidelines of the British Psychological Association and the University of Portsmouth. This entails that:
    - Your participation is entirely ***voluntary***. You may withdraw it without any negative consequences, at any time during the study. You may also withdraw your data within a period of one week, should you regret your participation.
    - Your data will be held ***confidentially*** and may be stored for a period of five years after the appearance of any associated scientific publications.
    - You will be able to obtain ***feedback*** about the results of this research (although it is not the departmental policy to give individual feedback).
- There are no reasonable physical or mental risks of participating in this study.

If you have any further questions about this study, please email Jill for clarification before you complete the questionnaire.
By completing the following questionnaire you are giving your consent to taking part in this study.

Please complete the following details about yourself:

1. Age: _____
2. Gender:_____

Debriefing sheet
On not achieving your goals: Exploring the relationship between goal non-achievement, agency and time perspectives

Thank you for participating in this study, your time and cooperation is much appreciated.

Your data will be used for a PhD dissertation and may be submitted for publication as an article. Your responses will be confidential and will be treated as group not individual data, and your data will not be recorded in any way that will allow your identification.

If we want to achieve our goals it is often important to delay of immediate gratification in order to obtain a future, larger reward (e.g. Logue & King, 1991). However, often people don't value things when they are far in the future. For example, when students have a large assignment due in three months, they often prefer the pleasant present (and not doing anything towards starting the assignment) and the possibility of a frustrating future involving them starting it later (but right now they tell themselves that they have plenty of time and it will still get done) than a mildly frustrating present (where they start the assignment and struggle with what it is they need to do) and a better future (where the assignment is completed well). In goal setting, it may be rather easy to put off tasks till a later date, but when that 'later date' arrives (i.e. the 'future' becomes the 'present') it can once again become all too easy to keep putting off the task. This study is exploring how we see time and how that relates to how we fail at achieving our goals (that is, why we may procrastinate).

If you have any further concerns or questions or would like a copy of the main findings, please do not hesitate to get in touch with Dr Clare Wilson:

Dr Clare Wilson
Department of Psychology
King Henry Building,
King Henry I Street,
Portsmouth,
Hampshire,
PO1 2DY
Tel: 023 92846305
Email: clare.wilson@port.ac.uk

Thanks you once again for agreeing to participate in this study!

Jill Richmond

In the unlikely event that you become distressed as a result of taking part in this study we recommend that you contact one of the groups below who will be able to put you in touch with an appropriate person to talk to: **Contact Mind*info*line 0845 766 0163 info@mind.org.uk**

Contact Samaritans In the UK dial 08457 90 90 90; In the Republic of Ireland dial 1850 60 90 90

If you had any concerns about this study, you should contact Dr Clare Wilson using the contact information provided on this form. If your concerns are not dealt with then you can contact the Chair of the Psychology Research Ethics Committee in confidence by writing to: Chair of Psychology Department Research Ethics Committee, Department of Psychology, King Henry I Street, Portsmouth, Hampshire, PO1 2DY.

1 = Not at all true 2 = Hardly true 3 = Moderately true 4 = Exactly true

1	**I can always manage to solve difficult problems if I try hard enough.**
2	**If someone opposes me, I can find the means and ways to get what I want.**
3	**It is easy for me to stick to my aims and accomplish my goals.**
4	**I am confident that I could deal efficiently with unexpected events.**
5	**Thanks to my resourcefulness, I know how to handle unforeseen situations.**
6	**I can solve most problems if I invest the necessary effort.**
7	**I can remain calm when facing difficulties because I can rely on my coping abilities.**
8	**When I am confronted with a problem, I can usually find several solutions.**
9	**If I am in trouble, I can usually think of a solution.**
10	**I can usually handle whatever comes my way.**

Self Regulation Scale (SRS; Schwarzer, Diehl,& Schmitz, 1999) ***5B***

Response format:

(1) not at all true, (2) barely true, (3) moderately true, (4) exactly true

1. I can concentrate on one activity for a long time, if necessary.
2. If I am distracted from an activity, I don't have any problem coming back to the topic quickly.
3. If an activity arouses my feelings too much, I can calm myself down so that I can continue with the activity soon.
4. If an activity requires a problem-oriented attitude, I can control my feelings.
5. It is difficult for me to suppress thoughts that interfere with what I need to do. (–)
6. I can control my thoughts from distracting me from the task at hand.
7. When I worry about something, I cannot concentrate on an activity. (–)
8. After an interruption, I don't have any problem resuming my concentrated style of working.
9. I have a whole bunch of thoughts and feelings that interfere with my ability to work in a focused way. (–)
10. I stay focused on my goal and don’t allow anything to distract me from my plan of action.

Note: (–) indicates the item has to be reversed.

56-item ZTPI (Zimbardo & Boyd, 1999) *5C*

Familiar childhood sights, sounds, smells often bring back a flood of wonderful memories.	1	2	3	4	5
Fate determines much in my life.	1	2	3	4	5
I often think of what I should have done differently in my life.	1	2	3	4	5
My decisions are mostly influenced by people and things around me.	1	2	3	4	5
I believe that a person's day should be planned ahead each morning	1	2	3	4	5
It gives me pleasure to think about my past.	1	2	3	4	5
I do things impulsively.	1	2	3	4	5
If things don't get done on time, I don't worry about it.	1	2	3	4	5
When I want to achieve something, I set goals and consider specific means for reaching those goals.	1	2	3	4	5
On balance, there is much more good to recall than bad in my past	1	2	3	4	5
When listening to my favorite music, I often lose all track of time.	1	2	3	4	5
Meeting tomorrow's deadlines and doing other necessary work comes before tonight's play.	1	2	3	4	5
Since whatever will be will be, it doesn't really matter what I do.	1	2	3	4	5
I enjoy stories about how things used to be in the good old times."	1	2	3	4	5
Painful past experiences keep being replayed in my mind.	1	2	3	4	5
I try to live my life as fully as possible, one day at a time.	1	2	3	4	5
It upsets me to be late for appointments.	1	2	3	4	5
Ideally, I would live each day as if it were my last.	1	2	3	4	5
Happy memories of good times spring readily to mind.	1	2	3	4	5
I meet my obligations to friends and authorities on time.	1	2	3	4	5

I've taken my share of abuse and rejection in the past.	1	2	3	4	5
I make decisions on the spur of the moment.	1	2	3	4	5
I take each day as it is rather than try to plan it out.	1	2	3	4	5
The past has too many unpleasant memories that I prefer not to think about.	1	2	3	4	5
It is important to put excitement in my life	1	2	3	4	5
I've made mistakes in the past that I wish I could undo.	1	2	3	4	5
I feel that it's more important to enjoy what you're doing than to get work done on time.	1	2	3	4	5
I get nostalgic about my childhood.	1	2	3	4	5
Before making a decision, I weigh the costs against the benefits.	1	2	3	4	5
Taking risks keeps my life from becoming boring.	1	2	3	4	5
It is more important for me to enjoy life's journey than to focus only on the destination.	1	2	3	4	5
Things rarely work out as I expected.	1	2	3	4	5
It's hard for me to forget unpleasant images of my youth.	1	2	3	4	5
It takes joy out of the process and flow of my activities, if I have to think about goals, outcomes, and products.	1	2	3	4	5
Even when I am enjoying the present, I am drawn back to comparisons with similar past experiences.	1	2	3	4	5
You can't really plan for the future because things change so much.	1	2	3	4	5
My life path is controlled by forces I cannot influence.	1	2	3	4	5
It doesn't make sense to worry about the future, since there is nothing that I can do about it anyway.	1	2	3	4	5
I complete projects on time by making steady progress.	1	2	3	4	5
I find myself tuning out when family members talk about the way things used to be.	1	2	3	4	5
I take risks to put excitement in my life.	1	2	3	4	5

I make lists of things to do.	1	2	3	4	5
I often follow my heart more than my head.	1	2	3	4	5
I am able to resist temptations when I know that there is work to be done.	1	2	3	4	5
I find myself getting swept up in the excitement of the moment.	1	2	3	4	5
Life today is too complicated; I would prefer the simpler life of the past.	1	2	3	4	5
I prefer friends who are spontaneous rather than predictable.	1	2	3	4	5
I like family rituals and traditions that are regularly repeated.	1	2	3	4	5
I think about the bad things that have happened to me in the past.	1	2	3	4	5
I keep working at difficult, uninteresting tasks if they will help me get ahead.	1	2	3	4	5
Spending what I earn on pleasures today is better than saving for tomorrow's security.	1	2	3	4	5
Often luck pays off better than hard work.	1	2	3	4	5
I think about the good things that I have missed out on in my life.	1	2	3	4	5
I like my close relationships to be passionate.	1	2	3	4	5
There will always be time to catch up on my work.	1	2	3	4	5

NB: **ZTPI Subscale Items:**

Past-Negative: Items :04, 05, 16, 22, 27, 33, 34, 36, 50, 54.

Past-Positive: Items: 02, 07, 11, 15, 20, 25*(r)*, 29, 41*(r)*, 49.

Present-Hedonistic: Items 01, 08, 12, 17, 19, 23, 26, 28, 31, 32, 42, 44, 46, 48, 55.

Present-Fatalistic: Items 03, 14, 35, 37, 38, 39, 47, 52, 53.

Future: Items 06, 09*(r)*, 10, 13, 18, 21, 24*(r)*, 30, 40, 43, 45, 51, 56*(r)*.

Participant Number:

Please ensure you thoroughly and carefully read this form before you begin. Once you have read this form, please sign and begin answering the items in this questionnaire pack. If you have any questions regarding this consent form then please ask prior to signing this form or completing this questionnaire pack. Please make a note of your own unique Participant number – which can be found above.

This study is being conducted by the Department of Psychology, Teesside University. We are very grateful that you are considering participating in this study. The anonymous results of this study may be submitted for publication in an academic journal.

This study is looking at how people think about themselves in time. Please make sure you sign and return the consent form with this questionnaire pack. You do not have to answer any questions that you do not want to. If you do not want to continue please hand your questionnaire back. Please try to answer all the questions as truthfully as you can. The study should take around 20 minutes to complete, after that you will be given a debrief sheet explaining more about the study and giving you contact details if you have any questions.

You will not be asked for any identifying details; therefore the information that you provide is **confidential**.

You can remove your data from the study **at any time**, just contact the person indicated on the debrief sheet that you will be given when you are finished.

I understand that I am giving my consent for my data to be used in this study.

Signed:_____**Date:**_____

Section 1:

Please complete the following details about yourself:

Age: _____

Gender: Male _____ Female _____

Personal Goal you would like to achieve in the next 7 days:

_____

_____

_____

In between this session and next weeks session, you have the CHOICE of whether or not to write a plan about how you might achieve that goal. It is entirely up to you whether or not you want to write your own personal plan. If you choose to write a plan, please ensure that you bring it along to next weeks session.

Debrief

Name of researcher:	Jill Richmond
Name of supervisor:	Dr. J. Clare Wilson
Purpose of data collection:	Doctoral research
Contact details:	jill.richmond@tees.ac.uk

Thank you for participating in this study, your time and cooperation is much appreciated. Your data will be used for a PhD dissertation and may be submitted for publication as an article. Your responses will be confidential and will be treated as group not individual data, and your data will not be recorded in any way that will allow your identification.

The main purpose of the PhD research is to investigate the relationship between time representations, agency and affect. This study seeks to examine the relationship between self-efficacy, self-regulation, and time perspective. The term 'self-efficacy' refers to people's own beliefs about performing in certain ways in order to attain certain goals. The term 'self-regulation' relates to how people regulate/control their emotions, behaviours, and desires. The term 'time perspective' refers to the subjective way in which we relate to and think about time. This study therefore explores how we think about ourselves in relation to how we think about time.

If you have any questions or concerns about your participation or you wish to withdraw your data from this study, then please contact Jill Richmond at jill.richmond@tees.ac.uk

Study 7 Instructions *5F*

Please answer the following questions as best you can:

1. In the table below, please outline any goals you have set within the past month or so, for example, New Year's resolutions or goals for this semester, such as, give up smoking, lose weight, study better, keep room tidy etc. (If you have set no goals, please go to the next question).

What was the Goal?	**Did you have a plan? (circle as appropriate)**	**Has the goal been Achieved Or still Progressing or Given up? (circle as appropriate)**
	Yes / No	Achieved / Progressing / Given up
	Yes / No	Achieved / Progressing / Given up
	Yes / No	Achieved / Progressing / Given up
	Yes / No	Achieved / Progressing / Given up
	Yes / No	Achieved / Progressing / Given up
	Yes / No	Achieved / Progressing / Given up
	Yes / No	Achieved / Progressing / Given up

2. Next, would you please outline TWO goals you would really like to achieve in the next month. The first goal should be easy to achieve in the next month and the second goal should be something that you would really love to have achieved by the end of this month but you are not entirely sure you could really do it.

'Easy- to- achieve' goal:

Please rate how likely you think you are to achieve this goal in the next month:

1 2 3 4 5 6 7
Not at all Highly likely

Please rate how much you think you have the skills to achieve this goal in the next month:

1 2 3 4 5 6 7
Not at all Very Much so

'Love-to-achieve' goal

Please rate how likely you think you are to achieve this goal in the next month:

1 2 3 4 5 6 7
Not at all Highly likely

Please rate how much you think you have the skills to achieve this goal in the next month:

1 2 3 4 5 6 7
Not at all Very Much so

NOTE THIS SECTION OF THE QUESTIONNAIRE WILL BE DIFFERENT FOR EACH OF THE FOUR GROUPS.

GROUP 1 (Just Plan)

Much research into goal setting suggests that the best predictor of achieving your goals is if you write out a plan on how you would achieve those goals. Please take a couple of minutes now and write out a plan on how you could achieve each of your two goals:

‘Easy- to- achieve’ goal Plan:

‘Love-to-achieve’ goal Plan:

GROUP 2 (past focussed)

Often when people are setting goals, they forget how amazing they have been in achieving goals in the past because often we forgot about them once we achieve them and also we forget how many goals we have really achieved. Take a moment now and write down some of the goals that you have achieved in the past, even though at the time it may have been quite hard for you to do so (e.g., how often did you study for exams even though you would much rather be doing something else, or avoided overeating even though you were desperate to pig out, or planned to get all your Christmas shopping done on time and did it). Particularly write about any goals that have some similarity with the two you described above.

Finally, much research into goal setting suggests that the best predictor of achieving your goals is if you write out a plan on how you would achieve those goals. Please take a couple of minutes now and write out a plan on how you could achieve each of your two goals:

‘Easy- to- achieve’ goal Plan:

‘Love-to-achieve’ goal Plan:

GROUP 3(Future focused)

Often when people are setting goals they know how busy they are now (and have been in the past) but they think they will have more time in the future (hence they put off doing anything towards their goals till they have ‘more time’). One way to stop this is to think about your future time as the same as the time you have now. Spend a moment or two now thinking how you can make time to achieve your two goals above but imagine that you will be as busy as you have been in the past week. How could you get creative and innovative to make sure these two goals are achieved? Write it down here:

Finally, much research into goal setting suggests that the best predictor of achieving your goals is if you write out a plan on how you would achieve those goals. Please take a couple of minutes now and write out a plan on how you could achieve each of your two goals:

‘Easy- to- achieve’ goal Plan:

‘Love-to-achieve’ goal Plan:

GROUP 4 (past / future integrated)

Often when people are setting goals, they forget how amazing they have been in achieving goals in the past because often we forgot about them once we achieve them and also we forget how many goals we have really achieved. Take a moment now and write down some of the goals that you have achieved in the past, even though at the time it may have been quite hard for you to do so (e.g., how often did you study for exams even though you would much rather be doing something else, or avoided overeating even though you were desperate to pig out, or planned to get all your Christmas shopping done on time and did it). Particularly write about any goals that have some similarity with the two you described above.

Next, people setting goals know how busy they are now (and have been in the past) but they think they will have more time in the future (hence they put off doing anything towards their goals till they have 'more time'). One way to stop this is to think about your future time as the same as the time you have now. Spend a moment or two now thinking how you can make time to achieve your two goals above but imagine that you will be as busy as you have been in the past week. How could you get creative and innovative to make sure these two goals are achieved?

Finally, much research into goal setting suggests that the best predictor of achieving your goals is if you write out a plan on how you would achieve those goals. Please take a couple of minutes now and write out a plan on how you could achieve each of your two goals:

'Easy- to- achieve' goal Plan:

'Love-to-achieve' goal Plan:

INFORMED CONSENT FORM

Title of the research: Study 8 - On achieving your goals: Exploring the relationship between goal achievement, efficacy and time perspectives.

Researcher: Jill Richmond **email** jill.richmond@tees.ac.uk
Supervisor: Dr Clare Wilson

Informed consent is routinely required from participants in psychological studies.
Please read the following information and decide whether or not to participate in this study.

Study description:
The study is about what you do when you try to achieve goals (and plan for the future). It consists of two questionnaires. In part 1, you will be asked about any goals you have set for yourself and how you feel about your abilities to achieve those goals. You will then be asked to set two goals for the next month and given brief information that may help you achieve those goals. In part 2, a month later, you will be asked to complete a short questionnaire asking you how you got on with your goals and again how you feel about your abilities to achieve those goals.
You will also be asked for basic demographic information (gender, age).
Part 1 of the study will take approximately 15 min to complete and Part 2 a lot less.

Further important details:

- This research is carried out in accordance with the ethical guidelines of the British Psychological Association and the University of Portsmouth. This entails that:
    - Your participation is entirely ***voluntary***. You may withdraw it without any negative consequences, at any time during the study. You may also withdraw your data within a period of one week, should you regret your participation.
    - Your data will be held ***confidentially*** and may be stored for a period of five years after the appearance of any associated scientific publications.
    - You will be able to obtain ***feedback*** about the overall results of this research (although it is not the departmental policy to give individual feedback).
- There are no reasonable physical or mental risks of participating in this study.

If you have any further questions about this study, please ask for clarification before you complete the questionnaire.
By completing the following questionnaire you are giving your consent to taking part in this study.

Debriefing sheet (for Phase 1)
On achieving your goals: Exploring the relationship between goal achievement, efficacy and time perspectives.

Thank you so much for participating in this study, your time and cooperation is much appreciated.

Please rip this debrief sheet off and keep for your records. Below are the goal setting details and if you would like to make a note of your two goals and goal plan on this sheet please do so, it is yours to keep.

In about a month, we will ask you how you got on with your goals (it is a lot shorter☺). However, you do NOT have to take part in that if you do not want to. A full explanation of the study will be given then.

Your data will be used for a PhD dissertation and may be submitted for publication as an article. Your responses will be confidential and will be treated as group not individual data, and your data will not be recorded in any way that will allow your identification.

If you have any further concerns or questions or would like a copy of the main findings, please do not hesitate to get in touch with Dr Clare Wilson: Email: clare.wilson@port.ac.uk

In the unlikely event that you become distressed as a result of taking part in this online study we recommend that you contact one of the groups below who will be able to put you in touch with an appropriate person to talk to: **Contact Mind*info*line 0845 766 0163 info@mind.org.uk**, **Contact Samaritans In the UK dial 08457 90 90 90**; In the Republic of Ireland dial 1850 60 90 90

Debriefing sheet (for Phase 2)
On not achieving your goals: Exploring the relationship between goal non-achievement, agency and time perspectives

Thank you for participating in this study, your time and cooperation is much appreciated.

Your data will be used for a PhD dissertation and may be submitted for publication as an article. Your responses will be confidential and will be treated as group not individual data, and your data will not be recorded in any way that will allow your identification.

If we want to achieve our goals it is often important to delay of immediate gratification in order to obtain a future, larger reward (e.g. Logue & King, 1991). However, often people don't value things when they are far in the future. For example, when students have a large assignment due in three months, they often prefer the pleasant present (and not doing anything towards starting the assignment) and the possibility of a frustrating future involving them starting it later (but right now they tell themselves that they have plenty of time and it will still get done) than a mildly frustrating present (where they start the assignment and struggle with what it is they need to do) and a better future (where the assignment is completed well). In goal setting, it may be rather easy to put off tasks till a later date, but when that 'later date' arrives (i.e. the 'future' becomes the 'present') it can once again become all too easy to keep putting off the task. Further, we achieve goals all the time (some days just managing to get out of bed can be an amazing example of goal achievement☺). However, because we don't always learn from the past (or even remember it) we don't develop the skills we already have to use on new goals. This study is exploring how we see time (past and future) and how that relates to how we achieve our goals. It is hoped that the time information given to you (some people got information reminding them of past successes, whilst others got information about the future and some got both) will have improved your ability to achieve goals.

If you have any further concerns or questions or would like a copy of the main findings, please do not hesitate to get in touch with Dr Clare Wilson:

Dr Clare Wilson, Department of Psychology, King Henry Building, King Henry I Street, Portsmouth, Hampshire, PO1 2DY
Tel: 023 92846305
Email: clare.wilson@port.ac.uk

Thanks you once again for agreeing to participate in this study!

Jill Richmond

In the unlikely event that you become distressed as a result of taking part in this online study we recommend that you contact one of the groups below who will be able to put you in touch with an appropriate person to talk to: **Contact Mind*info*line 0845 766 0163 info@mind.org.uk**
Contact Samaritans In the UK dial 08457 90 90 90; In the Republic of Ireland dial 1850 60 90 90

If you had any concerns about this study, you should contact Dr Clare Wilson using the contact information provided on this form. If your concerns are not dealt with then you can contact the Chair of the Psychology Research Ethics Committee in confidence by writing to: Chair of Psychology Department Research Ethics Committee, Department of Psychology, King Henry I Street, Portsmouth, Hampshire, PO1 2DY.