

Optimising Performance in Educational Teams: The Effect of Time Perspective

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Abstract

Although there have been many studies researching how time perspective factors influence the behaviour of individuals there has been little research to date studying how people with different time perspectives work together in teams, and whether team performance can be improved dependent on the combination of time perspectives of the individuals within the team.

A mixed method design was used to study quantitatively whether there were any relationships between team performance in a higher educational setting and the time perspective factors of the Zimbardo Time Perspective Inventory (Zimbardo & Boyd, 1999), and qualitatively to see what participants felt about team work generally. It then examined whether there were any differences in these views between high and low scorers on two of the time perspective factors that were shown to be associated with team performance.

Correlational studies were carried out with educational teams that worked together for three different time periods: the long-duration teams worked together over an academic year; the medium-duration teams worked together over 8-10 weeks within one academic semester; and the short-duration teams worked together on four tasks over a 30-45 minute time period. The results showed that there was a significant positive relationship with the Future factor and a significant negative relationship with the Present Fatalistic factor and improved performance in the long-duration task; a significant negative relationship with the Present Fatalistic factor and improved performance in the medium-duration task; and no significant relationships between any of the factors and performance in the short-duration task. These outcomes demonstrated that some aspects of time perspective can significantly influence team performance. These deep level demographics, however, are only apparent when the team works together for a sufficient length of time. The longer the team works together the greater the number of time perspective factors affect performance.

As well as looking at the mean time perspective factor scores within the team, the variance between team members and the minimum and maximum scores were also

analyzed to see if a team with diverse time perspective characteristics, or with just one person scoring particularly high or low in a factor, influenced the performance of the educational teams. In the long-duration team the more heterogeneous the team was in the Future factor the worse the team performed; the higher the minimum score in the Future factor the better the team performed. In the medium-duration teams the higher the maximum score on Present Fatalism the worse the team performance.

A further study was carried out to demonstrate this relationship experimentally by placing participants into teams of high or low scorers on the Future and the Present Fatalism factors and noting their performance. Various problems were encountered that affected this research and so the results were somewhat unproductive.

A qualitative thematic analysis study was undertaken in order to establish what twelve participants identified about having to take part compulsorily in educational team projects within a Higher Education module. Five themes were identified: team organization, which included the roles within the team, the individual within the team and the internal organization of the team; the leadership roles and responsibilities; the social support received from team membership; and the rewards and the disadvantages of being a team member. Following on from this, a descriptive analysis was carried out to explore the differences in how team work is seen between high and low scorers in both the Future factor and the Present Fatalistic factor. There were certain differences between the high and low scorers on the Present Fatalistic factor based around the type of teams mentioned, particularly with procrastinatory and confidence enhancement behaviours.

Overall, this thesis provides evidence for the effect of the Future and Present Fatalism factors in affecting team performance, and knowledge and understanding of one's team members' time perspective should therefore be a consideration when placing people in educational teams for long and medium-duration team projects.

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“The strength of the team is each individual member. The strength of each member is the team.” — Phil Jackson

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CHAPTER 1:

Thesis Rationale and Overview

1.1: Rationale

The purpose of this research was to investigate people working together in teams, in a higher educational setting, that are diverse in terms of time perspective. The aim was to see whether either a combination of team members with differing time perspectives in any of the five Zimbardo and Boyd (1999) time perspective factors, or including team members with particularly high or low scores on any of the time perspective factors, can alter the effectiveness of a team's performance, as measured by module marks.

The rationale is to establish whether time perspective has an effect on team performance. If so it would help to be able improve the composition of a team in order to enhance the standard of work produced, thereby maximising the performance of both the team and the individual team members. The use of student-led team work in higher education courses is increasing in order to provide students with useful, and increasingly required, preparation for the labour market. Lowden, Hall, Elliot and Lewin (2011) were commissioned by the Edge Foundation, which exists to increase the status of practical and vocational learning, to study the employers' perceptions of new graduates' employability skills. They established that graduate employability was broadly understood to include technical and discipline competence from the degrees but that a broader range of attributes such as communication, problem solving, critical thinking and team-working abilities should be included in a graduate's skill set. Their qualitative research, based on interviews with 22 employers, showed that 'soft' skills such as communication and team work counted for more in employability terms than 'hard' skills such as IT, technical skills or a high degree qualification. The graduates themselves considered work experience and internships as valuable assets in employability, but employers viewed work related learning, such as teamwork projects, as a useful provider of generic skills, finding that in workplace interviews students frequently referred to group projects that they have worked on within the degree programmes. Employers have criticised further education for not equipping

their students with the ability to work in teams, to be able to collaborate with others or to communicate easily with those with skills that are different from their own (Thorley & Gregory, 1994). Furthermore collaborative learning is seen to improve the learning experience of the student by giving students the tools that allow them to develop personal skills, enhance the key concept understanding and become exposed to a variety of perspectives (Thorley & Gregory, 1994). Team projects are defined as graded assignments that require students to collaborate both in and out of designated classroom time (Ettington & Camp, 2002). These projects not only provide social benefits such as the ability to work well with others (Pfaff & Huddleston, 2003) but also help students to develop important work attributes such as communication, time management, presentation and leadership skills (Aggarwal & O'Brien, 2008).

Thorley and Gregory (1994) believed that group work challenges higher education establishments both in what the students learn and also how to assess the skills. Most group work is experiential and this experiential nature of team work may have a time lag before the benefits become noticeable. Students may not initially see the learning advantages until some time has passed, perhaps not even until their work life, following the degree course, has started. Traditionally assessment of team work in higher education has not been carried out individually, although sometimes a small percentage of the overall mark is given by other team members to establish the individual's ability to work cooperatively. Thorley and Gregory (1994) suggested that the criteria for team assessment should be clearly available to the students as educational teams have a secondary criterion of the individual team member's personal achievement.

There is a considerable amount of conflicting research as to the optimal format of a team's demographic composition. Harrison, Price, Gavin and Florey (2002) referred in their literature review to several studies in which demographic characteristics have been studied, including surface level categories such as age, gender and race and deep level characteristics such as personality, attitudes and values. Much research has shown both improvements to and problems in terms of performance as a result of certain types of people working together within a team. The current research therefore aims to establish whether there are advantages to having team members with higher or lower scores in specific time perspective factors

to improve educational team performance. This is an area of knowledge that has been overlooked in the past.

For this thesis I studied groups in higher education, working in modular teams, formed specifically in order to achieve a classroom goal. Whereas workplace teams can exist over time and the population and demands within the team can, and often do, change, most classroom teams are more stable but last for shorter periods of time (possibly only part of one semester or one academic year). The teams studied included teams that were operational over three different time periods from 30 minutes duration to 8 weeks duration to those lasting for one academic year.

1.2: Thesis overview

Chapter 2 reviews the literature on teams. This includes what makes a team and a group different; how a team works together; how different aspects of a team composition, such as size, demographics and functionality, can alter a team's performance; and the theories of how a team develops over time. It also includes how previous research has operationalized both team performance and team composition in the past. Finally this chapter reviews the literature on how teams have been incorporated into Higher Education courses to enhance the student learning experience. Chapter 3 reviews the literature on time perspective from several differing viewpoints: circadian rhythm; pacing style; chronicity; and Zimbardo and Boyd's (2008) time perspective factors.

Chapters 4, 5 and 6 describe separate correlational studies on teams that worked together for three differing time durations: Chapter 4 reports a long-duration team study; Chapter 5 a medium-duration team study and Chapter 6 a short duration team study. These studies aim to test whether time perspective factors are affected by the length of time a team works together. A study which aimed to show experimentally what had been established in the previous three chapters is described in Chapter 7. As this particular experimental study had some design problems, a semi-structured interview with some of the participants was carried out to explain the

difficulties encountered. Chapter 7 also reports on several studies carried out with individual participants to identify whether signing up to psychology research participation schemes, used in the experimental study, showed any association with their time perspective factors.

A thematic analysis reported in Chapter 8 was carried out on 12 semi-structured interviews to establish how students experienced team work in Higher Education. All the participants had recently taken part in a team project as part of a postgraduate module and had been interviewed about their experiences as well as other teamwork involvement they had encountered. Chapter 8 then goes on to describe how these same participants felt about teamwork after having separated the individuals into high and low scorers on the two Zimbardo and Boyd (1999) time perspective factors that had been seen to affect team performance in the earlier research. Finally Chapter 9 draws conclusions as to the effect of the time perspective factors on team performance.

CHAPTER 2:

Teams: General Introduction

2.1: Group/Team definition

According to Gordon (1983) a group is defined as such when four criteria have been met: (1) the members of the group feel they are acting as a single unit, (2) all the members share a common goal, (3) rewards are shared amongst all members and (4) any action that one member undertakes affects the other members of the group. Gordon (1983) suggested that task demands, resources (such as abilities, knowledge and skills) and the actions of the individual or collective can alter the groups' performance ability. Guzzo and Dickson's (1996) definition was similar but added that a group would be embedded in a larger social system (such as an organization). These views are further supported by Campion, Medsker and Higgs (1993) who believed there are five common themes of work group characteristics related to group effectiveness. Apart from agreeing with the previous definitions of interdependence (task as well as goal) they included job design (which includes management, participation, task identity, variety and significance), composition (heterogeneity, flexibility and size), context (managerial support) and process (social support, workload sharing and communication). Tubbs (1995) proposed there were six considerations in identifying a group: he agreed with the previous authors that groups show motivation (that the group gets rewarded in some manner); that each member has a role to play; and that all the members are dependent on the rest of the group; but also added that group members make an impression on others; that they are working towards a common goal; and that there is communication amongst members. All these separate definitions have a commonality that a group is an inter-dependent social body: what one individual does will affect the rest of the group in some way and that rewards are shared between all the members.

Tubbs' (1995) definition of a group is more pertinent to that of a team. A team is a specialised form of a group. They are a group of people collaborating on a

common task. They are usually embedded within an organisation and are mutually dependent on other team members in order to complete their allotted tasks. The Oxford English dictionary (online) reports a group as being a number of people that are located gathered or classed together, whereas a team is described as a coming together to achieve a common goal. These two terms (group and team) are often used interchangeably in the literature but arguably although all teams are part of a group, not all groups are part of a team, the important difference being the collaboration on a common task. Katzenbach and Smith (1993) asserted that groups become teams when they develop a shared commitment and invest time into shaping specific purpose into performance goals. Teams, in their opinion, achieve more than the summation of the individuals' achievements. A difference between the terms group and team was identified in a study by Fisher, Hunter, and Macrosson (1997) who asked 328 MBA students to select adjectives characterising both a management team and a management group. The majority of the participants had had experience both in membership of management teams or groups (94%) or responsibility for management groups or teams (81.5%) and the authors surmised that if there were different behaviours in each, then people who had worked in both teams and groups should be able to recount those differences. It was found that while there were several adjectives that were equally used for both teams and groups such as "active, effective, energetic, and flexible", the descriptions concerning teams included "creative, innovative and well-rounded" whilst "negotiating, networking, persuasive, and sum of individual goals" applied particularly to groups (p233). Admittedly this study only looked at the perceptions of the participants rather than actual performance of the teams/groups under scrutiny, but it showed that the perceptions are that teams are innovative and well-rounded in a way that groups are not necessarily seen to be. This was as a result of teams' members having adjusted to one another and having a clearer understanding of both the team members' roles and the team's internal composition. There is a subtle difference between the two expressions in spite of many similarities. In this research therefore all the groups to be studied will be teams working on a common task to achieve a specific goal.

2.2: Team effectiveness

The effectiveness of teams has been studied using the Input-Process-Output model (I-P-O) first mentioned by McGrath (1964) and based on classic systems theory¹. Steiner (1972), McGrath (1984) and Hackman (1987) all researched team performance and linked the team input through process to the team output. This model provided links between team inputs, such as the team composition, the team demographics, their attitudes and personality traits, through a variety of processes such as collaboration (Goodman & Leyden, 1991), cohesion (Evans & Dion, 2012, Guzzo & Shea, 1992) and disputes (Gamero Gonzales-Roma & Peiro, 2008; Costa, Passos & Bakker, 2015) to the team output. The characteristics of the team members therefore can influence the way the team operates and thus its effectiveness. This I-P-O model suggested that the teams' individual factors that existed before the group was operational (including group level factors such as size, cohesiveness and structure, and environmental factors such as the reward structure and level of environmental stress as well as personality, skills and attitudes), influenced group processes (how the team members interact to perform their tasks). These combined to determine the teams' output which not only included performance quality but also the group members' satisfaction, all of which have been shown, in reviews by Guzzo and Dickson (1996) and Illgen, Hollenbeck, Johnson and Jundt (2005), to have an impact on performance. According to Antoni and Hertel (2009), who later extended the review on team research of the I-P-O model to include mediating and moderating factors, the inputs can also include such items as task design, team composition, team diversity, team potency and organizational contexts. Processes can include the teams' objectives, their decision making, leadership issues and conflict; the output can also take account of team viability and innovation and team member individual growth as well as (as previously mentioned) team performance and member satisfaction. This model has been used to provide evidence of team effectiveness in group composition (Campion, Medsker & Higgs, 1993), heterogeneity (Magjuka & Baldwin, 1991; Bantel & Jackson, 1989) and familiarity amongst team members (Goodman & Leyden, 1991).

¹ Classic systems theory: a system is an entity with inter-related and independent parts. Change in one part affects other parts. A system is defined by its boundaries and is more than a sum of its parts. The theory was originally proposed by Ludwig von Bertalanffy, as cited in Marsiglia, (2009).

The I-P-O model however has received some criticism based on its perceived simplicity and on its failure to take into account the temporal aspect of a team's life cycle in which development and feedback can be incorporated into the team's practices. Illgen, Hollenbeck, Johnson and Jundt (2005) critiqued the I-P-O model believing it erred on the side of simplicity. They based this belief on Hackman's (1987) and McGrath's (1984) own views that there was potential for feedback loops and that a linear progression from input to output was unsupported (Illgen et al., 2005). They found that teams were complex, adaptive systems existing over time and context. Teams continually change as interactions amongst the team members and their environments occur, and in their review of team based research they posited that the structure was more complex than the simple cause and effect of the I-P-O model. They cited research showing that group output was not necessarily solely a result of a linear path from input to outcome. Sometimes the output e.g. team performance can be treated as an input for future processes and different outputs. Interactions have also been noted between some inputs and processes, between processes, or between processes and emergent states which are constructs that appear as a result of teamwork and that can impact on team outcomes such as team commitment, role knowledge or team identity (Illgen et al, 2005). Therefore Illgen et al. (2005) devised the IMOI model (Input-Mediator-Output-Input) in which a mediator provides a broader aspect than just using process in explaining the variability in team performance. These mediational factors can affect the output of the team in a more complex way than the straightforward I-P-O framework would suggest, and the second input suggests the idea of a cyclical path rather than a linear one. The IMOI model has three phases of teamwork that have a temporal aspect to them. In the early formation stages of a team the input-mediator phase consists of trusting, planning and structuring components (Chan, 2009). In this phase the trust relates to the potency, efficacy, confidence and safety of the team allowing the team members to have collective belief that they can achieve their goals, and that taking risks will not jeopardise their safety. The planning stage allows information gathering and strategy development to occur by developing and maintaining group norms and roles, during which team members are able to share information, both the shared mental models of common knowledge and the understanding of who in the team knows what. This

allows the team to arrive at a strategy to complete its goals. These aspects are all positively associated with team performance. The second stage is the Mediator-Output phase referred to as the functioning phase. This occurs when the team members know each other and can collaborate with others. This bonding component of the team has to manage team diversity and possible conflict that may arise. The team has to be adaptable about which team members help each other in sharing the workload and providing backup when required. Learning from other team members both by listening to dissenting or minority members and learning from experience as to who is the best team member for any specific task can also affect the performance of the team. The final stage is the dissolution of the team.

Teams require time to mould as a unit that performs to its potential. These models of team work show that the team members need to bring together the team structure, as well as the members' knowledge and differences in personality, attitudes and beliefs, through a series of processes such as collaboration and conflict to a group norm allowing the group to progress to achieving the group goal. These stages take time to pass through before a team is able to work at its full potential.

2.3: Surface and deep level demographics

Surface demographic diversity refers to the variability within a team of characteristics that are easily seen and descriptive of the individuals such as age, gender, marital status or ethnicity, or their relationship with the organisation such as length of service, functional background and position within the hierarchy (e.g. Ancona & Caldwell, 1992; Bray, Kerr, & Atkin, 1978; Pelled, Eisenhardt, & Xin, 1999; Harrison, Price, Gavin & Florey, 2002; Simons, Pelled, & Smith, 1999). Deep level diversity refers to diversity that is more attitudinal and includes personality trait differences and differences in beliefs (Anderson & Kilduff, 2009; Barrick, Stewart, Neubert & Mount, 1998; Barry & Stewart, 1997; Harrison, Price & Bell, 1998). All these individual differences can bring a breadth of knowledge and thus a variety of perspectives into the team (Ancona & Caldwell, 1992). However these same differences can also cause a

lack of cohesion within the team often due to communication problems, thus leading to less effective outcomes (Jehn, 1999). Harrison et al. (1998, 2002) studied team diversity both in terms of some surface level diversity variables (age, gender, ethnicity and team tenure) and some deep level diversity variables (job satisfaction and organizational commitment) against a group cohesiveness score and found that surface level diversity was more noticeable in the early stages of team development as the outward differences are easily perceptible. On the other hand deep level diversity became more influential over time as team members learnt more about each other's attitudes and beliefs.

Team demographic diversity can affect the individuals within a team in three different ways. People can be attracted to working with those who have similar values, beliefs and attitudes to themselves according to the similarity/attraction theory as stated by Byrne (1971) who found that increased demographic dissimilarities were associated with lower effectiveness within dyadic work teams. Tajfel (1982), as cited in Lembke and Wilson (1998) proposed the Social Identity Theory in which people classify themselves as group members and classify others as outsiders and tend to treat members of their own group with favouritism and stereotype others according to their groups' traits. These two theories suggest that diversity will cause a negative effect on a group. Atkinson and Shiffrin's, (1968) Information-Processing Theory suggests that people process information that is received through the senses rather than just respond to the stimuli. This therefore indicates that team diversity will add a broader range of contributions to a team as different members' differing understandings and viewpoints of issues encountered, will improve its creativity, innovativeness and ability to problem solve. The diversity in team members will therefore create more access to a wider variety of input data, so it is thought that heterogeneous teams will usually have a positive effect on performance. This is especially likely when a disjunctive task, in which the results are affected by the strongest member, is being performed and where team members can learn from one another.

However team heterogeneity can cause conflict when team members cannot understand the culture or language of other members. Some studies have shown that diversity in ethnicity, tenure and functional background improved team performance

(e.g. Bantel & Jackson, 1989; O'Reilly, Williams & Barsade, 1997), whereas others have shown that diversity in tenure, age and ethnicity decreased performance (Michel & Hambrick, 1992; Zajac, Golden & Shortell, 1991). Tenure, age, gender and ethnic diversity have been shown to lead to higher turnover and absenteeism and lower satisfaction levels (Ely & Thomas, 2001; O' Reilly Caldwell & Barnett, 1989). This variability in result may be due to different managerial approaches. In Bantel and Jackson's (1989) the top management in six separate banks was studied, whereas O'Reilly, Williams and Barsade (1997) looked at teams comprised from field representatives in a convenience store chain. Michel and Hambrick (1992) studied data from top management from 134 different companies. However many of these companies were family firms and therefore a number of the longer tenured participants were also family members adding more complexity to the results.

In a series of meta-analyses of 108 empirical studies Stahl, Maznevski, Voigt and Jonsen (2009) found that cultural diversity, both surface level and deep level, can be both an advantage and a liability for the team. Cultures provide a source of identity for their members: Stahl et al. (2009) defined it as the body of beliefs and values that define "the shoulds and the oughts of life and guide the meaning that people attach to aspects of the world around themselves" (p.691). They found not only that cultural differences increased creativity amongst groups, but also that cultural diversity increased task conflict and reduces social integration amongst team members. Surface level cultural diversity showed a negative relationship with communication effectiveness whereas deep level cultural attributes showed a positive relationship. These effects however were generally small, leaving a large proportion of variance of the dependent variables unexplained. Moreover, differences were found dependent on whether the studies used in the meta-analysis were carried out in a laboratory setting or in the workplace. Cultural diversity was negatively related with social integration but only in laboratory studies using student samples but not in field studies using employees.

Diversity of a team's demographics can both aid a team to achieve its goals as well as cause problems. The surface demographics, which are easily noticeable early in the team process, can be overcome as the team identity strengthens but the deep

demographics of attitudes and beliefs can be more detrimental to team processes causing conflict later on in the life span of the team.

2.4: Team size

It is economically likely that the more workers there are in a team, the greater the amount of work that can be completed. Team members can specialise in various areas, releasing others from repeating the same work. They can learn from each other, thus reducing the need to solve problems independently. This implies that the greater the number of team members, the better the team performance should be. However with larger numbers of team members come problems not associated with smaller team numbers such as “social loafing” in which members rely on others to do the required tasks (Karau & Williams, 1993), “free riding” in which people will reduce their work output if they feel others in the team are not putting in as much effort, and “groupthink” which involves poor decision making from an overly cohesive team (Janis, 1972).

Frank and Anderson (1971) compared groups with differing sizes of 2, 3, 5 and 8 people on two types of team: one in which the weakest member is the most influential undertaking a conjunctive task, and the other in which the strongest member is the most influential undertaking a disjunctive task. They then asked the team members to evaluate their team on group atmosphere and satisfaction. The teams completed the same sets of nine tasks but were issued with different instructions according to the two conditions. In the conjunctive condition the team could not progress with the next task until all the team members had finished the previous task, whereas in the disjunctive condition the team could move on as soon as the task had been completed by any member of the team. The teams were all matched by gender and presented with both types of tasks. Their task answers were judged on how many they answered correctly and how unusual the answers were, as judged by two independent raters. The results showed a significant interaction between task type and group size: an increase in group size produced more correct

completed answers for disjunctive problems but fewer conjunctive problems were completed correctly. The disjunctive group however scored higher on aspects of social-emotional behaviour, such as pleasant, warm, friendly, cooperative, and liked each other more than in the conjunctive condition. This was probably because the disjunctive groups had to communicate and interact to establish when one team member could complete the task, whereas the conjunctive group members had to wait for everyone to complete the task before proceeding to the next task.

Bray, Kerr, and Atkin (1978) looked at gender and team numbers on team performance for easy, moderate and difficult problems. The problem required the participants to work out how to pay a debt using gold dust and a variety of containers with which to measure the amount. The problem increased in difficulty between conditions by using different containers which required more complex maths skills to be used. Participants were given problems to solve either as individuals or in gender specific teams ranging between 2 and 10 members. They found that in the easy condition groups performed better than the individuals but did not differ dependent on size or team gender. For the moderate problem, females scored worse than males and the worst performance came from groups of three. For the difficult problem condition, increasing group size produced no significant improvement in performance. It appeared that when an incorrect response was suggested by one member of a larger group, the rest of the group went along with the erroneous view rather than querying it. It was thought that some degree of social loafing occurred in the larger groups. Social loafing and freeloading become an issue the larger the team becomes (Karau & Williams, 1993). It is easier to hide in a big group and fail to pull one's weight. The larger the group, the less an individual can offer, as each individual is less likely to have unique skills or knowledge to offer to the team.

Team size can also affect quality in other areas. With more people in the team there are increased lines of communication. With three people in a team, there are three lines of communication: between team members 1 and 2, team members 2 and 3 and team members 1 and 3. As shown in Figure 2.1 by the time you have 8 members in a team there are 28 lines of communication and 45 links when the team numbers

rise to 10. This can lead to misunderstandings and so increased likelihood of intra-team conflict.

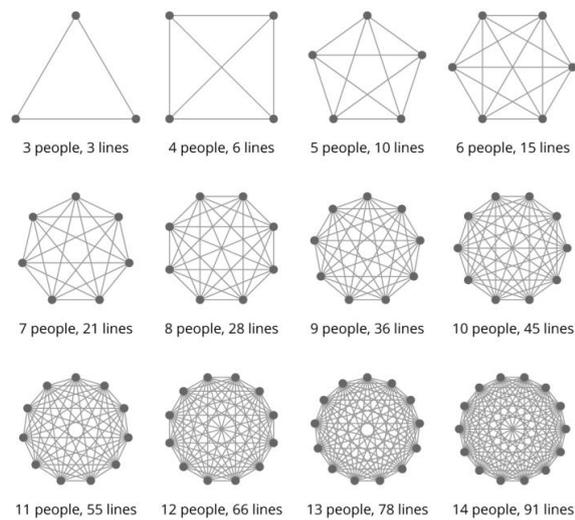


Fig 2.1: The increasing number of lines of communication as the team member numbers increase. Retrieved online from:

<https://images.search.yahoo.com/yhs/search?p=lines+of+communication>

Hoegl (2005) suggested that there is no absolute optimum size for team work as the size must of necessity depend on the task requirements. He found that for 58 software development projects the top five teams had smaller numbers of members than the bottom five teams. In addition the smaller teams with three members achieved better quality of work than those with six; and the teams of six in turn produced better quality than the teams of nine. The research suggested that teams should operate with the smallest number required for the task to be undertaken but that there is no definite specific number that works best for all tasks.

Mao, Mason, Suri and Watts (2016) ran a study in which 47 teams ranging in size from 1-32 took part in a complex task, using crisis mapping which aimed to be closer to real world team complexity rather than the simplistic tasks more usually carried out. Although that study was not actively looking at team numbers, they did

show a highly significant result that man hours were related positively to performance. They also noted that output per team member decreased as team numbers increased. They suggested that the lowered per capita output was due to social loafing, finding that the average effort from members in the largest groups was 30% below independent workers. However the researchers also found that the larger teams collaborated better and the negative effect of social loafing was offset by the improvement in the precision of the task.

The numbers within a team can therefore have harmful as well as beneficial effects on team output. Problems arising from greater numbers can be caused by increased communication avenues, social loafing and the free rider effect as well as groupthink but this can be offset by the ability within larger teams to learn from others, to be able to delegate tasks to suitable individuals and to be able to reduce errors in precision.

2.5: Team development

There have been many theories of team development put forward all of which concentrate on the different phases that teams pass through before achieving their aims. According to Van de Ven and Poole (1995), the types of process theories that show how change occurs in social entities fall into four separate categories: (1) life cycle models which show the changes that occur in the life time of the team (2) teleological models which describe the changes that occur as the group moves towards its goals. These teleological models assume the team is purposeful and adaptive taking whatever action is required in order to achieve its goals (3) dialectical models which interpret changes as a result of conflict between opposing members of the teams, leading to agreement. These teams develop as a result of the conflict, gaining sufficient momentum to force changes and (4) evolutionary models which suggest that changes occur as a result of natural selection of personnel within the organization.

The teleological and dialectical models are more appropriate to organizational teams which work together over a long period of time, allowing team members to adapt to any changing circumstances that the team encounters. The evolutionary models suggest that as the individuals change within the group, so the team develops in differing ways. The teams in the educational system last, at the longest, for one academic year and the teams are unlikely to have personnel changes within them. The teams all have one main goal to complete over the period in which they are operational and on completion they disband. Therefore, the most appropriate theories for this thesis are the life cycle models e.g. Tuckman's (1965) model, Tubb's (1995) system model, Fisher's (1970) theory of decision emergence and Poole and Roth's (1989) decision development theory.

Tuckman's (1965) model of team development proposed that teams develop in four distinct phases. Tuckman studied 55 articles looking at team development and inferred that the four phases started with the teams orientating to the task (forming), moved into a stage where there was an emotional response to task demands (storming) then a phase in which there was an open exchange of relevant interpretations (norming), finally followed by an emergence of solutions (performing). Tuckman and Jensen (1977) reviewed the literature to establish if Tuckman's model was supported by empirical testing and found much support for elements of the model. Many of the empirical studies found that four or five distinct phases of group development occurred although some found that certain phases may be combined. Spitz and Sadock (1973) cited in Tuckman and Jensen (1977) noticed three stages: first of dependency, curiosity and confusion; followed by the beginning of trust, cohesiveness, interdependence and group interaction; and finishing with disengagement which included anxiety about separation. Mann (1967) cited in Tuckman and Jensen (1977) reported five phases: (1) Initial complaining (2) premature enactment (3) confrontation (4) internalisation and (5) separation. Lacousierer (1974) cited in Tuckman and Jensen (1977) studied student nurses working in a psychiatric hospital who met weekly. They passed through an orientation phase, a dissatisfaction phase which was aimed at the hospital rather than each other, a production phase and finally a termination phase. Many of the reported studies showed a final phase in

which the team members had completed their tasks and the termination stage was concerned with sadness and self-reflection. Two of the reported studies (Heckel, Holmes & Salzburg, 1967 and Dunphy, 1968, both as cited in Tuckman & Jensen, 1977) however found only two phases but both of these studies had methodological issues: both used only therapy groups as participants who were managed to a degree by medical staff. As a result of the literature reviews although Tuckman originally viewed the performing stage as the end of the life cycle Tuckman and Jensen (1977) modified their theory and added a fifth stage in which the team had finished their tasks and the team broke up (adjourning).

Other life cycle theories include Tubbs' (1995) systems model which specifically studied small groups. He posited that there were four phases: (1) orientation, in which group members get to know each other and examine what the group needed to achieve by looking at the limitations and opportunities of the task (2) conflict, which is an important aspect of the group's development allowing ideas to be evaluated and avoiding groupthink (3) consensus, where the group compromise, select and agree on the route to be taken to achieve the task and (4) closure, in which the group has achieved its goals. Fisher's (1970) theory of decision emergence in groups also suggested that groups develop by moving through four phases: (1) orientation where they get to know each other (2) conflict in which the members argue and disagree with each other (3) emergence during which group members soften their viewpoints and become less dogmatic in defending their original positions and (4) reinforcement in which the group become supportive to each other. All three of these theories (Tuckman & Jensen, 1977, Tubbs, 1995, Fisher, 1970) have commonalities with each other, suggesting a linear path through to completion of a task but with slightly differing emphases. Poole and Roth (1989) suggested a different more complex model from those that move from stage to stage. They believed that group members alternate between two main tracks: (1) topic, in which the task is discussed and explored in order to achieve the goals and (2) relation, in which the group members discuss their selves, thereby learning about each other. The group switches from one track to another to sort out specific issues that arise either on the task or with interpersonal relationships. In the shifts between these tracks are breakpoints stages,

such as coffee breaks or postponements, which allow conversations away from the task to establish commonalities. These breakpoint adjournments can calm situations or allow time for research, in order to return the group to the task track. The problems with these cyclical theories are that they do not specify the time it takes to move through each of the stages, or how long the team needs to spend in any one stage before moving to the next.

All these theories suggest that teams pass through a variety of phases over time in which the individuals are able to get to know each other and each other's working methods and are able to establish norms for the team in order for them to be able to perform effectively as a single unit. This process of changing individuals into an effective cohesive unit takes time.

2.6: Team composition operationalization

Operationalizing team composition has in general been carried out using three different methods (Halfhill, Sundstrom, Lahner, Calderone & Nielsen, 2005). The most usual method is to calculate the mean or summed score for a variety of individual characteristics such as measures of team performance (Ancona & Caldwell, 1992), social cohesiveness, team conflict, member flexibility, workload sharing, team viability and team performance (Barrick, Stewart, Newbert & Mount, 1998), personality, task focus, group cohesion and performance (Barry & Stewart, 1997). This method can have problems as not only will an individual's characteristics in a small group influence the mean more than those of an individual in a larger group, but also one individual with an extreme outlier score can alter the mean disproportionately. Another method used is to look at how diverse the characteristics are in terms of variance: age, tenure, ethnicity (Tsui, Egan & O'Reilly, 1992) tenure, age (Ancona & Caldwell, 1992) and consensus of peer ratings of group members (Anderson & Kilduff, 2009). This is a useful method to use when the differences in the team make-up are masked by the mean. It is particularly beneficial when examining the effects of homogeneity of a specific trait on the team process. A third technique looks just at the highest and/or the lowest score for a particular trait within the team. This method is most often used

when looking at team outcomes that are particularly affected by one member of the group, for example: task performance in which participants were given either a conjunctive task or a disjunctive task to complete (Kerr & Bruun, 1983) and agreeableness and extraversion to see if one particularly disagreeable or extravert person within the group could make a difference to performance (Bell, 2007).

Team composition performance is affected by the nature of the task to be performed by the group. Steiner (1972) classified tasks into five types: additive, where the productivity of the team is dependent on the sum of the members' abilities such as a tug of war; conjunctive, where team performance is dependent on the weakest member of the group, such as a relay race; disjunctive, where the productivity is dependent on the strongest member, such as a quiz in which only one person needs know the correct answer to achieve the team's goals; compensatory, where the team mean is used to enhance performance in, for example, a guess the weight of an object where all team members' guesses are added together and averaged to enhance the accuracy of the guess; and complementary, in which each member of the team adds his or her specialism to the group. Each of these task types requires different aspects from the team. Disjunctive and conjunctive tasks are dependent on the efforts of the best (for disjunctive) or worst (for conjunctive) member of the team. For an additive task (in which all the individuals are required to input to the task) or a compensatory task (which needs every member of the team to perform at least at some level), the mean is probably the most useful technique. The variance technique is most useful for compensatory tasks which require diverse inputs e.g. forecasting which needs a variety of approaches to get a sensible estimate. In the case of a disjunctive task or conjunctive task, the maximum/minimum operationalizing technique is the most useful method as it is the best or the worst member that influences the end performance.

These groupings were supported by Hill (1982) who carried out a literature review of 139 experimental studies which shared outcomes consistent with Steiner's classifications. She compared studies in which individuals working together on group products were contrasted with individuals working separately on individual products. She studied whether groups were more effective than individuals in a variety of task

demands in six separate categories: learning concept attainment, concept mastery, creativity, abstract problem solving, brainstorming and complex problem solving. She found that levels of productivity varied as a function of task demands, member resources and group processes. In learning tasks, groups usually outperformed individuals using their abilities to pool resources, to correct errors and to use differing learning strategies. In creative tasks, the success of the group, as opposed to the individual, depended partly on the make-up of the group. If there were high achieving group members competing with high achieving individuals, the groups were more successful. However groups with only low achieving members or with one high achieving member performed worse than expected. Nevertheless, in general, the groups outperformed the individuals. In problem solving tasks, groups usually took longer to reach an answer but generally outperformed individuals, with incorrect answers being rejected by other team members, thereby arriving at a higher level of correct answers. With difficult problems, there was evidence of pooling of resources when no one member could answer the complex problem alone. Group outcome appeared to have been determined by the most competent group member, aided by an 'assembly bonus effect'² (p525). In brainstorming tasks, pooling of individual's ideas produced greater numbers of ideas than group interaction. With complex problems group success was superior to individuals' but not as great as was expected using statistical pooling models leading to some process loss.

Barrick, Stewart, Neubert and Mount (1998) used the input-process-output model as a basis for examining actual teams within bona fide companies. They studied 652 employees from within 51 work teams from four different organizations to see if the team composition was related to the team process and effectiveness. They used the three operationalizing techniques already discussed (mean score; variance diversity; minimum and maximum scores) and a variety of team outcomes as dependent variables (e.g. team performance as assessed by the supervisors; team conflict; viability; flexibility; cohesiveness and ability). They found that the scores from each of the operationalizing methods for some of the team/composition traits were

² Collins & Guetzkow (1964): Effective interaction allows group members to produce higher quality outcomes than those of the individual.

only moderately correlated, suggesting that each technique picked up different aspects of team composition. An example of this is that agreeableness was significantly correlated with team performance when measured by mean ($r=.34$) and minimum score ($r=.32$) but not significantly correlated using the maximum score ($r=-.06$) or the variance method ($r=-.08$). Choosing the appropriate method of operationalizing diversity characteristics seems to be a key decision based on the task being undertaken by the team.

2.7: Operationalizing team performance

Performance has many dimensions and judging performance of a team/company also depends on the point of view of the judge. Performance of innovative business groups can be measured in hard facts such as turnover, budget achievement or number of products marketed as key variables but their success can be judged by less well definable criteria such as communication levels between team members and others, which has been found to relate to performance (Allen, 1984, as cited in Ancona & Caldwell, 1992). Team potency (a team member's belief in the team's effectiveness) was positively related to individuals' self-ratings of effectiveness as well as the team managers' appraisals (Ilgen, Hollenbeck, Johnson & Jundt, 2005). Hence both team efficacy and potency are meaningful predictors of team performance.

In business settings many studies use performance ratings of team members from superior members of the company, either the supervisory or managerial team or the human resources department. These are often derived from post team event questionnaires assessing how the team performed in terms of efficiency, quality, technical innovation, adherence to schedules, adherence to budget and work excellence and the scores are either averaged or summed across all team members to get a team score (Ancona & Caldwell, 1992; Cohen & Ledford, 1994; Chowdhury, 2005). For example, Choudhury (2005) studying diversity in building effective entrepreneurial teams, adapted a questionnaire to measure team effectiveness, including both team outcomes and team behaviours. Each person rated his/her team on a 5-point Likert

scale and a composite score was calculated from team commitment, team-level cognitive comprehensiveness and team effectiveness scores. By averaging the scores from all the items, a single score was produced for each team. Cohen and Ledford (1994) studied the effectiveness of 84 self-managing teams within a telecommunications company. Three domains of group effectiveness were used: job satisfaction, group performance and group member behaviours. These were all measured by surveys given not only to the group members but also supervisors and higher-level managers. The higher level managers rated the performance differently to the group members and supervisors by rating the groups against all other groups in the organization that carried out similar work on quality, efficiency and overall performance. These management ratings were checked against company performance records to ensure they were grounded in performance data alongside on-job accidents, absenteeism and illness data.

Others have judged their performance in terms of commitment to team, interpersonal skills, initiative, knowledge of tasks, planning and allocation (Barrick, Stewart Neubert & Mount, 1998). Bray, Kerr and Atkin (1978) used the team members themselves to rate the team in terms of dyadic items such as pleasant-unpleasant, warm-cold, friendly-unfriendly, cooperative-uncooperative, serious-not-serious and goal oriented-not goal oriented. They used these six bipolar adjectives to assess the group atmosphere as well as testing the proportion of correct solutions to the tasks and the speed of solution.

Alternative methods have been used for judging team performance such as the team's profit made in the task (Chong 2007) or teams pitted one against another and the winner noted (Jackson, 2002). Chong's study (2007), although classroom based, was of team roles in relation to Belbin's³ team role inventory (1993). The team worked on a variety of eight tasks whilst operating as a management group, planning the production of custom-made paper bags that were sold to customers. Jackson's study

³ Belbin (1981): team success was dependent on having members who fulfilled eight specific roles within the team. Some team members can take on more than one role in smaller teams. Later this was altered to include a ninth role (Belbin, 1993): specialist, co-ordinator, shaper, plant, monitor-evaluator, implementer, resource investigator, team worker and complete finisher.

(2002) aimed to see if Kolb's⁴ (1984) learning cycle or Belbin's (1993) team role questionnaire were predictive of team performance. This was carried out on a two-day residential course from employees of a national insurance company. Therefore, although classroom based, this study was more reminiscent of a workplace study in that the participants worked together in their usual work groups within the organisation. Team performance was recorded by pitting two teams against each other answering a series of riddles, and from the answers, solving a clue and noting which team obtained the correct answer fastest. The main problem with this measure of performance success is that the dichotomy of the result (win: lose) meant that large or small differences in success were not recorded. Some of the differences between winning and losing were very small and yet were recorded in the same manner as a large difference.

Peeters, van Tuijl, Rutte and Reymont (2006) suggested that teams would differ based on whether they were a professional or a student team. In their view, professional teams would have greater experience leading to smoother co-operation between members and that the members would work together for longer periods of time, thereby building on longer term relationships. Teams that have been put together in classroom situations, as opposed to business settings, tend to have their performance judged by module grades or by member satisfaction either summed or averaged (Kamp, Dolmans, Van Berkel & Schmidt, 2012; Aggarwal & O'Brien, 2008; Barry & Stewart, 1997; Coglisier, Gardner, Gavin & Broberg, 2012; Dommeyer, 2007). On the whole, the method of aggregating the individual members' grades of educational teams' scores allows for subtle differences in teams' performance to be noted. It is hard in an educational team task to evaluate students without rewarding a poor performing individual with a high grade or downgrading an engaged student in a poor team. So various strategies can be embedded in the course which includes peer assessment and individual effort analysis alongside the mean grade for the team

⁴ The Kolb (1984) learning cycle: people learn using four different learning modes: learning by specific experience; learning by reflection, watching before judging; learning by thinking after having understood the issues intellectually; and learning by doing, taking risks. Kolb (1984) classified learners into different learning styles on how they combined these learning elements.

members. Braender and Naples (2013) found that a student's participation log which combined student usage (for example to upload journals, send emails and chat between team members) with teacher access correlated with team project grades and unearthed potential social loafers or free riders. This enabled teaching staff to objectively allocate grades to students.

Teams' performance can be judged in many ways but for educational teams task work grades are an easy and accessible method to execute. However the grades should have some mechanism to expose those team members who have failed to engage with the team goals to be exposed.

2.8: Team functionality

Ancona and Caldwell (1992) analysed 47 new product teams in high technology companies responsible for developing prototype products. They suggested that, although mixed functionality teams, in terms of tenure within the organisation as well as the percentage of team members from marketing, manufacturing or engineering, would add expertise in different areas, the mixing of functionality may make a group less effective. This is because the individuals from 'different worlds' may clash or have areas of difficulty in understanding or interpreting each other's ideas. They judged performance using a range of measurements including communication levels with others and managerial assessments of the teams' performance. They found a significant negative relationship between tenure and functional diversity. The more diverse the team, the shorter the period they stayed within the company. Greater functional diversity was associated with more external communication. The direct effects of diversity on performance were negative, particularly in managerial assessment and for the team's own ratings. Most of the performance ratings, however, came from self-report questionnaires which are subject to response bias, particularly when a company is paying a salary to the individuals concerned. Overall, Ancona and Caldwell (1992) found that functionality and tenure diversity can increase conflict, reduce cohesion and complicate communication within teams.

- Sonnenwald (1996), who studied teams of designers, developers and users of an IT project found that members of a multi-disciplinary group brought their own specialised pre-existing knowledge, language, expectations, motivations and perception of quality to the group which can add a myriad of issues to the team functioning. She referred to this as “contested collaboration”. To resolve it she proposed that a team required some time together to allow the members space to construct their own mutually workable world.

Chowdhury (2005) carried out a study on demographic diversity for building an entrepreneurial team. He suggested that although there would be benefits from a heterogeneous team in terms of creativity and innovation skills, there could also be conflicts which could result in a drop in the team’s performance. He looked at team level commitment and cognitive comprehensiveness (a measurement developed for this study which included “the team’s breadth of perspectives on the problem at hand, the size of the pool of potential solutions to examine, the extent of innovative ideas and the variety of criteria for evaluating a possible solution”, [p736]). These variables did show some positive influence on team effectiveness but he found that diversity variables such as age, gender and functional background had no significant impact on team effectiveness. Chowdhury (2005) did not base his evaluation of effectiveness on actual sales growth or turnover as the majority of the companies involved in the study would not share their sales information, but measured team effectiveness from interviews using a team effectiveness questionnaire which measured seven different aspects of team performance. This measurement was rated by the entrepreneurs judging the team’s behaviour with a significant correlation between the sales information of the 29 firms who did disclose the information and this effectiveness score which suggested good predictive validity. Chowdhury (2005) himself recommended that future studies should examine the deep level diversity of personality traits and thinking styles as he suggested that different personality traits would bring different cognitive abilities (e.g. extraverts and introverts will differ in their working team style). Although some studies have been carried out on individual entrepreneurs, very few other studies have been carried out on entrepreneurial team’s personality diversity characteristics (Chowdhury, 2005).

Bantel and Jackson (1989) studied seven aspects of team diversity: education, tenure, functional background, age, team size, and location and organization size. Innovation was operationalized as the number of innovation items (products, programs and services) the firms had developed, as determined by 21 industry experts. Heterogeneity was assessed using a coefficient of variance for interval level variables and Blau's index, $1 - \sum p_i^2$ where p is the proportion of team members in the category and i is the number of categories (as cited in Bantel & Jackson, 1989) for categorical variables. They showed that the functional background diversity within top management in banking increased innovative ideas, without causing communication or cohesiveness issues. Chowdhury (2005) suggested this diversity led to a broader understanding of the issues that may be faced and therefore reduces the likelihood of groupthink caused by excessive cohesiveness within the group (Janis 1972).

Therefore the research on heterogeneity or homogeneity of team members on a wide selection of functionalities is mixed. In many cases having a heterogeneous team can increase the ideas and innovative ability of the teams, by providing differing and wider viewpoints at critical stages. Team members each bring to the group their own specialised knowledge which can aid the team's ability to reach its goals. This however can be tempered with a possibility of communication problems and thus cohesion problems if the team members come from very disparate backgrounds. Unless these differences are resolved they can cause the team to clash. This resolution takes time before the team melds together as one unit with a shared philosophy on how to achieve the team goals. It seems, as Sonnenwald (1996) suggests, that given a while team members, with all their inherent differences, can unite together to enhance the team process. It is possible to create successful cross functional teams with a heterogeneous mix of team members when given sufficient time in order for the team members to get to know how other team members operate and to bond into a single unit.

2.9: Teams in Higher Education

According to the CBI/Pearson education and skills survey (2016) businesses look for graduates with the right attitudes and aptitudes to allow them to be

successful in the workplace. The survey showed that 87% of those businesses surveyed, from nearly 500 organisations, both large and small, ranked these abilities among the top considerations. The report found 81% of these businesses were satisfied with graduates' team working skills, with 79% satisfied with the graduates' problem-solving skills and 77% with their communication skills. Employers expect students in higher education to acquire transferable skills other than those solely pertinent to the subject being studied. According to a document for the Universities UK review of skills (2016) these transferable skills should include, amongst others, critical thinking, active listening, communication skills, coordinating with others, emotional intelligence, motivation, tenacity, resilience and ability to work in teams. Many of these skills can be enhanced by embedding team work into the higher educational structure of courses. Team work is therefore seen as an important employability skill that can, and should be mastered within the scope of higher education. These transferable skills will help graduates move more easily to the workplace, and the proficiency developed through the educational system should equip the students with relevant and desirable attributes for future employers. The report showed that almost 87% of graduates reported that a university education had enabled them to work effectively with others and confirmed the CBI/ Pearson report findings that 81% of employers reported satisfaction with their graduate recruits' team working skills. According to Adams and Laksumanage (2003), mastery of teamwork is the top desirable attribute for graduating engineering students and according to Aggarwal and O'Brien (2008) businesses expect their new hires to be able to work together collaboratively.

Work organizations spend huge sums in training individuals, teams, leaders and managers to be more effective in the workplace. For example according to Buckenmyer (2000), Motorola in the USA had spent \$30m per annum predominantly on team training. Work organizations have several advantages in creating effective work teams over the educational team. For a start, they usually operate over a long period of time. The same work team may carry out different projects but the team members often work together and are able to gain an understanding of how other team members operate. They have time to learn the team members' strengths and

weaknesses and can organize the team in order to maximise the advantages. If team members in organizations are highly committed and achieve success, there are usually company incentives that can be used as rewards, either by promoting the successful individuals or by rewarding them financially or with other incentives. Conversely, there are usually actions in place to deal with those poor performers within the team. None of these advantages or disadvantages are available for educational teams.

In higher education teams rarely stay together for more than one academic year, and more often are only operational for part of one academic semester. It is rare that in these teams the students get any formal guidance in how to manage an effective team. Bolton (1999) surveyed 199 students spread across eight courses in management, marketing and information systems at San Jose University. Although 72% of the tutors assigned students to project teams and 91% of these faculty tutors were on the whole satisfied with the method of tuition only 64% of the students were equally satisfied. 81% of the students reported that they received modest, limited, or no support from the faculty staff who revealed that their lack of guidance stemmed from a lack of time in class, uncertainty about how to help, a lack of preparation time, as well as a desire for students to learn on their own and perceptions that students do fine without help.

Buckenmyer (2000) believed that team projects in higher education were often highly unpopular with the students due to previous bad experiences. Their complaints included that university module teams were comprised of a number of individuals chasing their own personal agenda, that team members had differing grade expectations (one may be chasing a top grade whilst others would be content with a more mediocre grade), that team mates could social loaf or free ride, and that there was little the individual team member could do about these issues. They also felt that team members were unskilled at not only leading a team, but also handling conflict within a team and maintaining the team effort. In addition, they were unhappy that most classroom teams had little penalty against non-contributing team members and that finding suitable times to arrange meetings was often difficult with different students' schedules and commuting needs. These bad prior experiences with educational teams are not helped by poor teaching and grading in the team domain.

Volkov and Volkov (2007) claimed that teamwork skills within the Australian University system were unlikely to achieve the same purpose and motivation as will be found in the workplace. With enrolments in the University system increasing and staff numbers decreasing the submission of teams', rather than individual's, assessments can reduce the academics' marking workload. Volkov and Volkov (2007) also suggested that classroom based teams are not only associated with free riding and social loafing but also that because the teams often receive a universal team grade for their product this is tantamount to a form of plagiarism if some team members carry out more work than others. They also suggested that assessment of the team would be based on the course learning outcomes rather than learning good practices of team cooperation. This therefore suggests that teamwork is less designed for the students' benefit in acquiring workplace skills and more for the convenience for University staff members.

As team work skills are rarely taught to the students, it is not surprising that so many students find teamwork a chore as in many cases they have to find time outside of the classroom in which to achieve the team's goals. However there are some benefits that are recognised by students which, on the whole, are social. Increased time spent together can bond students and in a successful team can allow those bonds of support to carry on through the following years of study. Saloman and Globerson (1989) confirmed that a good team could "encourage externalization of thought processes, comparison of alternative perspectives, social facilitation and socially monitored attentiveness to the task" (p90). Poor experiences in team work however can show reduced effort, loafing and effort avoidance. They studied two tasks in which poor team performance had occurred, believing this could have been due to poor task choices, by the tutors, that were unsuitable for a team project. However different aspects of teamwork must also be taken into account, such as the time allowed for the team to develop into a social entity; that there should be time for a development of a shared motivation to work together; a developing coordination of mutual expectations; and a shared willingness to coordinate expectations. All of these take time to develop, something that tends to be lacking in short-term team projects in higher education.

Pfaff and Huddleston (2003) suggested that the reasons for using team work in the student experience were wide ranging, including that collaborative learning improves individual achievement as well as persistence in adversity, willingness to perform hard tasks, the ability to transfer knowledge and greater social skills. They also acknowledged that there were problems associated with working in educational teams. When students in a team divide the work up between the team members they can find they only fully understand the small area that they have been involved with and not the totality of the project. Students can become disruptive to the team's progress by not fully contributing, or by taking over as an overbearing leader. These issues can make some students find team projects an unhappy experience and may require an overseeing class tutor to step in and avert some of the problems. Pfaff and Huddleston (2003) found that predictors of positive experiences with student team work were the grades received on the projects, time spent within the classroom on the team activity, use of peer evaluations and absence of free rider problems. McCorkle, Reardon, Alexander, Kling, Harris and Iyer (1999) recognised that group projects within education can help reduce the work load of the instructor as well as making a more dynamic working environment. They referred to several benefits of team work for the students: communication skills, interpersonal skills, technical skills, cooperative learning, peer modelling and awareness of different perspectives. However they also identified problems arising which included: social loafing and free riding (the "sucker effect"), inadequate or unfair reward systems (which do not take into account disproportionate workloads), and transaction costs (such as time and money spent meeting with the team). Their study found that these problems were widespread amongst the students. Seventy-seven marketing students from a single business school were questioned about their recent group experiences of educational team work. Over 60% of those questioned felt the work load had been unequal, nearly 53% felt they had only learnt about their specific part of the project, and 65% felt free loading had been a problem and that the larger the group the more that free loading occurred. However 84% of the students felt there were some benefits in student groups in the development of teamwork skills.

Educational team studies vary enormously in how they are carried out. As shown in Table 2.1, some are experimental studies in which the teams are put together solely for the purpose of the study. These tend to run over relatively short time periods with tasks taking from as little as 10 minutes as in Harvey (2013) to 45 minutes as in Kikchuk and Wiesner (1997) and Anderson and Kilduff (2009) and four hours in Bowler, Woehr, Rentsch, and Bowler (2010). Other studies are carried out using teams that have been put together for an educational task as part of the module's requirements and these teams are operational for longer time periods of several weeks or months during the academic year. These longer duration teams are more akin to teams within the workplace. In the very short duration teams tasks tend to be predetermined tasks, to be completed within a specified time period set by the researcher such as points accrued playing a computer simulation game (Bowler et al, 2010). Alternatively ratings are given by the team members on aspects of the team and the tasks completed (Anderson & Kilduff, 2009, which looked at dominant behaviours of team members as judged by team member's self- reports and outside observer judgements). The longer period studies tend to be graded using a written piece of work submitted by the team members, either individually or as a group, as part of the module and assessed by university staff.

Table 2.1: Table showing a variety of educational team studies.

Study	No of teams	No of students	No of members/team	Age of team years(range/mean)	Length of study ran	time	Measurement Operationalized methodology
<i>Frank & Anderson (1971)</i>	64	288	2,3,5,8		15 minutes		Ratings: Group atmosphere, satisfaction, liking others, involvement
<i>Bray, Kerr & Atkin (1978)</i>	50	349	2,3,6,10		1 hour		Rating of group members
<i>Kichuk & Wiesner (1997)</i>	99	419	3	16-32	45 minute		Scoring key points on successful completion of tasks
<i>Barry & Stewart (1997)</i>	61	298	4,5		2 semesters		Averaged instructor rating of quality of performance
<i>Harrison, Price, Gavin & Florey (2002)</i>	144	562	2-9	19-55	9-14 weeks		Ratio to maximum possible grading by course tutor
<i>Janicik & Bartel (2003)</i>	48	238	4-5	19-22	12 weeks		Group written report aggregated + questionnaire
<i>Gevers, Rutte, & van Eerde (2006)</i>	38		3-5	21-25	8 weeks		Individual report grade average
<i>Peeters, Rutte, van Tuijji & Reynen (2006)</i>	68	310	3-7		1week- 13 weeks		Satisfaction with the team aggregate + dissimilarity ratio
<i>Anderson & Kilduff (2009)</i>	17 25	68	4	21 (SD=3.30)	45 minutes		Dominance rating: self report, peer rating, outside observer
<i>Schilpzand, Herold & Shalley (2010)</i>	31	107	3-5	27	14 weeks		Creativity rating
<i>Bowler, Woehr, Rentsk & Bowler (2010)</i>	71	142	2	20-48	2 x 2hr sessions		Points gained on computer space combat simulator
<i>O'Neill & Allen (2011)</i>	129	564	3-5	18.6 (SD=2.2)	6.5 months		Team performance composite of ratings
<i>Cogliser, Gardner, Gavin, & Broberg (2012)</i>	71	328	2	22.6 (SD=3.82)	12 weeks		Final group paper + member performance contribution
<i>Harvey (2013)</i>	29	87	3		10 minutes		No of ideas generated

Favor (2012) studied 718 adult students' perceptions of cooperative study teams at undergraduate, postgraduate and associate level business degree programmes. Between 74% and 85% of the students (dependent on academic level group) felt positive towards their teams, 75% perceived similar expectations of team performance, between 66% and 71% believed the work was shared fairly between team members and between 70% and 81% perceived low levels of conflict. Between 51% and 61% indicated a preference for teamwork, whereas only between 43% and 50% felt they learned more with their team than they would have done alone; between 56% and 62% perceived team work contributed positively to their learning. Although students were generally positive about teamwork, there were significant numbers of students who perceived teamwork in education negatively.

Halfhill, Sunderstrom, Lahner, Calderone and Nielsen (2005) carried out a review of 31 studies all looking at group personality composition and group effectiveness between 2002 and 2007. Although these were not necessarily solely educational team studies, 16 of them were laboratory studies mainly using university students as participants. The majority of studies were operationalized using the mean score of the individuals, followed by the minimum, maximum and variance scores. These approaches were also noted by Barrick, Stewart, Neubert and Mount (1998) who felt that the mean score of a characteristic assumed that the amount of a characteristic from an individual increased the collective pool of that characteristic, and that the minimum and maximum scores assumed that one individual could alter the group outcome. Among the studies in the review, the majority were operationalized using the mean score, then in descending order minimum, variance and maximum scores as well as a few that used the percentage above the mean score. Halfhill et al. (2005) found that there was a negative relationship between variance operationalization and group effectiveness, implying that the more heterogeneous the group becomes in terms of personality composition, the less well it will perform. It was also found that the laboratory studies showed weaker effects correlating performance with personality than did the field results. This is likely due to the lack of time that the teams spent together as it takes some time for personality effects to become influential.

Teams in education differ from those in the workplace in many ways, as outlined above, but the fundamental difference seems to be based upon time spent as a team, with educational teams usually having tight time constraints which affect how the teams pass through developmental stages. Thus the individuals are less able to understand how other team members operate. This therefore can affect the teams' abilities to function as a more cohesive unit.

2.10: Chapter Conclusion

The research into teams shows that team members have to adapt and tailor their performance to the task demands. Employers expect students to possess team work skills alongside their technical subject skills and cooperative learning is added into many modules taught in Higher Education. Teams typically allow for a higher level of performance than the individual can achieve alone. Team members need to interact, sharing information and cooperating in order to achieve their goals. There are no finite rules on the number of members to be optimal in a team; it is dependent on the types of team tasks to be undertaken as to how many members there should be to maximise performance. However it is imperative for successful team performance not to have teams with too many members for the task. It has been shown that with too large a team there are possible communication difficulties and increased opportunity to free ride or social loaf by team members, all of which can reduce team performance. Having a diverse mix of people within a team can both help and hinder a team's progress depending on how that diversity is managed. Individuals who are homogeneous in views can work well together, understanding how each other member works. Yet groups who are too homogeneous and who do not have members with a dissenting voice within the team can be subject to groupthink and make poor decisions, leading to reduced performance. Melding together disparate heterogeneous team members can improve team performance by adding in people with differing attitudes, beliefs and knowledge. It does, however, take time to embed people within a cohesive team environment.

The team members pass through various stages in the formation of a team; first the members have to get to know one another, they then pass through a phase of conflict as they vie for position and try to agree on the correct methodology to be used to reach the teams' goals. They then move into an achievement stage in which goals are reached before the team disbands and the individuals move on to their next task. Team members' camaraderie develops over time and the longer people in teams work together, the more team behaviours become the norm for them.

Time is a resource that is closely related to organizational productivity. According to Doob (1971) "... an operation is efficient when it is accomplished with the smallest expenditure of energy and time" (p.349). It takes time however for team members to meld and become cohesive as demonstrated in the following chapter which reviews research into the personality trait of time perspective.

CHAPTER 3:

Time Perspective: Literature review

Teams usually work to time constraints, either implicit or explicit, and there is typically an effort to use time effectively in order to achieve a team's aims. Temporal constructs are fundamental parameters of individual differences (Bluedorn & Denhardt 1998). These differences in how people behave in relation to time can influence both an individual's and a team's performance. Temporality has been studied in psychology primarily using three different approaches.

The first approach studies how people perceive time passing. On the whole people are able to measure the passage of time reasonably accurately. It has been found that people's perception of time passing does, however, vary in several contexts; such as emotions when, for example, there is something to dread, when time passes too quickly, or alternatively with something exciting to look forward to, or when boredom strikes, and time appears to pass very slowly (Droit-Volet & Meck, 2007; Friedman & Janssen, 2010); ageing (Craig & Hay, 1999; Carrasco, Bernal, Redolat, 2001; Block, Zackay, Hancock, 1998; Wittman & Lehnhoff, 2005); even differences in body temperature can alter an individual's perception of time passing (Wearden & Penton-Voak, 1995). There is evidence that this perception disparity occurs when events either capture attention or increase arousal, and a person diverts attention to or from the internal clock timer, which causes a subjective experience of time to either shorten or lengthen (Droit-Volet & Meck, 2007). This has been studied using drugs which increase arousal, such as cocaine, and those that decrease arousal, such as antipsychotics, both of which have been shown to alter the perception of time passing (Meck, 1996).

Another approach is the study of circadian rhythms, pacing styles and chronicity. All these approaches study how people prefer to work within a specific time period. There are those who are more alert early in the day and those that feel they are more active later in the day. There has been a large body of work to examine these phenomena (Horne & Ostberg, 1975; Pöppel & Geidke, 1970; Schmidt, Collette,

Cajochen, & Peigneux, 2007). Facer- Childs and Brandstaetter (2015) tested 12 hockey and football teams categorised into circadian phenotypes, analysed using wake up time, sleep time, sleep duration, periods of high and low activity, sleep inertia and meal times, and performance monitors using bleep tests, sprints and skills, and accuracy. They found that the individuals' circadian phenotype significantly predicted performance levels as well as peak performance times, and that it was the number of late circadian phenotypes in the team that exerted the strongest influence on peak performance throughout the day. This study was carried out only using participants in sports teams, which may differ considerably from educational teams, as sports teams usually operate outside the academic day. The sporting activities are often carried out in the evenings or at weekends thereby appealing to those with later circadian rhythms. Educational teams, on the other hand, run on an expectation about operating during set working hours, regardless of individual preferences. However circadian phenotyping may show some influence particularly in the morning sessions of team work.

Time not only affects behaviours when people want to work but also how they like to approach their work. Pacing style alters behaviour, with some who like to complete tasks as soon as they are assigned, others who like to nearly reach a deadline before they really are able to attack an assignment, and a further group who like to work steadily up towards a deadline (Gevers, Rutte, & van Eerde, 2006; Gevers, Mohammed & Baytalskaya, 2013; Crossan, Cunha, Vera & Cunha, 2005). Gevers, Rispens and Li (2016) found that teams that actively planned a temporal course to the conclusion of the task alongside a shared understanding of other team members' temporal preferences could buffer the differences created by different pacing styles of individual team members. They did not find a significant association between diverse pacing style and collaboration. However they did find a three-way interaction between pacing style, action planning and temporal familiarity, whereby there was a significant positive relationship between pacing style diversity and collaboration when action planning and familiarity were high. This suggests that teams benefit from an understanding and knowledge of how the individual team member approached time in their behaviours. This in itself will take time for the individual team members to get to know each other in order to understand those behaviours. Mohammed and Nadkarni (2011) showed that

pacing style diversity, as well as time urgency diversity, within a team can also be moderated by strong temporal leadership in which a leader regulates the flow of the tasks by implementing clear temporal schedules, thereby structuring, coordinating and managing the pace of the team tasks. This reduces the inter-team conflict of temporal interests, adjusting the work cycle of the individuals in order to achieve the teams' goals. Strong leadership with an understanding of temporal psychology can therefore improve team performance.

Chronicity involves how some people like to work on their allotted tasks. There are two types of chronicity as described by Hall (1959), monochronic and polychronic, which according to Bluedorn (2002) is defined as a trait-like variable. Monochronic people prefer to finish one task before beginning the next, finding it stressful if there are interruptions to the initial task, whereas polychronic individuals prefer to have several tasks running concurrently at any one time, happily switching between items (Conte, Rizzuto, & Steiner,1999). A combination of people with different chronicity traits working together could cause difficulties amongst the team members trying to accomplish a selection of tasks in order to reach a specific goal. Polychronic individuals are more flexible and more likely to alter modes of working in the short term by, for example, delaying or altering meetings when something else has cropped up, whereas monochronic individuals would finish a task before letting other issues encroach on their time. Bluedorn, Kauffman and Lane (1992) suggested that individual chronicity score was analysed alongside an organisation's departmental chronicity score thereby finding mismatches between group and individual time modes. By analysing both scores together more effective individual and team management can be employed.

A third approach for studying temporality is time perspective in which Zimbardo and Boyd's (1999) theory considers that the personal and social experiences that people have had in their past are consigned to different temporal frames which are used to form expectations and goals for both the present and the future. They based their theory on the psychologist and philosopher, Kurt Lewin's life space model (1942) which included the influence of both past and future on present behaviour. Therefore, an individual's experiences from the past and their expectations of the future influences their behaviour in the present. Zimbardo and Boyd (2008) wrote that time perspective

was a non-conscious process which reflected attitudes, beliefs and values related to time and that there were multiple dimensions of time perspective. They believed that each of the time perspectives were theoretically unrelated; a score in one factor did not by necessity relate to a score in another factor. In practice, though, the authors noted consistent patterns in individual time perspective profiles where there would be a tendency to overuse or underuse one of the temporal orientations, producing a bias towards being past, present or future orientated. These biases affect behaviour. Thoms (2004) reported that the temporal alignment of a leader was an important aspect in how a company performed. A future oriented leader's strengths included being motivational and looking for opportunities but the weaknesses included difficulty in dealing with the past and waiting for others to catch up with the plans. A present orientated leader has strengths in organisation of day-to-day aspects but may not see the opportunities ahead. A past oriented leader will be capable at seeing what has happened in the past and skilled at assessing strengths and weaknesses of other staff but will not be good at formulating strategy. Time perspective does however differ somewhat from other standard personality traits as it is affected by numerous learned factors such as culture, education, religion, social class and family modelling (Stolarski, Matthews, Postek, Zimbardo & Bitner, 2013).

Zimbardo and Boyd (2008) described two past time perspectives, two present perspectives and two future perspectives and suggested that, in the Western world, an individual's personal perspective was a combination of these six aspects. The two past perspectives (Past Positive and Past Negative) take how past events have been experienced and place the behaviours into the present time. If things have generally worked well in the past then there is an assumption by the individual that things will work out well in the present based on those past experiences. Conversely if things are recalled, whether accurately or inaccurately, as working out poorly in the past, then the behaviour for the present time will be based on that premise and there will be a belief that things will not work out well in the present or future. The two present subscales are Present Hedonistic and Present Fatalistic. Those that score high in the Present Hedonistic subscale reflect a "devil-may-care" approach to tasks, taking risks and living in the present moment, with little regard to what may happen next or what may have

occurred previously. Zimbardo and Boyd (1999) found that hedonistic college age students' sought novelty sensations, had high levels of energy, engaged in sports, preferred inconsistency in their lives, had weak impulse control, and were less conscientious than others. A high score in the Present Fatalistic factor reflected a fatalistic helpless attitude towards tasks, feeling that whatever effort is put into a task would make little or no difference to the outcome. Zimbardo and Boyd (1999) found that fatalistic college students were less concerned about the future, had less energy, lower self esteem, were less emotionally stable, less conscientious, and less happy but scored higher on novelty seeking. Finally the two future subscales are Future and Transcendental-Future. A high score in the Future subscale reflected behaviour that tends to work for a future reward at the expense of the present. These individuals are highly goal oriented, make longer-term plans and consider future consequences to their actions (Ashkanasy, Gupta, Mayfield & Trevor-Roberts, 2004). Mischel and Ebbeson (1970) carried out some classic studies asking around 600 young children to wait and not eat a marshmallow treat placed in front of them. If they managed to wait 15 minutes then, they were told, they would receive a second marshmallow. Many of the children in the original studies were tested several years later (Shoda, Mischel & Peake, 1990). It was found that those that had waited for the treat had better results at school and more successful SATS⁵ outcomes than those who could not wait for the future reward. The sixth time perspective (Transcendental-Future) is omitted from the main Zimbardo time perspective inventory scale (ZTPI) which was developed by Zimbardo and Boyd (1999) but is based on how people view life after the death of the physical body. People's present behaviour alters dependent on their view of an afterlife and the possible consequences. Reward or punishment anticipated after death can have a powerful effect on behaviour.

People ideally have a balance of the five original measures which allows them to derive motivation from their Present orientation, respect from their Past orientation and drive from their Future orientation (Zimbardo & Boyd 2008). Stolarski, Bitner & Zimbardo (2011) described this balanced time perspective as "a relatively complex

⁵ SATS- A standardised academic test widely used for college admission in the USA (originally called the scholastic aptitude test)

construct, emphasising harmony rather than a predetermined 'norm' which proved to predict huge amounts of variance of subjective well-being" (p348). This is the ideal temporal perspective in which the attitudes to past, present and future interlock depending on a situation's needs, demands and values. Zhang, Howell and Stolarski (2013) tested the hypothesis that people with a balanced time perspective would have a positive relationship with subjective well being. They measured time perspective by three different methods (categorizing by groups into low, moderate and high scores, hierarchical cluster method, and deviation from a balanced time perspective to see how much each factor deviated from the norm) but in each case a balanced time perspective was based on low scores in Past Negative and Present Fatalistic and moderate or high scores in the Future, Present Hedonistic and Past Positive scores. They showed that the more balanced an individual's time perspective was the higher was the life satisfaction. Webster and Ma (2013) found similar results by using the balanced time perspective scale and a measure of life satisfaction and happiness. It was also found that higher emotional intelligence predicted less deviation from a balanced time perspective (Stolarski, Bitner & Zimbardo, 2011). The reality, however, is that many people have an imbalance towards one of the subscales as a result of individual subjective experiences, and this imbalance can alter modes of behaviour when the biased perspective becomes the dominant way of behaving.

Horstmanshof and Zimitat (2007) measured student engagement of first year students at a university in Australia. Engagement was measured using questionnaires which were associated with a deeper understanding of their university work as opposed to a surface learning superficial understanding, such as memorizing content. The results showed a significant positive association with the Future time perspective orientation and academic application, academic orientation, meaningful approach, reproductive approach and hours spent. The authors concluded that Future orientation was a key predictor of academic engagement. The study however only looked at the Future time perspective orientation and did not examine the engagement of the other time perspective orientations. Simons, Vansteenkiste, Lens and Lacante (2004) reviewed papers studying the motivational importance of the differences in an individual's Future perspective. Several studies (DeVolder & Lens, 1982; Moreas & Lens, 1991, Lens 2001 as

cited in Simons et al, 2004) all found evidence that high school student motivation and Future time perspective were positively correlated. They used a different measurement of Future time perspective (FTP, DeVolder & Lens, 1982) which defined it as the present anticipation of future goals whereby people with short FTP set goals in the near future and those with long FTP set goals in the distant future and found that those with longer FTP were more motivated for distant goals and for nearer sub-goals.

Gupta, Hershey and Gaur (2012) studied time perspective and procrastination, which is viewed as a negative attribute which can impact heavily on others in a team situation. Four out of the five factors were predictive of procrastination. The Future score and the Past Negative score were both significantly negatively related to procrastination and the Present Fatalistic score and the Past Positive scores were both significantly positively related to procrastination. Only the Present Hedonistic score did not significantly correlate with procrastination. People high in Future orientation tend to be highly conscientious and those high in Past Negative tend to be more prone to anxiety so do not like to have things left undone that weigh on their minds. The Present Fatalistic positive correlation with procrastination fits with the belief that everything is predestined and cannot be altered as a result of one's activities and the Past Positive view that everything will work out well fit with the procrastination results of this study.

These different behavioural approaches have been shown to predict how people will deal with different task choices such as planning and decision making. Das (1987) studied people who worked in the commercial banking industry and were involved at fairly senior levels (executive and senior vice president, vice president and assistant vice president) in strategic planning. The time perspective variable was calculated by making a list of nine important events that would happen in the future, and to categorize each of those events into whether they would occur soon or in the far off distance. The planning horizon was the length of time that the individual considered as appropriate for drawing up plans for the bank in a specific area of electronic banking. Back in 1987, when the study was conducted, this was not as commonplace as it is nowadays. There were no significant differences between the three levels in terms of both individual time perspective or preferred planning horizons, showing that the more senior members of the organisation were not more future biased than those more junior. It was found that

those with a near future time perspective preferred a shorter planning horizon than those with a distant time perspective. However, although significant, the planning horizon preferences of the two groups were relatively small (2½ yrs for near future time perspective as opposed to 3yrs for distant time perspective with a mean of 2.85 years for all employees tested). Kivetz and Tyler, (2007) found that, when decisions had to be made that were close to the present day as opposed to decisions about an event in the distant future, participants were more pragmatic and less idealistic. However this applied primarily for the self and not when making decisions for others. In a range of five studies this was consistently shown to be the case. Distal time perspective was seen to activate an idealised self but the proximal time perspective activated the pragmatic self.

It is generally thought that diversity in a group will lead to a direct increase in the group output as the differences within the group will add a range of knowledge and approaches that will lead to greater creativity and quality of team performance (Bantel & Jackson, 1989; Harrison, Price & Bell, 1998; Harrison, Price, Gavin & Florey, 2002; Milliken & Martins, 1996). However some research shows that the reality is less clear cut (Ancona & Caldwell, 1992) as shown in Chapter 2. Harvey (2013) found that deep level diversity led to less creatively elaborated and integrated ideas. Although she noted an improvement in the number of ideas generated in the diverse groups they had less success in convergent ideas, integrating the ideas into a single concept. However her groups only worked together for a very short length of time (20 minutes) and the diversity was based on just one aspect of being primed in one of three different methods. Diversity effects, presumably, would take longer to show their effects than a mere 20 minutes.

It has also been shown in Chapter 2 that working with a diverse team can be difficult (Mannix & Neale, 2005). There can be difficulties in terms of communication, social integration and conflict within diverse groups, leading to poorer member satisfaction and poorer performance (Ancona & Caldwell, 1992, Tsui, Egan & O'Reilly, 1992). The similarity-attraction theory (Byrne, 1971, Newcomb, 1961, 1968, as cited in Mannix & Neale, 2005) predicted that those with similar attitudes are more likely to work well together by facilitating interpersonal attraction and liking. People will avoid communicating with those with different attitudes than themselves in order to reduce

conflict. Similarly social identity theory (Tajfel & Turner,1986) suggests that people self classify others as either part of their 'in-group' or part of the 'out-group' and that out-group members are judged more stereotypically than in-group members. This in turn makes heterogeneous groups show less attachment to one another than homogeneous groups and thereafter experiencing more conflict. Tsui, Egan and O'Reilly (1992) demonstrated this showing that the more demographically diverse the work teams were the less psychologically attached they were to the group, and the diverse groups had more absenteeism from work than those less diverse.

People with different time perspectives, who are working alongside each other, are likely to have issues with each other as to the fundamental approach to a task that has a specified deadline, thereby causing conflict and stress over when various tasks should be started or completed. As there are such basic behavioural differences between individuals with different temporal perspectives, as described earlier in this chapter, it seems likely that there could be misunderstandings, frustrations and conflict as a result of people with differing time perspectives working together in a team on a common task. Persistent differences in how team members think about and value time could influence team performance, both positively and negatively. Individuals with a Future perspective may believe that those with a Present perspective are lazy and fail to get on with allotted tasks, whilst those with a Present perspective may find those with a Future perspective to be overly demanding. Those with a high Past Positive approach will expect everything to go well where those with a high Past Negative approach would expect the worst.

Waller, Conte, Gibson and Carpenter, (2001) researched team members using the double parameters of both time perspective (Future versus Present factors) and low v high time urgency, resulting in four prototypes: Future perspective + low time urgency (they referred to these as visioners); Future perspective + high time urgency (these were referred to as organizers); Present perspective + low time urgency (these were called relators); and Present perspective + high time urgency (and these were referred to as crammers). They suggested that belonging to each of these different categories would influence a team's attention to deadlines. They theorised that teams comprised of visioners and relators would struggle to meet deadlines and teams composed of

organizers and crammers would be successful in making their deadlines, and that a temporal match between time urgency and time perspective for team members would aid team performance. They did not test any of their propositions, just theorised about them. In reality the combination of influences from these two temporal parameters is likely to be more complex than the neat groupings that they put forward as they theorized only about the extreme ends of time perspective and urgency dimensions whereas both are measured on continuum scales. Mohammed and Harrison (2013) looked at the team research based on four different aspects of time-based characteristics; time urgency (feeling constantly hurried), time perspective (cognitive bias towards past, present or future orientation), polychronicity (preference to multitask or just work on one task before starting another) and pacing style (pattern of working towards a deadline). They, like Waller et al. (2001), did not carry out any actual studies to test their various hypotheses but just discussed in their paper theoretical time based differences and how they envisaged these could affect the success of teams. They proposed that a diverse mix of time-urgent and time-patient individuals would be the best team for complex tasks, involving both decision making and action oriented tasks, and a low diversity team, made up of time-urgent members, for high coordinative complexity tasks. In terms of time perspective, action oriented tasks are best suited for those high in Present time perspective whereas high Future perspective individuals are better suited to decision making tasks. Mohammed and Harrison (2013) suggested a more diverse team would be able to balance the speed and need for future information effectively. For polychronicity they proposed that low diversity (i.e. more monochronic members) would improve the performance on exacting tasks, and higher diversity would increase the performance in action-orientated tasks. Finally for pacing style they believed that a diverse team would include those that perform with an early action assigned to tasks prior to deadlines, the steady members would keep the task moving forward and the deadline action style members would finish the task. However, if the task is highly dynamically complex a non-diverse team of steady members would be preferable. They suggested that laboratory or classroom studies should be designed to explicitly test these hypothetical differences, by either controlling team composition with high and low variability or by attempting to measure results using temporal individual differences within naturally occurring teams. They concluded that task

demands and task complexity were important factors in deciding whether a team should be diverse in these different types of time perspectives.

Horstmanshof and Zimitat (2007) studied the interrelationship between time perspective and academic engagement amongst a student population in Australia. They found that a higher level of Future perspective was a significant predictor of academic application (consistent working throughout the semester), study process (deep learning understanding rather than rote memory learning) and hours spent preparing for class in a 'first year at university' cohort. The students were split into two groups (under and over 25 years). The age split was performed as the younger group would have been in continuous education directly from school, whereas the older group were likely to have returned to higher education after different life experiences, and therefore may have atypical life style demands and challenges which could possibly contribute to differential student engagement. It was found, in both age groups, that students with an orientation to Future were more likely to report academic orientation and academic application; to adopt productive educational behaviourism, such as consistency in study behaviour; seeking advice from teaching staff; time spent studying outside class and deep rather than surface learning. There were however significant differences between the under 25s and the over 25s in terms of engagement and time orientation with the older students showing higher academic orientation, academic application, hours of preparation and deeper approaches to study. For older students (25+ years) academic application also correlated with their Future score but the researchers found that there were significant differences in time perspective between the older and younger students in respect of Past Positive (over 25s were lower scoring), Present Hedonistic (over 25s were lower scoring) and Present Fatalistic (over 25s were lower scoring) as well as the Future scores (over 25s were higher scoring). This suggests that time perspective may be a developmental process. Their study supported the idea that a high Future score contributed to academic achievement although the researchers only used first year undergraduate students as participants and made no mention of the numbers that had dropped out of university during or after the first semester or their relative time perspectives. These students who decided not to continue with their courses could have had time perspectives that challenged these findings. Only 430 students volunteered to

take part in this study out of a cohort of over 2,100. They had already taken part in two previous surveys. This begs the question if a certain type of student would respond to this type of recruitment which may not necessarily reflect the general student population.

The ZTPI has undergone vigorous exploratory analysis and shows good reliability, as indicated by Cronbach's alpha ranging between .74 - .82 and test-retest reliability from .70 - .90 for the sub-scales of the instrument (Ryack, 2012). These reliability ranges are however based on student populations rather than the wider public which may have some implications if dealing with a variety of age ranges. These studies are looking at students and therefore are from a similar population as the current studies.

There has been, however, some criticism of the ZTPI concept (Shipp, Edwards & Lambert, 2009). They believed that the ZTPI has some shortcomings. They suggest there is little evidence of construct validity with reported low loadings in exploratory factor analysis and high correlations amongst factors. According to Seijts (1998) the concept of the Future time perspective is unclearly defined and there is a dispute whether it is a stable dispositional construct as suggested by Zimbardo and Boyd (2008) or a cognitive construct capable of modification by both cultural influences and socialisation as the individual person ages. Zimbardo and Boyd (1999) suggested that people predominantly focus on either the past, the present or the future but Shipp et al., (2009) believed this places people into artificial time-focussed boundaries whereas the reality is far more complex with people with multiple temporal foci allocating their attention to past, present, or future to varying degrees, dependent on the circumstances and the role demands. Shipp et al., (2009) also believed that the ZTPI, although a measure in widespread use, has some shortcomings, primarily that the 56 item inventory includes some items that do not describe thinking about the past, the present or the future but that it also has some items that include time attitude (regret, worry, hope, nostalgia), and behaviours such as impulsiveness and risk taking.

In terms of time behaviours several of the time research areas have been studied using teams or work groups (pacing style: Gevers, Rispens & Li, 2016; chronicity: Bluedorn, 2002; circadian rhythms: Facer-Childs & Brandstaetter, 2015) but to date little

research has been carried out on teams using Zimbardo and Boyd's (1999) time perspective traits. This research addresses this, adding to the knowledge of how to improve the performance of a team in a higher education setting.

CHAPTER 4:

Time Perspective and Team Performance in Long-Duration Teams.

4.1: Introduction

This first study aimed to investigate whether the mean, minimum, maximum or variance of a team's individual members' scores for each of the Zimbardo and Boyd (1999) five time perspective factors is related to the performance, as measured by the class final marks, of a team of postgraduate students working together over the duration of one full academic year. This time period was chosen as studies in educational settings are unlikely to last longer than one academic year and it matches the longer lasting educational studies referred to in Table 2.1 in Chapter 2 (Barry & Stewart, 1997, O'Neill & Allen, 2011).

As shown in the literature review in the previous chapter (Chapter 3: p38 onwards), the Zimbardo time perspective investigates how the flow of time, the past, the present and the future, affects people's behaviour, influencing their actions and decisions. Zimbardo's time perspective becomes a psychological construct in which the future, the past and the present affect the current behaviour of an individual. It is seen by Zimbardo & Boyd (1999) to be a relatively stable dispositional characteristic although one that can be influenced by situational forces such as survival stressors. Boniwell and Zimbardo (2003) suggested those people who are Future oriented are prepared to work hard in order to achieve their long term goals, tending to be more successful, both academically and in their work life. They can, however, forget to enjoy the present in their pursuit for future rewards. Boniwell and Zimbardo (2003) described those with present orientation (particularly those high in the Present Hedonistic factor) as being more interested in what is happening today rather than looking at their longer term goals. The Present Hedonistic person lives in the moment, always seeking new sensations, thereby being at a higher propensity to risk (Jochemczyk, Pietrzak, Buczkowski, Stolarski & Markiewicz (2016). Those who are Present Fatalistically oriented believe that other forces beyond their own control influence their destiny, and are

resigned to be helpless in altering the quality of their life (Zimbardo & Boyd, 2008). Those oriented towards the past are associated with family, tradition and cultural influences. Those with high orientation to a positive past show behaviours from the premise that everything will work out well and those with high orientation to a negative past believing that things will not work well, regardless of their own input into activities. Time perspective has been shown to be predictive of many risk taking behaviours, such as risky driving (Zimbardo, Keough & Boyd, 1997), and substance abuse (Zimbardo, Keough & Boyd, 1999). These individual differences are likely to become more apparent to others during longer duration tasks. Although personality characteristics have been shown to affect team success (Anderson & Kilduff, 2009, Barry & Stewart, 1997, Bell, 2007) this has not previously been shown with time perspective behaviours.

This study examined whether having a high or low combined score, or a similar time perspective as one's fellow team-mates, aids the team-work process regardless of what that perspective is. Mixing people together, in a team, who have very different time perspectives represented, is likely to cause issues. This is especially true in an educational setting in which the teams have to work together to produce a specific outcome in a set period without necessarily having the time to develop good workable relationships between team members. It also tested whether having one person in the team with particularly high or low scores of a specific time perspective factor would aid or hinder the team in achieving the goals set by the university module leader for the teams of postgraduate students from the Kingston University Business School. These students worked together in teams running a business for one academic year and performance was judged by the mean mark received by the team members for their coursework achieved during the module.

As has been shown, people high in the Future factor take short term losses in order to achieve their goals in the future, so having a higher mean Future score within the team should aid performance as the individual team members have a greater propensity to work towards a future goal.

Hypothesis 1: There will be a positive relationship between the mean team Future scores and the mean team modular coursework results.

Those people high in the two Present factors (Present Fatalistic and Present Hedonistic) tend not to worry unduly about what the future will bring, preferring to focus on the present.

Hypothesis 2: There will be a negative relationship between the mean Present Fatalistic scores and the mean Present Hedonistic scores with the mean team coursework results.

People with high past orientation believe that everything does usually work out (high Past Positive) or not (high Past Negative) but that success has little to do with their input in a task.

Hypothesis 3: The two time perspectives of both Past Positive and Past Negative will not show a significant relationship with the mean coursework results.

Hypothesis 4: There will be a relationship between the relative homogeneity of groups with respect to each of the five factors of time perspective and success, as measured by the final mean team coursework scores.

The direction of the relationship it is suggested, may alter depending on which factor is homogeneous. Homogeneity among group members is often expected to improve team communication and reduce team conflict, but diversity can bring in extra skills and thus increase team creativity. Steffens, Trejesen, and Davidsson (2012) studied new venture teams finding that heterogeneous teams performed better over longer time periods (five years) but they were unable to support their hypotheses that homogeneous teams would perform better in shorter time lengths. They surmised that the diversity of a team improved its capabilities but only once the emotional conflict brought about by the diversity had been resolved. This study lasted one academic year and so it is hypothesised that for Future and Past Present the more homogeneous the team the higher the mean coursework score will be. However a team comprised of homogeneously high Present Fatalistic scoring and high Present Hedonistic scoring participants would be more likely to show a negative relationship with team success.

Team performance can be dependent on both the team composition and on the type of task being undertaken. If the task is a disjunctive or conjunctive task, which is

affected by the strongest or the weakest member of the team, then having a team member with exceptionally high or low scores on the time perspective factors could affect the quality of the work and how it is carried out. The tasks, carried out by the teams over the course of the year, had several different components to them as the team were learning how to run an entrepreneurial business together. If one member is particularly high in one of the time perspective factors, such as Present Hedonism, it is likely that they will be less likely to complete tasks satisfactorily and in enough time for connecting tasks to be begun.

Hypothesis 5: One person scoring high or low in the time perspective factors in the team may have a significant association with the team's performance.

4.2: Method

4.2.1: Design

A correlational design was used to see if there were any associations between the predictive variables of the five Zimbardo time perspective styles (Zimbardo & Boyd, 1999) and the criterion variable of the mean team marks awarded at the end of the module.

4.2.2: Participants

The participants were all Kingston University postgraduate students registered on a one year Masters degree course in the Creative industries and the Creative Economy. This is a multi-disciplinary course run by the Kingston University Business School. MACE (Masters in Creative Economy) was one module, worth 30 credits out of a total of 180 credits towards the postgraduate degree, which could be combined with modules in advertising, communication design, creative writing, design: product and space, fashion, film making, journalism, museums and galleries, or publishing. The MACE module ran from the end of September at the start of the academic year through to the beginning of the following September, and comprised one half day of lectures and seminars each week. These covered a variety of topics about product design, marketing and advertising, networking and product selling. The students formed teams at the

beginning of the year-long course and within the team prototyped a product and marketed it. The students had to keep a blog about their experiences, and at the end of the second semester of the year they wrote a reflective essay on the experiences of running a small start-up business.

Due to the small numbers of students enrolled on the MACE module in each academic year, group data was gathered over three separate years, 2010, 2013 and 2014. The structure of the course remained the same over the period of testing with the same module leader organising and marking the students over five academic years between 2010 and 2014. In 2015 the format of the class altered with a new module leader taking over therefore no more data was collected after 2014.

The teams were organised within each year group. The participants were able to self-select their teams early in the first semester of the relevant year from all the students who attended the module that year. They were advised by the module leader to make up multi-disciplinary teams, including people from the different disciplines of business and design in each team. One (out of 30 initially enrolled) of the MACE 2013 participants left the course before completion and 3 (out of 37 initially enrolled) of the MACE 2014 students declined to take part in the study so their team's data was calculated as a mean without those individual participants' scores being included. Over the three years that data was collected there were 22 of these long-duration teams, 1 with 3 members, 11 with 4 members, 8 with 5 members and 2 with 6 members in the teams. Table 4.1 shows the demographics of the students in the three different years during which data was collected.

Table 4.1: *Demographic information about the students who participated in the long duration team study.*

	2010	2013	2014	Total (all years)
No of students	36	29	34	99
No of teams	8	7	7	22
Gender: m/f	13/23	10/19	14/20	37/62
Age (<i>SD</i>) years	26.21 (3.7) *	24.76 (3.3)	24.91 (2.9)	25.27 (3.31)
Range (years)	21-35*	20-32	21-34	20-35
% English as 1 st language**	25	21	24	23

*This is assumed to be an underestimate as seven of the older participants declined to give their age

**All foreign students were required to reach an acceptable level of English language (IELTS level 6.5 or equivalent) in order to register with the University.

4.2.3 Materials

The Zimbardo time perspective (ZTPI) is a questionnaire with 56 statements using a 5 point Likert scale ranging from 1 *very unlike you* to 5 *very like you* (Appendix A). Statements number 9, 24, 25, 41 and 56 were reverse scored. The scoring instructions (Appendix B) split the answers into scores for each of the five time perspectives by summing the items loading on a particular factor and dividing the total by the number of items to get a mean score per time perspective factor. Scores on each time perspective factor therefore range from 1-5. The five factors of the ZTPI were established using factor analysis (KMO factor loadings, Appendix B) by Zimbardo and Boyd, (1999) and Cronbach's alpha were reported to range between .74 - .82 and test-retest reliability ranged between .70-.90 as reported in chapter 3.

4.2.4: Procedure

The long-duration team participants were invited to participate in this study as part of the class in the late October of the first semester of the course when the students had been working together in teams for one month. In the usual classroom setting a half-hour section of the class was used by the researcher to explain verbally about the research project, and distribute the ZTPI questionnaire along with a consent form and an information sheet. Any students who were absent that day were approached at a later date over the following four weeks before each class started in

order to collect the missing individuals' data. An informed consent sheet (Appendix C), each with a unique participant number, was distributed which was completed before the ZTPI was given to the participants. I remained nearby in order to answer any queries raised by the participants. On completion of the questionnaires the participants were given a debrief form (Appendix D). At the time of data collection I was unaware which participants were working together as part of the same team. In mid November the module leader gave me details in which team each participant was a member.

I calculated the five scores, one for each of the five time perspectives, using the ZTPI scoring sheet (Appendix B), and then categorized the individual scores by team calculating the mean, minimum, maximum and variance for each of the five time perspectives for each team. Barrick, Stewart, Neubert and Mount (1998) noted that operationalization of team composition is often achieved using a mean team score derived from the individual measures (Heslin, 1964; Williams & Sternberg, 1988). This assumes that the amount of the characteristic that each individual has increases the collective pool of that characteristic. However the problem with using a mean score is that one very high or very low score can distort the mean score. Additionally the variability of scores can provide insight when looking at the relative homogeneity of that trait within the team composition (Barry & Stewart, 1997, who looked at the proportion of a team's members who had a particular personality trait) and the extreme scores (minimum or maximum) may also influence team performance caused when, in some team tasks, one person scoring high or low can have a disproportionate effect on the team (Steiner, 1972, who pointed out that a poor team member on a production line can have an adverse result for all the rest of the production line team) . Although Barrick et al., (1998) looked at teams from four completely different types of companies and with numbers of people in the teams varying from a mean of 11.55 in organisation 1, 15.00 in organisation 2, 17.17 in organisation 3 and 5.40 for organisation 4. They found that each technique of operationalization captured unique information as discussed in chapter 2, section 2.5.

At the beginning of the September, following the start of the module the previous September, the module leader for MACE marked both the individual and the team and this final mark was used as the criterion variable. The MACE marked work was

assessed on three criteria. The first was through a group business report and final presentation in front of a panel of independent professionals. These were all local businessmen and women who had volunteered to hear the student presentations. They heard the presentations but did not decide on the mark, although their comments were taken into account by the module leader. This section was worth 60% of the total module mark. The second criteria was a social media and networking written report by the team, which covered how the students had used social media and networking to market their products and themselves (worth 10% of the total mark) and the third marking criteria was a self reflective individual essay based on posts from the student's blogs during the year (worth 30% of the total). The team business report and the presentation were judged by the module leader on the following five criteria: The business pitch, which covered how well the team delivered a six minute presentation; marketing, which included how the target market was chosen and how advertising materials showed the benefits of the product; finances, which included pricing strategy, profit and loss statement, and cash flow; ambition, customer relations and lessons learned which included: what was learned when goals were not met; how the team worked together to gain insight for key aspects of the business; sales and brand display merchandising and packaging, which included whether the packaging clearly communicated what the product was; if the display materials communicated the brand message; and whether the product was innovative.

The individual final marks were categorized by team and the means calculated. This is comparable to O'Neill and Allen's (2011) study in which team performance consisted of a composite of ratings on several key dimensions associated with an educational project. O'Neill & Allen (2011) also used mean personality scores in their study assessing the prediction of team performance finding that conscientiousness was a significant predictor. Halfhill, Sunderstrom, Lahner, Calderone and Nielsen (2005) carried out a literature review of 31 studies, between 1972 and 2002, involving some 1,400 groups with an average of five members, looking at group composition. The majority of these studies were operationalized using the mean score of the individuals followed by the minimum, maximum and variance scores.

4.3: Results:

A one way ANOVA was used to see if there were any significant differences between the individuals in each of the three year groups for any of the time perspective factors as well as the individual marks obtained at the end of the course, Past Negative – $F(2,96)=1.10$, $p=.34$; Present Hedonistic- $F(2,96) =1.36$; $p=.26$; Future- $F(2,96) =.56$, $p=.57$; Present Fatalistic- $F(2,96) =.76$, $p=.62$; Past Positive- $F(2,96) =.17$, $p=.84$; Individual mark- $F(2,96) =.48$, $p=.62$. No significant differences were found so all three year groups were combined to be used for the long-duration teams' study.

Table 4.2 shows the correlations between the mean scores on the five subscales of the ZTPI as well as the grade achieved for the individuals.

Table 4.2: *Pearson's correlation for the 99 individuals between the subscales of the Zimbardo Time Perspective Inventory and the individual grade mark.*

	1	2	3	4	5
1. Past Negative	-				
2. Present Hedonist	-.01	-			
3. Future	.03	-.04	-		
4. Past Positive	.04	.32**	.10	-	
5. Present Fatalist	.21	.22**	-.48**	.15	-
6. Grade	-.08	.06	.32**	.14	-.29**

* $p<.05$ ** $p<.01$

A significant positive correlation was noted in the individuals between the Past Positive and the Present Hedonism factors $r(97) =.32$, $p=.001$, and the Present Fatalism and the Present Hedonism factors $r(97) =.22$, $p=.03$, and a significant negative correlation was found between Present Fatalism and Future $r(97) =-.48$, $p<.001$.

The scores were calculated for the individuals within each team for the five factors of the ZTPI and then combined and averaged to make a mean team score. Table

4.3 shows the means, minimum, maximum and variance scores of the long-duration teams for each of the five Zimbardo Time Perspective factors. The average team mean marks collapsed across all three years were 63.74% ($SD = 7.54\%$, 95% CI [60.40% - 67.09%], minimum = 52.40%, maximum = 78.46%).

Table 4.3: Mean, minimum, maximum and variance scores for each of the five time perspective factors: Long duration teams ($N=22$).

	Past Negative	Present Hedonistic	Future	Past Positive	Present Fatalistic
Mean	2.82	3.53	3.45	3.45	2.60
95% C.I.	[2.71,2.93]	[3.40,3.64]	[3.34,3.55]	[3.34,3.55]	[2.50,2.70]
Min	2.10	2.79	3.00	3.06	2.04
Max	3.20	3.89	3.92	3.97	2.95
Variance	.06	.07	.06	.06	.05

The team data was normally distributed and was neither kurtotic nor skewed for four of the factors: Past Negative, Present Hedonistic, Future and Present Fatalistic (Kolmogorov-Smirnov (K-S) test, $p>.05$) however for the Past Positive factor scores, the K-S outcome showed $p=.003$. Converting to z scores the data was shown to be only slightly positively skewed (1.97) but not kurtotic (.20). Three of the teams were particularly high in Past Positive (teams 13 mean = 3.86, team 17 mean = 3.97 and team 19 mean = 3.91), team 19 was also notably low in Past Negative score (mean = 2.10) and team 6 was low in Present Fatalistic score (mean = 2.04) but all of these scores were within three box lengths of the factor's standard deviation. However, as the team numbers were small, non-parametric correlational analyses (Spearman's Rho) were carried out using the team mean scores for the ZTPI factors as the predictor variables and the mean marks received for the course as the criterion variable. Table 4.4 shows the correlations between the ZTPI subscales for the teams.

Table 4.4: Spearman's correlation between the subscales mean of the Zimbardo Time Perspective Inventory and the mean team mark for the 22 teams.

	1	2	3	4	5
1. Past Negative	-				
2. Present Hedonist	-.29	-			
3. Future	-.12	-.12	-		
4. Past Positive	.04	.35	-.18	-	
5. Present Fatalist	.05	.34	-.66**	.38	-
6. Grade	.10	-.09	.53*	.17	-.61**

*p<.05 **p<.01

A significant negative correlation was noted in the team data between the Future factor and the Present Fatalism factor $r(20) = -.66$, $p = .001$. A significant positive correlation was also noted between the grade mark and the Future and a significant negative correlation between the Present Fatalism score and the grade mark. As shown in Figure 4.1 (a) the long-duration team data showed a significant positive correlation between the mean Future score and the long duration team mean individual marks, ($r(20) = .53$, $p = .01$). This showed that 28% of the team mean score variance was accounted for by the mean Future score [$R^2 = .28$]. As shown in Figure 4.1(b) a significant negative correlation was also found for the mean Present Fatalistic score and the long-duration team mean individual marks, ($r(20) = -.61$, $p = .003$). This showed that 37% of the team mean score variance was accounted for by the mean Present Fatalist score [$R^2 = .37$]. The rest of the long-duration team mean ZTPI scores (Past Negative, Present Hedonistic, Past Positive) were not significantly correlated ($p > .05$) with the long duration team mean individual marks.

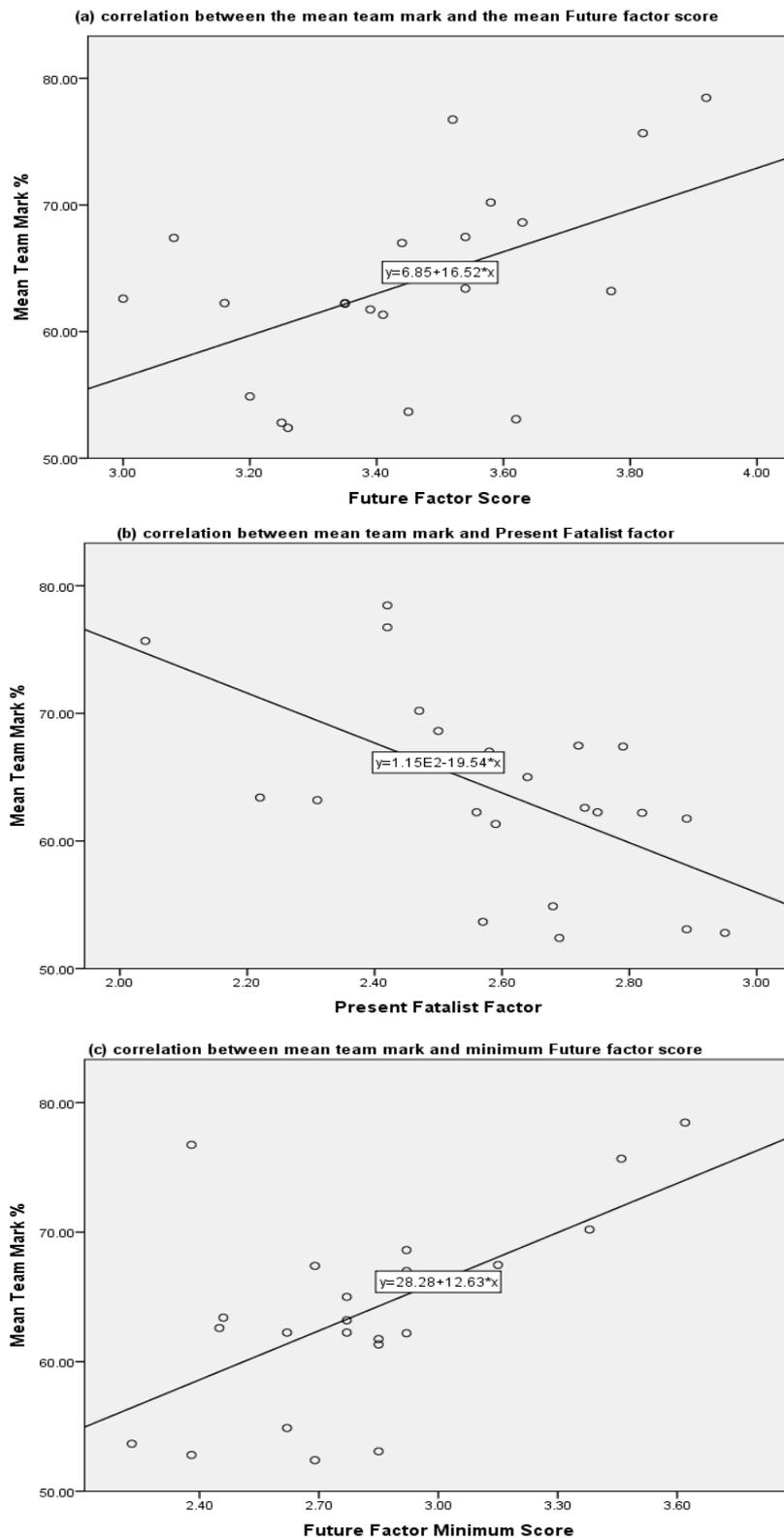


Figure 4.1: Graphs showing the relationship between the mean team mark and (a) the mean Future factor (b) the mean Present Fatalist factor and (c) the minimum Future factor score.

As shown in table 4.2 the variance, minimum and maximum scores in the Future and Present Fatalistic factors for each of the long duration teams were calculated. A Spearman's Rho correlation was carried out against the team mean individual results. The long-duration team data showed a very weak negative correlation on the cusp of significance with the Future variance ($r(20) = -.42, p = .05$). As shown in Figure 4.1 (c) a significant positive correlation with the Future factor minimum score ($r(20) = .47, p = .03$) was found. This showed that 22% of the team mean score variance was accounted for by the minimum Future score ($R^2 = .22$). There was no significant correlation with the Future maximum score ($p > .05$). There was no significant correlation noted with the Present Fatalism factor variance or the Present Fatalism factor minimum or maximum scores ($p > .05$).

4.4: Discussion

The results showed a positive significant relationship between the mean team marks of the long-duration teams and their mean Future scores, thereby supporting the first hypothesis. The results also indicated a negative relationship between the mean Present Fatalistic scores and the mean team marks, partly supporting the second hypothesis. The higher the team mean Future score and the lower the team Present Fatalistic score the better the performance of the team, although no relationship was found relating the Present Hedonistic factor to performance, thus not fully supporting hypothesis 2. No significant relationship was found with the Past Positive or the Past Negative mean scores and success as suggested in hypothesis 3.

There was a positive significant association between the minimum Future scores within the team and the marks achieved (as suggested in hypothesis 5) and a nearly significant negative association between the variance of the Future time perspective factors and performance (as suggested by hypothesis 4). This suggests that the higher the minimum value of the Future factor represented within the team the better the performance. Halfhill, Sundstrom, Lahner, Calderone and Nielsen, (2005) in their review of group effectiveness and personality composition showed that there was a negative relationship between group effectiveness and the variance operationalizing

methodology, finding that the more heterogeneous a group the worse its performance. As suggested in hypothesis 4, a similar effect was found in this study although not quite at the significance level. Increasing team numbers to make a more statistically powerful study may resolve this issue one way or the other. Having different degrees of Future time perspective represented among the people in a team working together is likely to cause some conflict concerning when tasks are to be completed. Over the year that the teams were operating this disharmony may well have impacted to some degree on the teams' performance.

The variance, maximum and minimum of the Present Fatalism scores showed no significant correlation with the teams' mean mark suggesting that having team members that are heterogeneous or homogeneous in the Present Fatalistic factor does not impact on the team performance or that having a team member with a particularly low or high Present Fatalistic score does not help the team to perform better or worse. This therefore does not support hypotheses 4 and 5.

Steiner (1972) developed a theory regarding productivity losses in larger teams explaining that process losses in tasks were caused by motivation and coordination losses. These occur when individual members are not motivated to perform the task. The larger the team the more likely the team members are to experience motivation loss. This was supported by Mueller (2012) who found that relational losses, in which individuals within a team did not feel they were helped, supported or aided as well in larger teams as they are in smaller teams, mediated these process losses. This led to individuals performing less well in large teams than in smaller teams. Amason and Sapienza (1997) found that team size was related to both cognitive and affective conflict in top management teams: the greater the number of people in a team the more conflict there can be. Cognitive conflict is related to the task, and arises from differences in perspective. This can be beneficial in team decision making. Affective conflict relates to personal disputes, and is primarily emotional; it tends to be detrimental to the team. In this study all of the teams were relatively small (3-6 members) and this could mean that the variations had less effect on the team performance than might be the case in a larger team. With a larger number of people there could be more conflict if similar people within the team gather together to try and alter the dynamics of the team,

whereas if there are smaller numbers there is less likelihood of people “ganging up” on others.

Having a higher mean score for the Present Fatalistic time perspective was negatively related to team marks. People who score high in Present Fatalism feel that whatever they do the result will be the same, and therefore they are less likely to contribute to the team’s requirements. Van Beek, Berghuis, Kerkhof and Beekman (2011) demonstrated that there was a significant negative correlation with the Present Fatalism score and self control, identity integration, responsibility, relational functions and social concordance. They also found a significant negative correlation with extraversion and conscientiousness, and a positive correlation with neuroticism. Ferrari and Diaz-Morales (2007) showed a positive association between the Present Fatalistic score and procrastination and a negative association with procrastination and Future score in Spanish middle aged participants. The researchers studied both arousal procrastination (procrastination caused by a failure to begin a task) and avoidant procrastination (procrastination motivated by fear of success or failure) both of which were highly correlated with each other. Whilst the participants in the present study were younger than the Spanish participants (and the Spanish participants were studied as individuals) it suggests that the team members high in Present Fatalism were also more likely to procrastinate rather than get on with the job required. Ferrari and Diaz-Morales (2007) study showed a negative association between the Future score and procrastination which is also evident in the present study: the teams high in the Future factor were more successful than those lower in the Future factor.

There were only a few teams in this study but the team numbers were reliant on the numbers of students enrolling in the modules over the three years in which the study was conducted. Other studies have also been carried out with small numbers of teams comparable to the 22 in this study. Anderson and Kilduff (2009) ran two studies, the first with 17 teams and the second with 25 teams. They found that people who rated high in trait dominance were rated as more competent by their group peers than those rated low in trait dominance. Furthermore Schilpzand, Herold and Shalley (2011) studied the effect of personality on teams’ creative performance using 31 educational project teams made up of 107 post graduate students in business and engineering, and Harvey (2013) studied the effects of team diversity on group creativity using participants that

were randomly assigned in groups of three in 29 teams. All these studies were studying team composition using personality traits and used similar numbers of teams as in this study.

Future research should examine whether the same effects of time perspective are seen in teams that work together for a shorter length of time. In this study the team members were together for one full academic year and the team project was the main basis of the module class. The mark received was derived solely from the team output. However many group projects, within an educational setting, last for a shorter duration and are only one aspect of the module's marking criteria. It has been noted that both the team mean Future score and the team mean Present Fatalist score can have an effect on the team mean mark when the team is functioning for a long duration so teams that are operational for a shorter length of time can show if these factors also could affect the likelihood of success.

4.5: Chapter Conclusion

In a long duration team that worked together for a year a significant positive relationship was shown between the mean Future factor and the teams' performance. Those teams with members with higher average Future factor scores fared the best. Having a member with a low Future score affected the performance of the team poorly. Those teams that had less variation in Future scores amongst its members also performed better than those with a wider variation of Future scores amongst its membership although this result was only on the cusp of the significance level. A significant negative relationship was noted between the mean Present Fatalistic factor and the teams' performance in the long duration team.

CHAPTER 5

Time Perspective and Team Performance in Medium-Duration Teams.

5.1: Introduction

Having established that educational teams that worked together for the duration of one academic year showed an effect of time perspective on the performance of a team this study aimed to test whether time perspective alters the performance, as measured by class marks, of an educational team working together for a shorter length of time than the previous study. These medium-duration tasks match previous studies in educational settings that lasted for about one academic semester (Janicik & Bartel, 2003; Harrison, Price, Gavin & Florey, 2002; Gevers, Rutte & van Eerde, 2006). Placing people, that have very different time perspectives, together in a team is likely to cause issues. This is particularly apposite in an educational setting in which the teams must work together to produce a specific outcome in a relatively short period, possibly without having had sufficient time to fully develop successful working relationships between each of the team members. Therefore, this study also aimed to establish if various aspects of time perspective, including whether having a similar time perspective as one's fellow team-mates, aids or hinders the team-work process regardless of what that time perspective is.

The primary function of team-based learning in higher education is to provide students with the opportunity to practice the course concepts, in a realistic experiential manner, using those taught concepts to solve real life-like problems. These team assignments are designed to promote learning and team development (Michaelsen & Sweet, 2008) and are often of quite a short duration, fitting into a course or modular system within one semester of an academic year. Druskat and Kayes (2000) studied 26 M.B.A., heterogeneous, educational, project teams engaged in conducting a literature review, collecting and analyzing data, and writing a report on the findings over a 10 week period. They found that three processes predicted team performance: interpersonal understanding, i.e. an understanding of other team members'

preferences, concerns, situations and strengths; pro-activity in problem solving by anticipating and preventing potential problems before they occurred; and confronting members who break norms which produced a negative association with team performance. This last predictor suggests that in these short duration teams conflict does not lead to a satisfactory conclusion as there is insufficient time to resolve issues. This is contrary to most of the team developmental theories which include a conflict phase (Tuckman, 1965; Fisher, 1970; Tubbs, 1995). Druskat and Kayes (2000) also found that team learning was not significantly related to team performance in these shorter duration team tasks. This study therefore investigated whether there was an effect of time perspective on team performance in a project lasting only a few weeks as opposed to the one year project reported in Chapter 4.

It was hypothesised that there would be a positive relationship between the team Future scores and the team modular scores of teams that work together for a few weeks, similar to that observed for the teams that worked together over an academic year, reported in the previous chapter. It was also expected that there would be a negative relationship between the Present Fatalistic scores and the modular score as was also found in the long-duration team study. Although it was not found in the long-duration team study it was expected that there would be a negative correlation with the Present Hedonistic scores and the team modular scores of these medium-duration teams as the influence of the more hedonistic members of the team is likely to delay the team from working effectively whilst they enjoy the non-academic activities offered by the university rather than progressing with the task in hand. In a shorter period of time this could influence the success rates, whereas in a longer task the effect would not be as noticeable when other, less hedonistic, team members could carry out the relevant work. Ferrari and Diaz-Morales (2007) showed that avoidant procrastination was associated negatively with Present Fatalism whereas arousal procrastination (the delaying of a situation to get the sensation seeking rush of a last-minute deadline) was positively associated with Present Hedonism. Gupta, Hershey, and Gaur (2012) also found that scores on four of the five ZPTI factors were predictive of procrastinatory behaviours in the workplace. Procrastination had a negative relationship with Future but a positive one with Present Fatalism. However, the one factor that they found did not

predict a significant relationship was Present Hedonism despite the hypothesis that there would be an association for this variable. They suggested this was because the hedonists' tendency to spontaneity and their optimism, energy and impulsiveness may have offset their tendency to procrastinate (Steele, 2007). In this study, however, it was hypothesised that because of the shorter time to reach the team goals and the end of the team task there would be less time to react in order to overcome the hedonists' arousal procrastination preferences and thereby for the team to react to the delays. Finally it was expected that there would be a relationship between the relative homogeneity of groups with respect to each of the five factors of time perspective and performance, as measured by the final mean team module scores of the mid-duration teams. The direction of the relationship may possibly alter depending on which factor is homogeneous but for Future and Past Present the more homogeneous the team the higher the mean module score would be. However a team comprised of homogeneously high Present Fatalistic and Present Hedonistic participants would be more likely to show a negative relationship with team performance.

5.2: Method

5.2.1: Design

A correlational design was used to see if there were any associations between the predictive variables of the five Zimbardo time perspective styles (Zimbardo & Boyd, 1999) and the criterion variable of the mean team marks awarded to the individuals at the end of the task.

5.2.2: Participants

The participants were 66 postgraduate students, one of whom subsequently decided to withdraw their data from the study so all the data from that participant was omitted from the data set. They were all registered on a one year Master's research methods course in Psychology, run by the Kingston University Faculty of Arts and Social Sciences in 2013. Thirteen of the participants were male and 52 were female. The mean

age of the participants was 28.5 (SD=8.4) years ranging from 21-53 years. 71% of them had English as their first language. The students attended one research methods lecture and one statistics laboratory class each week for two semesters starting in September of the academic year. The research methods module was worth 30 credits out of a required 180 credits towards their final Master's degree. The participants received 20 'SONA' course credits towards a departmental research participation scheme, whereby all psychology Master's students were required to gain a minimum of 240 'SONA' points, in total, by participating in psychology studies as part of their degree requirements. Participants took part in other students' and psychology staff research in order to gain the 'SONA' credits whereby 1 minute of participation = 1 'SONA' credit. After receiving 240 'SONA' credits they were awarded 5% towards their final mark for the research methods module.

The participants were able to choose their team members in the second week of the second semester of the academic year but they had to choose people from the same research methods module class to which they had been randomly assigned at the outset of the academic year. Anyone who was not able to find a group was randomly assigned to a team by the module tutor. In total there were fourteen teams, seven with four members, five with five members and two with six members in the team. The project teams worked together for approximately ten weeks during the second twelve week semester.

As the team numbers were small, a second cohort was invited to participate two academic years later in an attempt to increase the numbers of the teams in the study. The 58 participants (seven were male, and 51 were female) who took part were placed in 11 teams and data was collected from them in the same procedure as had been carried out with the first cohort. However in this second cohort there were many unexpected complications. Four of the participants, placed within different teams, failed to submit their report on time. They received either mitigating circumstances from the university mitigating circumstances panel or had to complete a retake on a completely separate item of work. One team of five members worked as disparate entities as they could not agree on a united topic, so although they collected data as a group they submitted substantially differing reports. The remaining extra teams were marked on a

different system (computer rather than hard copy with differing criteria) and the overall marks which ranged from 32% - 85% in the first cohort ranged between 50% – 85% from those teams from the later cohort that submitted the coursework. As there were several issues with this second cohort it was therefore decided to omit the extra teams from this thesis and concentrate on the results using just the first cohort's data.

As a compulsory aspect of their course the participants all had to work together in teams for a period of ten weeks from week two of the second semester of the academic year until week eleven. Their task was to design and run a psychology experiment, formulating the research question, creating any required material, gathering the data and analysing it together as a team and finally writing up the research as an individual. This task was worth 40% of the total module mark, the rest being made up from another laboratory report worth 25%, four in-class tests together worth 30% and a final 5% from having completed 240 minutes of participation in other departmental psychology studies. Only this task result was used for the estimated performance rate for the teams.

5.2.3: Materials

The Zimbardo Time Perspective inventory (Zimbardo & Boyd, 1999) (Appendix A), as used in the previous study was given to the participants along with an informed consent sheet (Appendix D) with a unique participant number. A debrief form (Appendix E) was given after the questionnaires had been completed.

5.2.4: Procedure

The participants were approached during their research methods seminar class, in their usual computer laboratory setting, in week two of the second semester of term. A brief verbal outline of the project was explained to them, and after the information sheet had been read and the consent forms had been signed, they were given the ZTPI questionnaire to be completed. This was followed by the debrief forms in the same

manner as the long-duration study participants in the previous study. Any students who were absent that day were invited to take part at the beginning of subsequent classes until all those students, who were happy to take part, had participated. All the initial data was collected within a three week period. After the data was collected the team to which each participant belonged was noted. The participants received 20 'SONA' credits for their participation. The time perspective scores were calculated in the same way as the scores for the long-duration teams using the scoring sheet (Appendix B).

At the end of the second semester an individual written piece of work based on the group project was used as the criterion variable, by taking the mean of the teams' individual members' results. The participants' final grade was based on their individual laboratory report mark, which was initially marked by the tutor and double marked by the module leader. A selection of these marks was moderated by an external examiner. An additional experienced marker also marked the teams' laboratory reports looking only at the ideas generated by the team (as opposed to the specific course requirements for a good laboratory report), to establish if the team had had good or novel ideas for their group research projects. These marks significantly positively correlated with the final marks for the psychology participants' team mean scores, ($r(12) = .70, p = .01$), and so the final marks were used as the criterion variable. The individual final marks were sorted by team, and a score of mean mark was calculated for each team as had been carried out in the long duration study previously and as had been reported by Halfhill et al. (2005) and used in O'Neill and Allen (2011) study.

5.3: Results

The scores were calculated for the individuals for each of the five factors of the ZTPI and then combined to make a mean team score (Halfhill et al., 2005). The team data were normally distributed and were neither kurtotic nor skewed (Kolmagarov-Smirnov for all five factors, $p > .05$). Table 5.1 shows the mean, minimum, and maximum scores and the variances of the 65 individual participants for each of the five time perspective factors and the final mark.

Table 5.1: *Individual team members: Time perspective and final marks mean, minimum, maximum and variance scores. The SD is given in parenthesis and the 95% confidence intervals are in brackets.*

N=65	Past Negative	Present Hedonistic	Future	Past Positive	Present Fatalistic	Final Mark
Mean (SD)	2.86 (.80)	3.41 (.55)	3.67 (.50)	3.57 (.63)	2.41 (.63)	62.60(11.39)
C.I. (95%)	[2.66,3.06]	[3.28,3.55]	[3.54,3.79]	[3.42,3.73]	[2.26,2.57]	[59.77,65.42]
Min	1.40	1.67	1.69	2.33	1.00	32.00
Max	4.80	4.60	4.69	5.00	4.00	85.00
Variance	.64	.30	.25	.40	.39	129.81

Table 5.2 shows the correlations between the mean scores on the five subscales of the ZTPI as well as the grade achieved both for the individuals. Significant negative correlations were noted between the Present Hedonistic and Future factors ($p=.02$) and between the Future and the Present Fatalist factors ($p= .005$) and significant positive correlations were noted between the Present Hedonist and the Past Negative factors ($p=.003$); the Present Fatalist and the Past Negative factors ($p=.001$); the Present Hedonist and the Past Positive factors ($p=.01$); the Present Hedonist and the Present Fatalist factors ($p=.001$); and the individual's mark and the Present Hedonism factor ($p=.01$).

Table 5.2: *Pearson's correlation for the 65 individuals between the subscales of the Zimbardo Time Perspective Inventory and the individual grade mark.*

	1	2	3	4	5
1. Past Negative	-				
2. Present Hedonist	.36**	-			
3. Future	-.22	-.28*	-		
4. Past Positive	-.07	.32**	-.03	-	
5. Present Fatalist	.40**	.41**	-.34**	.11	-
6. Grade	-.20	-.31*	.14	-.15	.21

* $p<.05$ ** $p<.01$

Table 5.3 shows the mean, minimum, and maximum scores and the variances for each of the five time perspective factors and the final mark for each of the fourteen teams that the participants were members of.

Table 5.3: *Team data: Time perspective (Past Negative, Present Hedonistic, Future, Past Positive, Present Fatalistic) and final marks mean, minimum, maximum and variance scores. The SD is given in parenthesis and the 95% confidence intervals are in brackets.*

N=14	Past Negative	Present Hedonistic	Future	Past Positive	Present Fatalistic	Mark
Mean	2.86 (.43)	3.41 (.26)	3.67(.25)	3.57(.38)	2.41(.28)	62.40(5.43)
C.I. (95%)	[2.61,3.10]	[3.25,3.55]	[3.53,3.82]	[3.33,3.78]	[2.26,2.59]	[59.26,65.53]
Min	1.96	2.97	3.25	2.69	1.89	50.50
Max	3.66	3.79	4.19	4.33	2.89	69.60
Variance	.19	.07	.06	.15	.08	29.48

As the team numbers were small non-parametric correlational analyses (Spearman's Rho) were carried out using the team scores from the predictor variables (ZTPI factors) and the mean marks received for the course (criterion variable). Table 5.4 shows these correlations by team. The only significant correlation was a positive correlation between the mean grade mark and the Present Fatalism factor mean score.

Table 5.4: *Spearman's Rho correlation between the subscales mean of the Zimbardo Time Perspective Inventory and the mean team mark for the 14 teams.*

	1	2	3	4	5
1. Past Negative	-				
2. Present Hedonist	.28	-			
3. Future	-.01	-.22	-		
4. Past Positive	-.17	.34	-.28	-	
5. Present Fatalist	.31	.24	-.34	.04	-
6. Grade	-.28	-.21	.31	-.32	-.55*

*p<.05 **p<.01

Table 5.5 shows the results of the correlations between the five time perspective factors and the variance of the team members in each of the factors as well as the highest and lowest scoring members' scores.

Table 5.5: Spearman's Rho Correlations of time perspective factors (Past Negative, Present Hedonistic, Future, Past Positive, Present Fatalistic) and team mean marks.

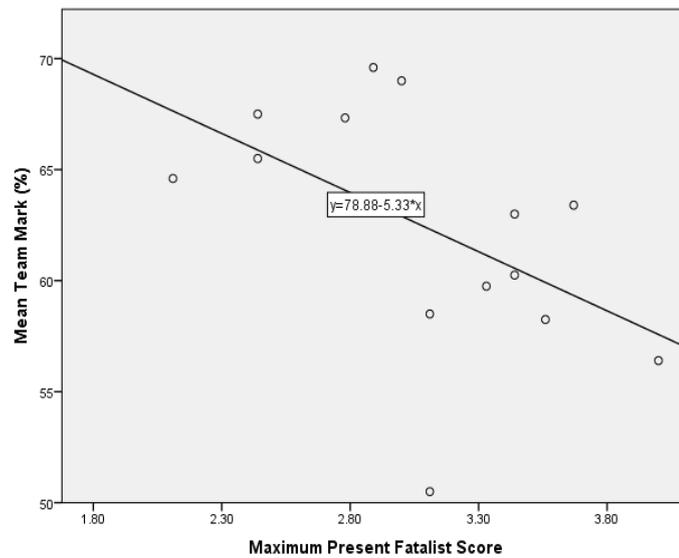
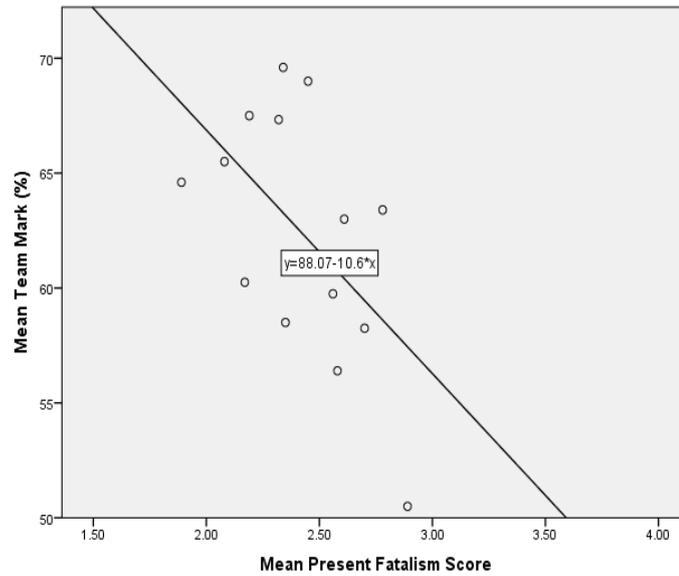
Team Mark	Time perspective factors				
N=14	Past Negative	Present Hedonistic	Future	Past Positive	Present Fatalistic
Minimum	-.28	-.41	.09	-.21	-.14
Maximum	-.07	-.24	.44	-.22	-.64*
Variance	.03	.20	.23	-.02	-.24

*denotes significance $p < .05$

As shown in Figure 5.1 (a) the team data showed a significant negative correlation with the Present Fatalism mean team score and the mean team mark, ($r(12) = -.55, p = .04$). This showed that 30% of the team mark variance was accounted for by the mean Present Fatalism score ($R^2 = .30$).

As shown in Figure 5.1 (b) the data also showed a significant negative correlation with the Present Fatalistic maximum team score and the mean team mark, ($r(12) = -.64, p = .01$). This showed that 41% of the team mean score variance was accounted for by the maximum Present Fatalist score ($R^2 = .41$).

(a)



(b)

Figure 5.1: Graphs showing the negative relationships between the team mean mark and (a) the team mean Present Fatalistic score and (b) the team maximum Present Fatalistic score.

None of the mean, minimum, maximum or variances scores of the other team time perspectives (Past Negative, Past Positive, Present Hedonistic, Future) nor the minimum or the variance of the Present Fatalistic score were correlated significantly with the mean team mark ($p > .05$) as shown in table 5.5.

5.4: Discussion

The results showed a significant negative relationship with the mean and the maximum Present Fatalistic scores and the teams' performance. This showed that the lower the team mean Present Fatalistic score the better the performance of the team, which suggests that a shorter project is affected only by the team Present Fatalistic mean score and not the team Future score as in the longer duration study, which was previously reported in Chapter 4. This partially supports the second hypothesis but not the first. There were no significant associations in the mean, variance, minimum or maximum scores of either the Future factor nor the other ZTPI factors and team performance ($p < .05$).

The highest Present Fatalistic score in each team also showed a significant negative correlation with the team score, suggesting that the higher the maximum value of the Present Fatalistic factor the poorer the team performance. This implies that one team member high in Present Fatalistic factor who fails to "pull their weight" within the task can have a disproportionate effect on team performance. With small teams the whole team needs to be involved and if one person does not get involved the team success results will reflect this more than if there are greater numbers of team members. As these were all small teams working together for a relatively short time, any one team member high scoring in Present Fatalism, who does not work hard, will hamper the team's success. The Present Fatalistic variance or minimum score showed no significant correlation with the teams' mean mark, suggesting that having team members that are heterogeneous or homogeneous in the Present Fatalistic factor does not impact unduly on the team score and thus its success, or that having a team member with a low Present Fatalistic score does not help the team to perform better. This partially supports the final hypothesis.

These results were not able to be added to with the addition of the extra teams from the second tested year cohort due to several issues in obtaining useful and comparative data. These additional teams did not perform successfully. There were teams with several participants not submitting their final work at the correct time, and others not working together as a team. In addition their work was marked under

differing conditions than the original participants, the university having exchanging a manual marking system to a computerised one in the interim. Barker (2011) developed, tested and evaluated an automatic feedback and marking system. The prototype used was tested on BSc students as well as assessing a group project at MSc level. The computerised system was found to be efficient and useful to both students and staff and it was seen to be a vast improvement on the manual method used previously. For these reasons, therefore, the second cohort's data was not able to be combined with the first cohort's data to test a larger number of teams and so make the data statistically more powerful. This meant that there were a relatively small number of teams that participated in this study. However several team and group studies have used small numbers of teams to study various aspects of team work. Senior (1997) had only eleven management teams with between four and nine members in each whilst evaluating Belbin's team role theories. Burningham and West (1995) had thirteen groups in their participant pool, and Luther (2000), studying integrity testing, had a mere eight teams with 114 members. Anderson and Kilduff (2009) ran one study on the personality trait of dominance with seventeen teams and a second study with twenty five teams. Harvey (2013) studied 87 participants in 29 groups of three. There are often small numbers of teams in educational team studies as the teams are dictated by the finite number of students attending a University module. As there were only a few teams in this study the less powerful non-parametric statistical tests were employed and yet still showed a significant result with the Present Fatalistic factor.

Having established a significant relationship between Present Fatalism and team performance in mid-duration teams and a relationship between Future and Present Fatalism and team performance in longer duration teams the following research examined teams that come together for a very short time to see if there is any effect of time perspective on the success of these teams.

5.5: Chapter conclusion

In a shorter duration team that works together for one semester the Present Fatalistic factor mean score and the maximum score within the team are both

significantly negatively correlated with the performance of the team. A team with members who score highly on this time perspective trait is likely to perform worse than those teams with members who score lower.

CHAPTER 6

Time Perspective and Team Performance in Short-Duration Teams

6.1: Introduction

Some teams work together regularly for extended periods of time but other teams come together to complete a specific task, and then disband on its completion. Many educational studies have used short tasks that last for between 15 minutes and 4 hours to complete (Frank & Anderson, 1971; Kichuk & Wiesner, 1997; Anderson & Kilduff, 2009; Bowler, Woehr, Rentsch & Bowler, 2010). Aggarwal (2014) suggested that these *ad hoc* teams have a finite life span, formed around a clear goal, and their success is dependent on co-ordinating the activities so that they are carried out efficiently. He suggested that these teams do not have the luxury of time to develop and adjust to the team demands prior to carrying out the designated task. Most team development theories show that in a team the members have to get together and establish normative behaviours within that team (Tuckman, 1965; Tubbs, 1995; Fisher, 1970). However in an *ad hoc* short-duration team, which is set up solely to complete a task or series of tasks in a short time period, these norms of behaviour are not as easy to establish by the team as those within an on-going team, who have the time and expectation of working together on other occasions. Druskat and Kayes (2000) showed that long-term educational teams' effectiveness was multi-dimensional, including both individual learning and team learning, but that short-term educational project teams, which have a tight deadline, show quality and efficiency as being the main predictors of team success. Normally a short-duration team, that will disband on completion of a set task, would not see the benefits from being concerned about the general behavioural aspects of the team in the same way as a long-term team working together would require (Bradley, White & Menneke, 2003). They noted that within on-going teams members understand a set of habitual routines that guide their behaviour and that evolve over time, and in short-term teams there are no rewards or benefits for developing these norms of behaviours. The short-term team member is motivated by the finishing of the task and the gaining of the reward for completion of that task. Stone, Kaminka, Kraus and

Rosenschein (2010) showed that *ad hoc* teams not only need to understand their teammate's individual characteristics, such as their decision making and learning capabilities, their communication skills and their prior knowledge, but also the teams' characteristics, such as whether they are homogeneous or heterogeneous, how many are on the team, and their observation of other team members. In addition they need to understand the task characteristics, such as the features of the tasks to be performed, whether it can be performed by one member or whether it is best performed as a cooperative, the time available to complete the task, and the need to coordinate actions. A good *ad hoc* team member will recognise these aspects of the team members' characteristics and tasks and be able to use that knowledge effectively.

Menneke and Valacich (1998), when testing on-going teams (that have a shared history and an expectation of further tasks) and *ad hoc* teams (that have no expectation of working together again) that participated in a study in which some members of the team had different information from others, found that the on-going teams shared less previously unshared information than the *ad hoc* teams that had been brought together for the one specific task. This was thought to be because, within teams where members knew each other, there was less exchange of information and stronger assumptions that they had developed shared interpretative contexts. Therefore they would be less likely to communicate as fully with their team members in comparison with those who have no shared history. This is consistent with Janis' (1972) groupthink theory which suggests that a highly cohesive group will be less thorough in questioning the group's views. However the on-going groups were more cohesive and satisfied with the group processes than were the *ad hoc* groups for the short-term task completion. Other than the information gathering Menneke and Valacich (1998) did not find any differences in task success between the on-going and the *ad hoc* teams.

Bradley, White and Menneke (2003) studied teams in one of four different time frames: short-term teams working together on short tasks; short-term teams working on long tasks; long-term teams working on short-term tasks; and long-term teams working on long tasks. The two short-term team groups had no expectation of working together after the study finished, whereas the two long-term teams were on-going team groups. These two short-term teams are comparable to the teams used in this current study

(short duration team-short task) and the previous study described in Chapter 5 (short duration team-longer task) in this thesis. They found that those working in short-term teams on a short task focussed on task completion to the exclusion of efforts to form some sort of team bond, whereas short-term teams working on longer tasks, as expected, showed some team bonding to help the team run smoothly. The team members allocated some of the available time to interpersonal skills. Even though the short-term teams working on longer tasks had no expectation that there would be future work in the team they were together long enough to perceive some benefit of improved interpersonal interventions, and some motivation to establish behavioural norms for the team.

Gersick (1989) ran a small study in laboratory conditions over one and a half hours on eight teams (between 3 and 4 members per team) of students on an MBA course. She found that the groups used similar mechanisms to pace their work as did the eight naturally occurring teams she had studied previously who worked together from between seven days and six months (Gersick, 1988). Gersick (1989) suggested that pacing behaviour may be facets of creative group work that are consequential for team effectiveness.

As mentioned in chapter 3 the time perspective reflects attitudes beliefs and values related to time. Time perspective individual differences appear as a behavioural trait. Zimbardo and Boyd (2008) reported that:

“time perspective is the often non-conscious personal attitude that each of us holds towards time and the process whereby the continual flow of existence is bundled into time categories that help to give order, coherence, and meaning to our lives” (p. 51)

This statement suggests that time is needed for an individual’s personal time perspective to become apparent to others in the same way as other behavioural traits, which may be subtly hidden on first meeting, and only become apparent after time has elapsed. However those who score high in the Present Fatalism and the Present Hedonism factors tend not to put as much effort into their work as those high in the Future factor. Therefore the hypothesis for this study was that there would be a significant relationship between the teams’ success at performing a task efficiently and

their present time perspective scores but the two Past factors would be less likely to show a relationship as insufficient time was allocated to the team to understand these behavioural traits of their team members.

6.2: Method

6.2.1: Design

A correlational design was used to see if there were any association between the predictive variable of the mean of the five Zimbardo time perspective styles (Zimbardo & Boyd, 1999) and the criterion variable of the time taken to complete the four set tasks. The time taken to complete the tasks was used as a measure of successful completion of a set of tasks as it was not practicable to give the participants a marked piece of work (comparative to the previous studies as described in Chapters 4 and 5) to carry out in such a short time span. Time taken to complete projects is often used alongside costs and quality as measurements of performance for management projects (Atkinson, 1999) and therefore it was considered congruent to use elapsed time in this study as the measure of performance.

The tasks in this study were specifically chosen to match, as far as possible within a very limited time frame, the variety of tasks undertaken in the longer studies previously reported in Chapters 4 and 5. They included two logic tasks (The Tower of Hanoi and the See-Saw task). The Tower of Hanoi task has been shown to be reliable in the Ahonniska, Ahonen, Aro, Tolvanen and Lyytinen (2000) study, in which three versions of the Tower of Hanoi test were carried out with children of two different age ranges, finding stability of the scores throughout the testing with fewer errors from the older group and high reliability of total performance time. The tasks also included one physical sorting task testing dexterity. This dexterity task was designed to be a simple speed test in which pasta shapes were sorted into three separate piles. Manual dexterity tests have been utilised in other research studies such as that carried out by O'Brien & Schofield (1975) who tested mentally sub-normal adults using a simple dexterity test to test if positive reinforcement would improve their skill, and Turgeon, MacDermid and Roth (1999) who tested the reliability using test-retest trials of their dexterity board in

which small, medium and large objects were manipulated, finding fair to excellent reliability. A fourth task was included which was a close detail task of proof reading which has been shown to correlate with intelligence and clerical speed (Furnham, Rawes & Iqbal, 2006). All these tasks aimed to match as far as possible with the long-term tasks of running a business and the medium-duration tasks of conducting a psychology experiment.

6.2.2: Participants

The 75 participants were all Kingston University students registered as either undergraduate students or postgraduate students in the Psychology department. In the academic year that this study was carried out there were considerably fewer postgraduate students registered on the various Psychology courses that were offered through the university, than there had been in previous years. This may have been because the academic fees had increased noticeably over this period from £3000 p.a. to £9000 p.a. Although in the previous studies only postgraduate students were employed as participants, for this study it was felt that any of the eligible students could participate as the tasks used were straightforward logic, physical or attention tasks and prior knowledge or experience was not required for the participants to be able to complete the required tasks. All the participants received 45 'SONA' credits towards the departmental research participation scheme.

The participants' mean age was 25.19 (SD=7.58) years ranging from 18-54 years. There were 12 males and 63 females, 40 were postgraduate students and 35 were undergraduates, of which 85% of all the participants were studying full time. 59% of the participants had English as a first language.

The participants were placed into 25 teams of three. None of the previous studies' teams had less than three members so this was used as a minimum number to form the *ad hoc* teams. As it was a timed task all the teams in this study were matched with regards to team member numbers so that no team had an advantage over another team with extra team members.

The participants were invited to take part in the study by booking a time slot on the Kingston University Psychology 'SONA' website alongside two other participants. The study only took place when all three participants turned up at the same time. Thirty six participants (48%) did not know any of their team mates beforehand, 16 (21.3%) knew one member slightly, a further 10 (13.3%) knew both members slightly, 11 (14.7%) knew one member well and 2 (2.7%) knew both members well. Eight of the teams had members who knew none of their team mates prior to taking part in the study, 17 of the teams knew at least one other person prior to taking part in the study. As the teams were put together by participants applying to take part at a specific appointment time, and they could not see on the computer system who else had booked in to a specific slot, it was purely chance if they knew other team members, and although some of the participants did know their team mates they did not necessarily know them as much more than acquaintances from having attended the same classes previously whilst at the University.

6.2.3: Materials

An information sheet (Appendix F) and consent form (Appendix G) were given to the participants followed by the Zimbardo Time perspective Inventory, as used in the previous studies (Appendix A), and a demographics questionnaire (Appendix H). At the end of the study a debrief form (Appendix I) was given to them.

The tasks carried out for this study were chosen to replicate as far as possible the variety of tasks in a long-term working environment. There were two logic tasks, one close detail task and one physical task. This was to mimic aspects of the environment of the longer-duration team study and the medium-duration team study of chapters 4 and 5. Participants in the long-duration studies had run a business for an academic year (September to August), and the team members would have encountered many different tasks associated with establishing a new business: producing the product; selling it to the public; marketing the product; and keeping financial records of the fledgling business. The medium-duration teams had run a psychological research project which included researching the topic; designing the study; finding suitable participants; and

carrying out the experiment. Both previous team studies involved several different types of tasks including logic, physical and detailed work.

The materials required for the first task, the physical sorting task, comprised 1 kg each of three different shapes of a supermarket own-brand dried pasta: Penne (quills), Fusilli (twists) and Rotini (small spirals), mixed up and presented in a pile as shown in Fig 6.1.



Figure 6.1: Photograph of the pasta pile for the physical sorting task.

The materials for the second task, the proof reading task, was one sheet of A4 paper with an essay, typed on it on both sides in Aerial font, size 14, single spaced, about fans within theatre audiences, which had appeared in *The Stage* magazine on 24/07/2014 (Trueman, 2014) (Appendix J). The third task material was the Tower of Hanoi, a logic puzzle of ancient origin but rediscovered by a French mathematician, Edouard Lucas, in the second half of the nineteenth century: a wooden 5 disc version of the logic task was presented to the participants. It can be shown mathematically that for a tower of “ n ”

disks there will be a minimum of $2 \times n - 1$ moves to transfer the disks to a different peg (<https://www.britannica.com/topic/Tower-of-Hanoi>). The fourth task was another logic task based on ten separate black and white printed pictures of seesaws (Appendix K), which were shown each with various objects weighing down one or other side (retrieved on-line from <http://www.novelgames.com/en/seesaw/>). The task involved logically working out which of the objects was the heaviest. A separate scoring sheet for this task was given to the participants (Appendix L).

6.2.4: Procedure

The three participants were randomly allocated to a team dependent on the time they booked into attending the laboratory to carry out the study. The 25 teams met, one team at a time, in the same experimental testing room in the Psychology Department at Kingston University. This room was laid out with a soft seating area in one half of the room, and a large table on which the tasks were laid out on the other side of the room. On arrival the three participants were introduced to each other, if they did not previously know each other, whilst sitting in the soft seating area of the room. Having read the information sheet (Appendix F) and signing a consent form (Appendix G) they then spent approximately 10-15 minutes completing the questionnaires. Conversation between the three participants was neither encouraged nor discouraged but allowed to flow naturally. The instructions for the four tasks were explained to them verbally, as well as physically demonstrating to the participants the materials and how they could be manipulated. Written instruction sheets were also placed near each task station for the participants to refer to, if required, during the task (Appendix M). When there were no further questions about the tasks from any of the participants the stopwatch was activated.

When all four tasks had been completed successfully the timer was stopped and the time taken to complete the four tasks was noted. The participants could complete the tasks in any order they chose and could do the tasks either individually or together.

The materials were placed in exactly the same position for each team as shown in the figure 6.2 with the written instruction sheets alongside the materials for the tasks.

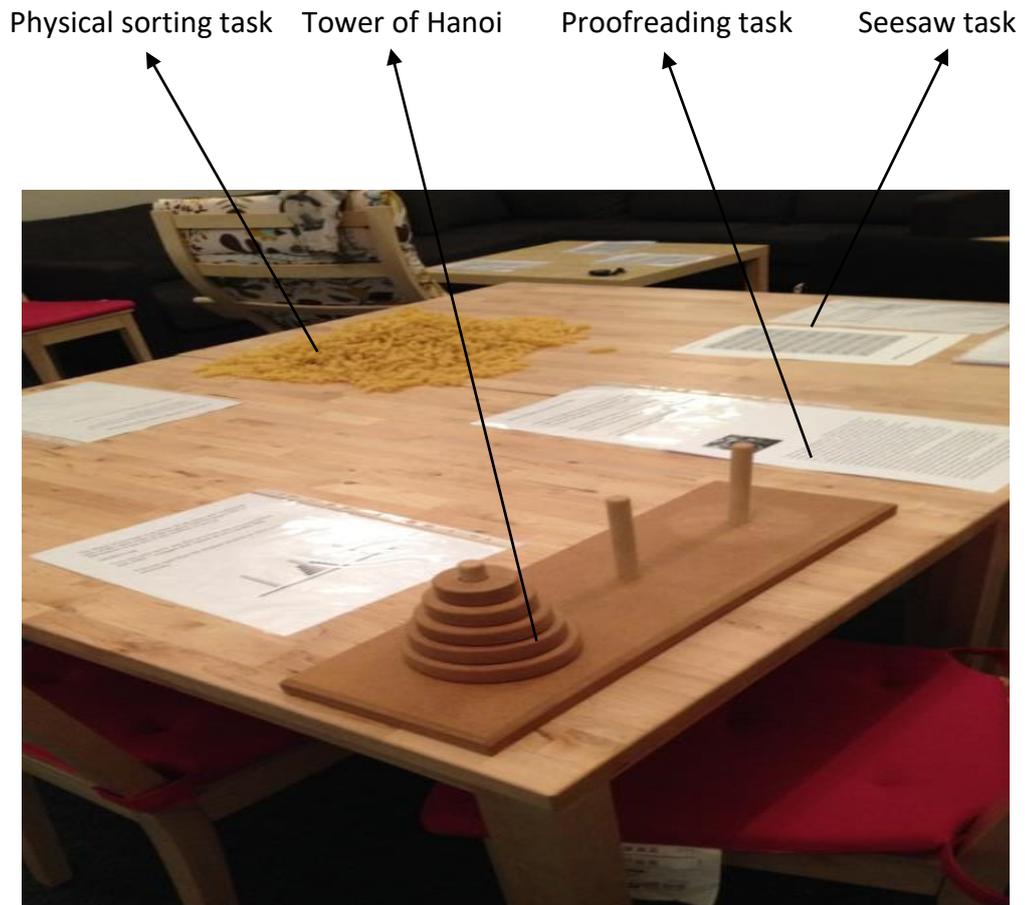


Figure 6.2: Layout of the four tasks and instruction sheets as placed on the table.

Task 1: The physical sorting task.

This involved separating the three different pasta shapes into three individual piles on the table top.

Task 2: The Proof reading task (Trueman, 2014).

The participants had to count the number of times the word 'and' appeared in the essay. They could mark the paper sheet, with the essay typed on it, in any way they liked. When they thought they had the number of times 'and' was written they told the researcher. If correct that part of the task was completed; if incorrect the researcher

advised them of the fact and they repeated the task until they got the correct answer of 22. This was akin to a study by Rayner and Rayney (1996) who used a similar technique in which either high frequency or low frequency words had to be found within a passage. The participants in Rayner and Rayney (1996) study missed the target word less than 2% of the time when allowed to read the passage at whatever speed they chose.

Task 3: The Tower of Hanoi (5 disc version) (Weisstein, n.d.).

A wooden version of the Tower of Hanoi was presented to the participants in which the five discs of decreasing sizes had to be moved to a different peg on the board but kept displayed in the same order. The Tower of Hanoi task belongs to a group of problems called transformation problems which entail the user reaching a goal through a series of moves (Xu & Corkin, 2001). The two rules that the participants had to follow were that the discs could only be moved one at a time and a larger disc could not be placed on top of a smaller disc. They could start from the beginning pattern of discs on a peg as often as they liked, and could take as many steps to achieve the goal as they required. The researcher watched to ensure that the rules were not broken before the task was completed. Noyes and Garland (2003) showed that there was a difference in the ability to solve the Tower of Hanoi depending on how it was presented, with a greater level of unsuccessful solves when participants were offered the problem physically (23% unsuccessful) rather than on a computer screen (8% unsuccessful) or working it out with no aids (13% unsuccessful). These researchers used a paper copy in the physical condition as opposed to the wooden version in this study. However Robinson and Brewer (2016) ran a similar study testing between a physical wooden version of the Tower of Hanoi and an I-Pad version and they found no significant differences between the two versions in the number of moves taken to complete the task, although they did find that it took significantly less time to complete the electronic version. Participants also found the wooden version more mentally and physically demanding but enjoyment was similar in both versions.

Task 4: The see-saw task. (<http://www.novelgames.com/en/seesaw/>).

Ten pictures of a varying number of see-saws (example as in Appendix K), with a variety of objects placed on either side of the seesaw, were shown to the participants. They had to work out logically which was the heaviest object. They wrote the answers on an answer sheet (Appendix L) and when all ten pictures had been attempted the researcher advised the participants of any incorrect answers. If necessary they then returned to the specific sheets to relook at the problem. Only when all ten answers were correct was the task deemed complete.

At the end of the testing period a debrief form (Appendix I) was given to each participant with their individual participant number on it and instructions for withdrawal from the study if required. 45 'SONA' points were added on to the individual's participation scheme requirement.

6.3: Results

The three participants had their scores on each of the Zimbardo time perspective factors calculated using the scoring sheet for the questionnaire and then summed together into the relevant teams; the mean, the minimum and the maximum score for each team as well as the variance was noted.

As shown in table 6.1 although the teams that did not know anyone within the team before participating took a shorter length of time, than did teams where members knew each other, to complete the four tasks this difference in mean time taken to complete the tasks was not significant, $t(23) = 1.38$, $p = .18$. There was also no correlation between the team mean age and the time taken to complete the tasks $r(23) = -.02$, $p = .94$. Therefore these factors were ignored as possible confounding variables.

Table 6.1: *The mean time taken to complete all four tasks. The SD is given in parenthesis and the 95% confidence intervals are in brackets.*

	All Teams	Teams that knew at least one other member	Teams that did not know any other team members
No of teams	25	17	8
Time in mins (SD)	18.66 (4.60)	19.51 (4.74)	16.84 (3.94)
95% CI	[16.76,20.55]	[17.07,21.95]	[13.55,20.14]

The team mean, minimum, maximum and variance scores were calculated for each of the 25 teams for each of the ZTPI factors as shown in table 6.2. The team mean data were normally distributed and were neither kurtotic nor skewed (Kolmagarov-Smirnov for all five factors, $p >.05$).

Table 6.2: *Mean, minimum, maximum scores and the variance of the teams shown by each of the time perspective factors.*

N=25	Past Negative	Present Hedonistic	Future	Past Positive	Present Fatalistic
Mean	2.95	3.40	3.66	3.59	2.52
C.I. (95%)	[2.79,3.12]	[3.29,3.51]	[3.52,3.80]	[3.45,3.73]	[2.38,2.65]
Minimum	2.40	3.92	3.23	3.05	2.07
Maximum	3.60	3.84	4.06	4.08	3.02
Variance	.56	.25	.23	.35	.36

Table 6.3 shows the correlations between each of the ZTPI factors of the individuals in the short duration study.

Table 6.3: *Pearson's correlation for the 75 individuals between the subscales of the Zimbardo Time Perspective Inventory.*

	1	2	3	4
1. Past Negative	-			
2. Present Hedonist	.17	-		
3. Future	-.31**	-.39**	-	
4. Past Positive	-.31**	-.01	.23	-
5. Present Fatalist	.44**	.29**	-.44**	-.06

*p<.05 **p<.01

Significant positive correlations were noted in the individuals between the Past Negative and the Present Fatalist factor ($p<.001$) and between the Present Hedonist and the Present Fatalist factors ($p=.01$); and significant negative correlations between Past Negative and Future factors ($p=.007$); Past Negative and Past Positive factors ($p=.006$); Future and Present Hedonist factors ($p=.001$); and Future and Present Fatalist factors ($p<.001$).

Table 6.4 shows the correlations between the team mean ZTPI factor scores for each of the subscales of the ZTPI.

Table 6.4: *Pearson's correlation between the subscales mean of the Zimbardo Time Perspective factors for the 25 teams.*

	1	2	3	4
1. Past Negative	-			
2. Present Hedonist	.08	-		
3. Future	-.34	-.51**	-	
4. Past Positive	-.33	.07	.02	-.11
5. Present Fatalist	.52**	.35	-.58**	-.34

*p<.05 **p<.01

Significant positive correlations were found between the Past Negative and Present Fatalist factors ($p=.01$) and significant negative correlations were found between the Present Hedonist and the Future factors ($p=.01$) and between the Future and the Present Fatalist factors ($p=.01$).

As shown in table 6.5 no significant correlations were found between any of the five ZTPI factors (mean, minimum, maximum or variance) and the time taken by the teams to complete the four tasks, ($p>.05$).

Table 6.5: *Pearson's Correlations: Zimbardo time perspective factors and time taken to complete task.*

Time	Past Negative	Present Hedonistic	Future	Past Positive	Present Fatalistic
Mean	.36	-.16	.03	-.34	-.10
Maximum	.33	-.12	.09	-.27	-.01
Minimum	.28	-.002	.001	-.35	.07
Variance	.03	.08	-.07	.07	.14

*All non significant ($p<.05$)

6.4: Discussion

No significant correlations between aspects of time perspective and team performance were found when 25 teams carried out four tasks in a short time period. This suggests that time perspective is not an important factor in *ad hoc* teams that are formed to complete a short duration task.

Team members typically need to spend time getting to know one another and establishing the ground rules for how the team could or should operate. Gordon (1983) specified that a group requires four criteria to be met: that they feel they are acting as a single unit; that they share a common goal; that rewards are shared between all members; and that whatever one member does will affect the other members. Leaders may be established and team members settle in to a position and function within those rules. The success of the team operations therefore depend partly on how the team

members work together in order to achieve their allotted tasks to get to the final team goals. The theories of team formation involve differing phases that the team passes through prior to disbanding. The different stages referred to in Tuckman and Jenson, (1977) (forming, storming, norming, performing, and adjourning), Tubbs (1995) (orientation, conflict, consensus and closure) and Fisher (1970) (orientation, conflict, emergence and reinforcement) all allow time for the teams to pass through the separate phases, and strengthen social bonds between the individuals within the teams. In this study however, the teams had no time to develop these social ties or to pass through the relevant stages, and therefore the individual's strengths and weaknesses in terms of their personality traits are likely to be less relevant to the task success. Poole and Roth (1989) suggested a team model that moved from a social phase to a task oriented phase and back again, but again, in this case, the situation still did not allow the time to add in a social phase but just a task oriented phase.

Bradley, White and Mennecke (2003) studied how interpersonal interventions could affect team performance. They found that for short-term teams working together on short-term tasks these personal interventions had less effect on achieving the goal than task interventions. In these *ad hoc* teams, carrying out short-term tasks, the short time frame that the team is operational, combined with the expectation of no further need to work together, means that becoming a cohesive group is not beneficial or necessary to the team members. Ganster, Williams and Poppler's (1991) team study which lasted for 60 minutes, and in which the teams had to rank 15 pieces of equipment for survival on the moon, found no effect of an intervention and surmised that the teams' quality of group decisions was therefore a function of the resources that the short-term team members bring to the group. Devine (1999) used a team based management task lasting two and a half hours, and found that the strategic plan's potential profit in the task (the criterion variable) was predicted by the cognitive ability and the task knowledge of the team members, but not the team members' interpersonal skills (the predictor variables). Wooley (1998) also in a short task, with teams building a lego structure in 50 minutes, showed that task training mid-way through the task increased task performance, although in some of the teams it was found that poor interpersonal skills negated the positive effect of task knowledge. This

suggests that task knowledge is an important predictor of short-term team success but this could be mediated by the team members' social skills. Even with a very short task poor social skills can have a negative effect on the teams' success rates.

Katzenbach and Smith (1993) believed that teams develop a shared commitment to the team and its members, and need to invest time into shaping their goals. In a very short duration team task, as in this study, there is no time allocated to sorting out who is best suited to carry out each individual task and the individual's strengths and weaknesses are not considered. Time perspective strengths and weaknesses naturally take time to be noticeable, and in a short duration task like this that time is neither available nor wholly relevant to completing the task. Therefore other character based factors may come into effect but not time perspective. Anderson and Kilduff, (2009) ran a study in which 68 people worked in 17 different groups on a short task which was designed to be engaging and to evoke a lot of discussion. It lasted for 45 minutes and then the team members were rated, not only by other team members, but also by peer observers and research staff members, on a number of dimensions. They found that trait dominance predicted the influence attained within the group as high scorers in the trait were seen as more competent than low scorers. Extravert and dominant people tend to behave in assertive, forceful and self assured ways, speaking more and holding sway in group situations and are the most likely to become leaders within a group (Barrick & Mount, 1991; Judge, Bono, Ilies & Gerhardt, 2002). Time perspective traits are less likely to be noticeable after a short time of knowing someone, and therefore will have minimal effect on the team in a short task study.

It was interesting to see that teams with members who knew each other did not perform significantly better than those whose members did not know others in the team. Although not statistically significant, the teams that did not know each other completed the tasks faster than those who did know each other. This could be because the team members were there as individuals to carry out a study that would enable them to achieve their individual 'SONA' credits requirements and the task set for them was one that they just got on with as an individual who happened to be working collaboratively with others. There would have been no feeling of team bonding and no feeling of working to a common goal. The end point of the task for the team members

was ultimately an individual goal of 'SONA' credits collection. The teams who did know each other may have spent some of the task time re-establishing their social bonds, and thus taking longer over the tasks.

Having established that time perspective does influence team success, in particular the Future and the Present Fatalist factors, if enough time is allowed, future research should examine teams that are specifically put together in order to test whether teams high in Future or Present Fatalism behave differently to those low in the factors in terms of team performance. This would enable team managers to organise their teams before projects begin to maximise the performance potential of the teams.

6.5: Chapter Conclusion

No significant relationships were found between any of the ZTPI factors and the performance in teams that work together for a very short period of time. These teams have no expectations of working together at any time in the future and therefore do not spend time or effort in getting to know their fellow team member's strengths and weaknesses. They just get on with the completing the required task.

CHAPTER 7

Experimental Study and Individual Studies

The following chapter reports on a study that was carried out aiming to test, by experiment, the effects of time perspective on performance. The chapter is split into several sections; first a section explaining the details of the experimental study and next a follow-up on problems that affected the study, using the viewpoint of some of the participants. Finally using the data, gleaned from both the experimental study's participants and some of the participants who had taken part in the medium-duration correlational study, two additional studies are reported; their aim was to see if an individual's time perspective factors, pacing style and chronicity affected the participant's behaviour in taking part in psychology experiments through the research participation scheme.

7.1: Experimental Study: Team Members' Future and Present Fatalism Scores and the Performance of the Team.

7.1.1: Introduction

The findings reported in the previous three chapters showed that there was an association between the scores on the Future and the Present Fatalism factors and the teams' performance, but this is dependent on the duration of the team's life cycle. In the long-duration study a significant positive correlation was found between the mean Future score of a team and the performance of the teams. In addition there was a significant negative correlation between the mean Present Fatalistic score of the team members and the performance of the team. In the medium-duration study only a significant negative relationship was found between the mean Present Fatalistic score and task performance; in the short-term study no significant correlations were identified. These findings suggest that those two factors of time perspective have an effect on a team's performance rate but only when the team works together for a

sufficient length of time for the behavioural trait to become apparent. It also suggests that it takes less time for the Present Fatalistic trait to affect the teams' results than it does for the Future trait to affect team performance. This next study aimed to test this relationship using an experimental methodology. A study that lasted for several months was devised to let the teams work together for a sufficient length of time to allow for these personality traits to become noticeable, as has been indicated in the earlier studies. The hypotheses were that the teams made up of participants with high Future and low Present Fatalistic scores would have the most positive effect on performance on a simple task, whereas the teams comprised of participants with low Future and high Present Fatalistic scores would fare worst.

Although this study was looking primarily at the way the Future and Present Fatalism factors scores affected the teams' potential for successful performance, the same data set was to be used for further studies to examine how the individuals' behaviour on a participation scheme task was affected by their time perspective scores. Harber, Zimbardo and Boyd (2003) showed that females and those high in the Future factor were more likely to sign up for university participation schemes earlier than others and this is likely to have some implication in research designs.

7.1.2: Method

7.1.2.1: Design.

An independent measures quasi-experimental design was carried out and analysed using a 2 (Future: high/low) x 2 (Present Fatalistic: high/low) ANOVA.

The independent variables for the study were the mean Future score and the mean Present Fatalistic score of the teams, both with two levels (High and Low). The dependent variable was the 'SONA' credits of those studies collected by all of the team members over a five month period, between the beginning of November 2014 and the end of March 2015. These credits are collected throughout the academic year by Kingston University undergraduate and postgraduate Psychology students in order to complete their degree requirements. They are gained by participating in departmental

Psychology experiments, whereby one credit is issued for each minute of research participation. Undergraduate students have to collect 600 credits over the first two years of their three year BSc course, and postgraduate students require 240 credits during their one year Masters course. The 'SONA' credit collecting was tracked from November 2014 to March 2015 with requests for 'SONA' credits collected by set dates at the end of each calendar month and mid way through the latter months (November 30, December 31, mid January, January 31, mid February, February 28, mid March and March 31).

The individuals were categorized into four separate groups according to the participants' individual scores of Future and Present Fatalism time perspective factors. Those that scored above the median score of the two factors were designated high scorers and those that fell below the median score were designated low scorers, leading to four categories: High Future/High Present Fatalist, High Future/Low Present Fatalist, Low Future/ High Present Fatalist, Low future/Low Present Fatalist. The participants were then sorted into teams of three, with similarly scoring individuals.

7.1.2.2: Participants

Ninety nine Kingston University psychology students were recruited during their research methods class in the first semester of the academic year (originally 101 participants were recruited but two withdrew subsequently from the study). All the participants were registered with the Kingston University Research participation scheme ('SONA') and had to collect 'SONA' credits as part of their degree course. They all received 20 'SONA' credits for completing the questionnaires. There were 75 female participants and 24 male participants with a mean age of 22.56 ($SD=6.12$) years ranging between 19 and 49 years. Twenty two of the participants were postgraduate students, and 77 were second year undergraduate students. They all attended a Psychology research methods class relevant to their academic year groups. Ten of the participants (all undergraduates, 3 male and 7 female) omitted to give their age. Seventy three of the participants studied full time at the University, eight were studying part time (all of the

part time students were postgraduate students). Eighteen of the participants, however, did not give any information about whether they were full or part time students.

All the participants were told that there would be a prize of £150 in Amazon vouchers for the team that scored the most 'SONA' credits from the same studies.

The mean, median and mode of all the participants' Future scores and Present Fatalistic scores was calculated as shown in table 7.1.

Table 7.1: Mean (+/- SD), median and modal scores for Future and Present Fatalism factors for the study's 99 participants.

N=99	Mean (SD)	Median	Mode
Future	3.47 (.45)	3.54	3.31
Present Fatalist	2.57 (.52)	2.56	2.33

7.1.2.3: Materials

The materials used were the same questionnaire that had been used in the previous studies, the ZTPI (Appendix A) (Zimbardo & Boyd, 1999) which was scored using the relevant scoring sheet (Appendix B). Each participant was given a consent form (Appendix N) and an information sheet (Appendix O) prior to the study and a debrief form at the end of the period (Appendix P).

7.1.2.4: Procedure

The participants were sorted into 33 teams. These were interacting groups, each of three participants, working towards a common goal collecting 'SONA' credits by participating in the Kingston University psychology studies advertised on the 'SONA' participation scheme website, which is found on the Kingston University intranet, and accessible by all students currently attending a Kingston University Psychology course. Studies being run by members of the Psychology school can advertise for participants on

the intranet, detailing how many participants are required, when and where the testing period is, and how many 'SONA' credits are available to be gained, alongside any relevant instructions for participants.

The individuals were sorted into teams by designating them either high or low scoring split around the median of each of the two time perspective factors (Table 7.1). Any individuals that fell close to the median score in one factor were allocated to one of the four categories dependent on their individual score and the mean score, and no team had more than one person allocated to the team with scores around the median in either factor. For example if a participant scored 3.49 in the Future factor (the median Future score was 3.54 and the mean was 3.47, as shown in Fig 7.1) or 2.54 in the Present Fatalism factor (the median Present Fatalism score was 2.56, and the mean 2.57, as shown in Fig 7.1) they were categorized into a high scoring category for the Future factor or a low score for Present Fatalism. Six participants were scored close to the median on both factors and were placed in two separate teams which it was decided would be omitted from the analysis, but kept in the data set collection for other studies looking at individuals rather than teams. The others were all allocated to a team that was relevant to one of the four levels of the time perspective variables as shown in table 7.2. The two teams that were based around the median showed a Future mean score of 3.45 and a Present Fatalism mean score of 2.54.

Table 7.2: Mean of Future and Present Fatalistic scores for teams in each level of the time perspective variable.

	High Future/High Present Fatalist	High Future/Low Present Fatalist	Low Future/High Present Fatalist	Low Future/Low Present Fatalist
Number of teams	7	8	7	9
Future (mean)	3.91	3.95	2.97	3.10
Present Fatalistic (mean)	3.04	2.11	3.18	2.12

Homogeneity of variance was assumed for each time perspective (Levene's statistic- Future, $F(4,28) = 2.16, p=.10$, and Present Fatalistic, $F(4,28) = 1.13, p=.36$) and a 2 (Future: high/low) x 2 (Present Fatalism: high/low) ANOVA showed a significant

difference between the four levels of time perspective, Future, $F(4,28) = 125.61, p < .001$ and Present Fatalistic, $F(4,28) = 60.87, p < .001$ for each of the team categories. This showed that all four groups scored significantly differently from each other for both Future and Present Fatalistic scores. Bonferoni post hoc tests on Future showed the significant differences to be between all the combinations ($p < .01$) except for Low Future/High Present Fatalistic and Low Future/Low Present Fatalistic teams ($p = .26$). Bonferoni posthoc tests on Present Fatalistic similarly showed significant differences between all combinations ($p < .001$) apart from with the medium group (with high Future/High Present Fatalistic $p = .016$, high Future Low Present Fatalistic $p = .5$, Low Future/Low Present Fatalistic $p = .5$). This was not of concern as the two average teams were planned to be omitted as part of this study's analysis.

Having sorted the individuals into the relevant teams all the participants (having been recruited at the end of September 2014) were sent an email in late October 2014 informing them of their team members' names, and giving them the mobile numbers and/or university email addresses (where previously preferred and agreed by the participants) of their fellow team members, and reiterating the task requirements. The groups of three were required to communicate (by any means they so chose) in order to participate in the same psychology studies on the participation scheme. Only research studies in which all three team members had participated in were relevant to this study. Once or, later in the course of the study, twice a month they would then let the researcher know the number of 'SONA' credits that all three members had obtained from participating in the same studies.

At the end of November an email (Appendix Q) was sent to all participants asking for a list of studies that all their team members had taken part in up to that date. Reminder emails (Appendix R) were also sent a week later and encouragement to participate was verbally given from individual research methods tutors during their respective research methods classes. A similar email trail was sent at the end of December, mid and end of January, mid and end of February, and mid and end of March and the 'SONA' credits obtained were noted for each period. To encourage communication between participants and researcher, five 'SONA' credits were awarded to each participant every time the participants replied to the emails requesting the

number of points their team had collected each month regardless of whether they had obtained any or not.

At the end of January 2015, additional emails (Appendix S) were sent to ten of the teams (numbers 6, 7, 16, 19, 21, 22, 28, 29, 32, 33) as no communication had been received by the researcher from any member of these teams by that date. Teams 19, 22 and 24 were advised that some participants (participants 1, 6, 18 and 23) had left the study, and they were to continue on as a team of two until the end of the study. In March 2015 participant 92 also withdrew from the study.

As a result of the lack of communication from many of the participants both within the team and with the researcher a semi-structured interview was conducted with nine of the participants in May 2015 to try and establish what issues were found to be problematic with the study. All of the nine participants were from the postgraduate cohort who took part in a separate semi structured interview about team work conducted at the end of the semester but who had also taken part in this study, and had volunteered to answer some extra questions about the experience of this study in order for the issues to be understood.

7.1.3: Results

As shown in table 7.3 there was no significant gender differences for the Present Fatalistic score, $t(98) = .28, p > .05$ but there was a significant difference by Future score by gender, $t(98) = 2.27, p = .03$ with the females being significantly higher scoring.

Table 7.3: Mean Score (+/- SD) for individual participants on the Future and Present Fatalism by gender.

	Male (N=24)	Female (N=75)
Future	3.25 (.63)	3.54 (.52)
Present Fatalistic	2.54 (.65)	2.44 (.58)

As shown in table 7.4 there was no significant difference in Future score between postgraduate and undergraduate participants, $t(98) = .34, p > .05$ but there was a significant difference between the postgraduate and undergraduate participants for the Present Fatalistic score, $t(98) = -2.18, p = .03$. The three participants who had the highest Present Fatalistic scores were all undergraduates.

Table 7.4: Mean Score (+/- SD) for individual participants on the Future and Present Fatalist Factors by student academic level.

	Postgraduate(N=22)	Undergraduate (N=77)
Future	3.51 (.58)	3.46 (.56)
Present Fatalistic	2.33 (.48)	2.63 (.61)

The majority of the 33 teams' members did not communicate satisfactorily between themselves in order to ensure that each team member took part in the same 'SONA' studies. Some individual team members did reply to the emails requesting to know which studies had been undertaken each month (47 replied at least once, 51 did not reply at all) but only for their own 'SONA' credits' studies and not those of the rest of the team. It was quite clear by January 2015, when the project had been running for around three months, that the team members were not communicating with each other as had been hoped and planned, and therefore no actual usable team data could be collected.

Table 7.5 shows the means (SD) of the time perspective scores for those that did and did not reply to the researcher's emails. Those team members that had replied to the researcher's emails once or more over a five month period showed no significant differences, from those that failed to reply, in Past Negative, Present Hedonistic, Future and Past Positive mean scores ($p > .05$), but did show a significant difference in Present Fatalistic scores using an independent t-test, ($t(96) = -2.64, p = .01$). Those with a higher score in Present Fatalism were significantly less likely to email the researcher.

Table 7.5: Mean (+/- SD) of time perspective traits between those participants who emailed the researcher (N=47) during the study and those who did not (N=51).

	Past Negative	Present Hedonist	Future	Past Positive	Present Fatalist
Email	3.06 (.67)	3.40 (.57)	3.51 (.56)	3.51 (.55)	2.42 (.51)
No email	3.03 (.65)	3.60 (.50)	3.43 (.57)	3.67 (.67)	2.73 (.63)

There was insufficient data collected in order to conduct the planned statistical analysis of the 2 (Future) x 2 (Present Fatalism) ANOVA to establish if high Future/ low Present Fatalist scoring teams improved task success.

7.1.4: Discussion

As all three members of each team were required to communicate with each other, it only took one person in a specific team not to reply to their team members' communications for the team structure to break down. Once broken, the team members (who did not know each other in most cases apart from remotely over the internet) lost the impetus to carry on being invested in the study. This was all the more noticeable as by January many psychology studies were being advertised on the 'SONA' participation scheme system and 'SONA' credits were readily available to the participants. There was no difference in time perspective with any of the factors between those who contacted the researcher and those that did not, with the exception of the Present Fatalism factor. This is supported by other studies that show that those with high scores in Present Fatalism are more likely to feel that their efforts will make little difference to a task (Zimbardo & Boyd, 2008).

There has been inconsistency in studies showing gender differences with time perspectives (Mercurio & Ely, 2011) with some studies showing no differences such as Fingerman and Perlmutter, (1995) with their study on gender and Future time perspective, but others showing that females were more Past orientated than men (Usunier & Valette-Florence, 2007) and males are more Future orientated than females (Greene and de Backer, 2004). This study, however did find that the females scored significantly higher in Future factor than the males and that the undergraduate students

scored higher in Present Fatalistic factor than the postgraduates. There were, however, many more female participants than male so that would have had some impact on the mean scores with the outlier participants having more effect on the overall score in smaller numbers than in the larger groups. For the team analysis neither gender nor study level was considered to be an issue as the participants were sorted according to their actual scores in two of the ZTPI factors and placed in to high and low categories therefore the fact that as a category (male/female, postgraduate/undergraduate) they are significantly different than other groups was not relevant in this particular case.

As a result of there being no usable team data from this study, nine of the participants (all postgraduates) were interviewed, using a semi-structured interview, about their experiences whilst taking part in the study, to try and establish where the issues in the study had been. The problems noticed in this study could help with devising further research in teams in Higher Education by understanding how students in educational teams are motivated by the set work, and to comprehend how best to present team challenges to educational teams in order to allow them the experience of working in a team whilst also enabling them to complete their own personal goals at the level they require.

7.2: Semi Structured Interview: The Problems Encountered In The Experimental Study.

7.2.1: *Participants*

The nine participants that answered questions in a semi-structured interview were all postgraduate students on an MSc Psychology (conversion) course. Their mean age was 28.00 ($SD = 5.77$) years with a range between 23 and 41 years. Seven of them were female and two male, five were full time and two part-time (two did not disclose that information). They were all placed in different teams within this study. Two of them were in the low Future category, five in the high Future category and two were in the mean Future category. Five of them scored low on Present Fatalistic and four high on Present Fatalism as shown in Table 7.6. They were all recruited to take part in a semi-structured interview along with three other participants who had not taken part in this

study to talk about team work in general (Chapter 8) and these nine participants were asked at the end of the interview if they would answer a few extra questions on their experiences, having taken part in this study, in order to establish what problems had been encountered from the participants' viewpoints. Each of the participants' names has been altered to a pseudonym in order to keep confidentiality.

Table 7.6: Age, gender, Present Fatalism and Future factor score of the participants.

No	Pseudonym	Age	Gender	Present Fatalist	Future
3	Rachel	25	Female	1.67 (low)	4.00 (high)
5	Emily	25	Female	2.22 (low)	3.54 (average)
6	Alice	41	Female	2.22 (low)	3.69 (high)
7	Hala	23	Female	3.33 (high)	3.54 (average)
11	Nazima	24	Female	2.56 (high)	3.77 (high)
12	Sarah	30	Female	1.89 (low)	2.38 (low)
13	John	27	Male	2.67 (high)	4.54 (high)
14	George	26	Male	3.22 (high)	3.31 (low)
19	Shirley	33	Female	1.44 (low)	3.92 (high)

7.2.2: Materials and Procedure

Several specific questions were asked of the participants (Appendix T) at the end of the semi-structured interview about this study. Their answers were recorded on a voice recorder and transcribed. The questions were designed to elicit how the participants had worked with others in a team project, over a five month period, alongside people they did not necessarily know beforehand. The participants were asked how they felt about being part of the team, how the team communicated and how invested they felt as a member of that team.

The interviews were analysed by the interviewer to try and understand how the participants approached the study, and about the problems faced by the participants taking part in a relatively long duration team study lasting several months during the academic year. Most of the questions asked were straightforward questions regarding the processes they had undertaken. This was studied using a "bottom up" inductive

process, looking at what the participants actually said about the study through their own perspective, but also looking for commonalities between the accounts in an attempt to understand what problems had been perceived by the participants.

7.2.3: Results: Analysis of Semi Structured Interviews

The questions asked aimed to establish whether the participants had been invested and involved in the study, how they had communicated both with each other and with the researcher, and whether the incentives for taking part had been effective. Table 7.7 presents a synopsis of each of the participants' responses showing how they felt about being part of the team, how the team members communicated between each other, whether the incentive offered was acceptable, whether the constant emails from the researcher affected them in any way, and how long they remained involved before they felt the team had failed in its goals, and finally whether they had been invested in the study. Each of these aspects is examined later in more depth.

Table 7.7: Summary of Interviews with participants in the experimental study.

Participant	Rachel	Emily	Alice	Hala	Nazima	Sarah	John	George	Shirley
Started well	Yes	Yes	Yes	No	Yes	-	-	Yes	-
Fizzled out	Yes	Yes	Yes	-	-	Yes	-	Yes	-
Team member involvement	One not involved	One not involved	-	None involved	One not involved	Limited response	Yes	-	Yes
Social interaction with team	none	Tried to meet. failed	Tried no response	None	None	-	None	None	None
Knew team members beforehand	No	No	No	No	No	No	No	No	No
Contact method	Email	Email	Email	none	Email	Email/facebook	Face-to-face	Email/whatsap	Email
Initialteam involvement	Yes	Yes	No	No	No	No	-	Yes	-
Leader	No	No	No	No	Yes	Yes	-	No	-
£150 incentive	No	No	No	No	Yes but forgot	No	Yes but not enough	Forgot	No
Constant requests from me	No problem	Other work more imp	Felt guilty	Felt bad	Frustrated	Liked the contact	-	Annoying and embarrassed	No problem
Invested in study	Yes	1 week only	-	No	No	-	Yes	-	No
Interet before fizzling out	2 months	1 month	-	-	1 month	1 month	-	Dec-Feb	-
SONA target reached	-	Less inclined to do studies	Enjoyed doing studies	-	-	Other things took over	Likes doing studies	Would not come in specifically to do study	No motivation to do study
Social loafing	-	-	Yes (others)	Yes (self)	-	-	-	-	-
Tried to communicate with team	No	No	Yes	No	No	Yes	No	No	No

Investment in the experiment

The majority of the nine participants who were interviewed suggested that there was an initial investment in the study. This was one of the earlier studies during the academic year to be uploaded onto the 'SONA' participation scheme webpage. The students had only recently been instructed in their research methods class about their need to obtain 'SONA' credits, in order to fulfil the course requirements, so many of them had signed up eagerly. As Nazima said it was felt to be a relatively easy way to participate and achieve the required credits.

Nazima: 400-404 "Yup so it started in the beginning I was very motivated um to do it because I thought it was not a difficult task to do as I was doing other 'SONA' studies anyway so sharing that information with the others and trying to do the same studies did not seem like a difficult thing to accomplish."

Involvement

The study started in late October when the workload for the students was relatively light. By November and December, as the semester moved on, the work load had increased for the majority of the participants; essays were due to be submitted and tests and exams were looming. The Masters students had, on the whole, planned to obtain their 'SONA' credits before the workload increased. This study with its drip feed of 5 or 10 'SONA' credits a month could not compete with studies offering considerably larger numbers of 'SONA' credits in one study, thereby enabling the participants to finish collecting points quickly and simply. As Sarah and George said they were keen to get the 'SONA' credits before they became busy with exams and coursework.

Sarah: 549-552 "No I can really say after I got those ('SONA' POINTS) because it was coming up to as well my exams and I wanted to make sure I had done all my participating in studies before I needed to prep for exams so as soon as I

got my points I wasn't going to like physically go to the studies."

George: 590-594 "basically my approach to the 'SONA' thing differs from my usual thing of panicking and doing it at the end because I panicked early on. My thought was you are going to be so busy with exams and dissertation and stuff you are not going to have enough time to do all these studies so every study that came up from the very beginning I partook in."

The five month duration of the study's goal was too hard for the participants to achieve. Keeping the impetus of a study over a five month period meant that the participants lost the desire to take part when there were easier ways to achieve their individual goals of 'SONA' credit collection. As Rachel said

Rachel: 324-325 "It started off quite well. The first few months and then we sort of lost communication."

Once one team member had stopped participating there was no incentive for the others to carry on. Alice mentioned these issues.

Alice: 305-309 "the other two I don't know I, we didn't hear from one for quite a while and then I have no idea whether they did the same tests as me. Every time I did an experiment I emailed and said I've done this.....
(Interviewer: Oh right).....**Alice:** But I didn't really get anything back"

Communication between team members

Because they did not know each other before the study, and in the majority of cases never actually met during the study, the teams fell apart quickly. The three common reasons mentioned by the participants for the study failing were cited as:

1. When emails were sent to all three team members, and one person in the team did not reply, there was no point in going on with the study, since all three had to complete the same studies in order to add the points to the team. Most of the participants mentioned this problem blaming another team member for the team to be unable to complete the task, and so stopping them from carrying on. As several of the participants explained:

Rachel: 327-329 “and I think there was one individual who didn’t do any work at the beginning, any of the tests at the beginning, so we thought he just wasn’t doing any so our team had sort of fallen apart so that’s the reason I stopped.”

Nazima: 404-407 “I had two other team mates one that replied to messages that I sent and she also tried to do the same studies or she told me about the studies she had done, but the third team mate never replied to any of the messages”

Emily: 404-410 “There was this one that was 100 credits that everyone wanted to get cos (*sic*) obviously the credits was massive, and it was a necklace making one. I remember it was from January and I didn’t manage to sign up early enough in time. This actually might have actually changed my view on the whole group actually because when she

said I've got this one you know is everyone else going to do it and the other girl didn't I thought this is just pointless now."

Hala: 390-392 "Um I didn't end up doing any studies with anyone because, I mean, I heard from, like, my team once, contacted them back saying 'great here's my contact information' then I didn't hear from them"

Sarah: 483-484 "There wasn't a lot of back and forth and so I eventually kind of gave up on trying really."

John: 502-505 "Oh actually two of us Lucy and I did speak. She was quite pro-active once we both realised that we both wanted to actually do it but then we realised we couldn't get hold of the third person so we just went "so what can we do."

John: 513-514 "...and we basically concluded if we couldn't get hold of the third person what was the point."

2. The team members did not know who their team mates were in person. This meant they did not feel that they were an integrated part of a team working towards a specific goal as these three participants showed:

Rachel: 329-331 "Um I think the main thing was that I didn't know who they were so I didn't feel like there was any incentive to sort of carry on."

Sarah: 512-514 "Um... yes I suppose I never really felt like I was part of a team. I think because we never met and it was sporadical contact over the net. You never really see that team."

Emily: 421-425 “we did arrange very early on to all meet together. You know we were proper serious about it, but she wasn’t in the days we were in. I mean I am part time. I am not sure if the other girl was part time, the master’s one, either but yeah so it just didn’t materialise. We did aim to but yeah.”

3. Because there were no designated leaders to run the study when things went wrong few were prepared to pick up the slack. Only two of the participants, Sarah and George, even mentioned that they tried to coordinate the team members. None of the others mentioned trying to plan a strategy:

Sarah: 504-505 “and I was like ok well I’ve not heard from anybody so I will kind of take control of this.”

George: 534-536 “it was like oh yeah we definitely need to coordinate and that’s when the group started getting together and we were like ok we should start planning things out and stuff.”

Communication with researcher

The regular communication with the researcher in most cases was not an issue with the participants. The participants just accepted it as a part of the study but some participants expressed negative feelings of guilt and annoyance, and said they felt bad as if they were letting the study and the researcher down by not feeling involved enough to ensure the task was completed.

Alice: 274 “It was sort of er I felt a bit guilty at the end...sorry.”

Hala: 334-335 “I felt bad because I kept thinking oh I have to do that, I have to do that but I don’t know why I never ended up doing what. I felt really bad about that though.”

George: 688-691 “It was just slightly annoying or something but honestly there is way worse things that happen. It’s not like you pushed me actively to do studies and stuff and I just felt a little embarrassed because we ended up not doing a lot of studies towards the end.”

Incentive

Once the individual ‘SONA’ credits target had been reached there was little motivation to continue with the study. For most people this occurred in or around January or early February and the need to carry on with this study was reduced.

George: 537-539 “and like in January when we were actually trying to get studies I had pretty much filled out my ‘SONA’ points already and that’s when I had to drop off.”

Shirley: 425-427 “Do you know when I think about it at the beginning I wanted to participate in the team because I needed ‘SONA’ points but a month after that I completed 240 so I didn’t need to do the study.”

Sarah: 524-528 “I was just trying to take part in any to get my quota for methods and stats. I don’t know how they. We didn’t discuss what kind of studies we wanted to do. I was

just putting the ones that were I suppose the easiest to do. The ones that didn't take very long but you still get points for."

The £150 incentive was not a strong enough incentive for the participants to remain involved over such a long period. As George and John showed there was little motivation in receiving a three-way share of the £150.

George: 615-617 "Oh I forgot about that to be honest. That may very well be because I mean at the beginning for me it was the points were the most important thing. Because I was always just worried about the 'SONA' points."

John 522-523 "Yes yes it (*the £150*) was nice and we were like "that will be cool" but not to the point of lets go track down this other person."

7.2.4: Discussion

This study did not manage to provide any useful team data primarily because the people in the teams did not feel part of a cohesive group. Each member had joined up to achieve their own personal goal of obtaining 'SONA' credits, and when that goal had been reached it appears there was insufficient incentive to carry on. The team members did not, in the majority of cases, know any other team member, apart from remotely over the internet. According to Aubert and Kelsey (2003) a virtual team is composed of groups of people performing tasks with a common purpose who are mutually accountable for their results. They work across time and space, employing information technology. Ferreira, Pinheiro de Lima, and Gouveada Costa, (2012) and Aubert and Kelsey, (2003) cited that a lack of clear communication was a major problem with performance in virtual teams. The virtual team members did not feel they were letting their team mates down by not fully participating. When one person failed to take part it was very easy for the others to give up the task, citing the fact that the team task had

already broken down as a result of another team members' actions. This therefore absolved themselves of blame. Steffel, Williams and Perrmann-Graham (2016) found that people were more likely, when faced with options with consequences, to delegate the decision to others. In this case they would rely on others to decide which studies could be undertaken and when the others did not take that initiative they were able to blame them for the team's failure. Delegation of a task is an effective way to pass the blame onto others.

According to Chong, Van Eerde, Rutte and Chai (2012) research has shown there are three aspects of team proximity that can improve team work communication: team awareness; reduced amount of effort to have a conversation; and team identity which develops when teams meet face-to-face. The teams in this study did not need to meet up as part of the task, had little or no communication between them and had no team identity and so that cohesiveness was never initiated.

Although the study initially appeared to be an easy method of gaining credits (there were 50 on offer overall) the slow drip-feed style of collection over a five month period ensured that other studies would allow a quicker and less complex route to the individual's goal number of 'SONA' credits required to pass the course. Once that target was reached there was little incentive to carry on with this particular task. Hackman (1987) noted that teams were more successful if the rewards and objectives of the team were focussed on the team rather than the individual. Team members are motivated by tasks that require a variety of skills, provide autonomy, are meaningful and provide feedback on their performance (Fleishman & Zaccaro, 1992). In this study the task did not, in retrospect, provide these aspects to the individual team members. The tasks of taking part in the Psychology experiments were individual requirements in order to achieve the 'SONA' credits needed to complete the course. Whether others in the team actually undertook the same tasks made little difference to the team members' own goals. Their autonomy on the task was limited. They could choose which studies they took part in but had no control over their team mates' choices. The reward of achieving extra 'SONA' credits occurred regardless of the other team members' involvement and the reward of £150 prize money felt sufficiently remote that it was clearly not a motivating factor. This was in contrast to the previous studies in which the teams were

working together to build a business in the case of the long-duration study, or carry out a laboratory research project in the case of the medium-duration study. In both these cases the teams had to rely on their team mates in order to complete the task for them all.

If this study were to be re-run a different team task would be required in order to keep participants involved for a five month period of time, and the team members would have to meet face-to-face in order to encourage team camaraderie and to develop some team identity. The team objectives would need to be something that benefitted everyone when it was achieved, so that an effective group purpose would be engendered as had occurred in the previous long and the medium duration studies. The short-duration study teams worked together to complete four tasks and again this was achieved by all the team working together towards that goal. This experimental study was let down by not providing the team with all the aspects that are needed for team work to succeed according to Gordon (1983) i.e. that the members feel they are acting as a single unit; that they share a common goal; that rewards are shared amongst all members; that an action from one member affects the other members of the group; and that they collaborate on a common task. In this task the individual's goal outweighed that of the team and rewards were given to individuals rather than the group as a whole. The incentive (£150) offered did not seem to be a suitable or effective one for this particular group of participants. Perhaps offering to double the 'SONA' credits on those specific studies that the entire team had taken part in would have provided a better incentive for team cooperation.

The quasi-experimental team study did not produce any useable data in terms of educational teams, but gave some insight into the difficulties encountered in team study design. Data was gleaned however, from the individual participants, about when the participants signed up for the participation scheme, which was of importance to the understanding of who participates in research schemes and when, thereby increasing the knowledge of the general time perspective topic. This is reported in the following sub-sections.

7.3: Individuals Study: The Relationship Between Time Perspective Factors And Participation Sign-Up.

7.3.1: Introduction

The data for the individuals who took part in the quasi-experimental study plus the individuals who had taken part in the previous years' mid-length durational study were available to be examined looking for patterns of 'SONA' credit collection to see if there were any differences in time perspective between participants as to when they volunteered to participate in other researcher's studies. Sieber and Saks (1989) reported that a large majority of university level psychology courses included a participation pool recruiting most participants from introductory psychology classes. Roselle, Beck, Luther, Goedert, Shore and Anderson (2005) showed that participating in other peoples' studies improved the students' understanding of psychology. Even when given alternative options most students preferred to take part in other psychology research, rather than, for example, write a paper as an alternative, finding it to be more productive to their learning experience (Trafimow, Madson & Gwizdowski, 2006) as well as finding it more satisfying (Bowman & Waite, 2003).

Harber, Zimbardo and Boyd (2003) found that Future oriented students completed their research participation earlier than Present oriented participants. They also confirmed that female participants signed up for research participation earlier than male participants and suggested that studies held early in the semester would be more likely to have a disproportionate number of female Future oriented students and studies held later in the semester would have a disproportionate number of male Present oriented participants. This study aimed to test this relationship. The hypotheses are that there would be a relationship between the Future scores and their timing for collection of 'SONA' credits from the research participation scheme. It is expected that the higher the score in Future the earlier they would collect credits, complete their collection of required points sooner and complete the task with a fewer number of studies thereby utilising their available time more efficiently. Harber et al. (2003) only studied sign-up to participation schemes with the Future and Present factors but this study looks at all five ZTPI factors. The next hypotheses are that there

would also be a relationship between the 'SONA' credit collections and the other four Zimbardo time perspective factors. It is expected that those high in the Past Positive factor, Present Fatalism factor and the Present Hedonistic factor would sign up later than lower scorers of these traits as the high scorers would believe that it will all get achieved (Past Positive), that it does not matter when they attend as it will make no difference (Present Fatalist) and would be delaying applying as the present moment would be more important than the future requirement (Present Hedonistic). High scorers in Past Negative are expected to sign up earlier thinking things will go wrong if they do not get the credits sooner rather than later.

7.3.2: Method

7.3.2.1: Design

A correlational design was carried out with the scores for each of the five time perspective factors and the number of days taken to achieve the participation scheme point count from the first experiment until the completion of the required number of points to see if there was any relationship between the time perspective factor scores and the collection of 'SONA' credits. The criterion variables were the number of days taken to achieve the credits target; the number of times the participants logged in to the system; the number of studies taken; the month when collection started and the month when the target 'SONA' credits had been achieved. The predictor variables were the scores on the five ZTPI time perspective factors.

7.3.2.2: Participants

There were 163 participants in this study. Eighty five were Psychology postgraduate students with a mean age of 28.02 (SD=7.83) years ranging from 21 to 53 years, (16 males, 69 females). Seventy eight were undergraduates with a mean age of 20.58 (SD=3.83) years (of the 69 who reported their age) ranging from 19 years to 45 years (20 males, 58 females). All the undergraduates were second year students attending a research methods module at level 5. The postgraduate students were all at level 7, attending a research methods class for those students who were undertaking the Kingston University MSc conversion class or a Masters course in child development.

Sixty two of the MSc participants had taken part in the medium-duration study from the year group 2013/2014 and 101 were from the year group 2014/2015 which included all the undergraduates and the postgraduate students from the 2014/15 cohort who all took part in the experimental study.

7.3.2.3 Materials

The Zimbardo Time Perspective Inventory and a personal details questionnaire were used in this study as have been used in the previous studies (Appendix A).

The SONA studies data was gleaned by administrative access to the Kingston University research participation website, in which participation of all studies is recorded, along with information on number of times the participant accessed the site, which research studies the individual had taken part in, and what number of 'SONA' credits they had received for each study. Students who sign up for studies but do not participate can have the points deducted if they fail to inform the researcher of their absence in advance.

Three items of data were collected for each participant: the number of days taken to collect the required number of 'SONA' credits for the course, taking day 1 as the date of the first study that the participant took part in. Although little research has been found on participant usage of participation schemes this aimed to show how focussed the participants were on the task in hand, the fewer the number of days used to complete the task to receive the required number of 'SONA' credits the more focussed they were on the task; the number of times the participant logged in to the participation scheme webpage which aimed to show how engaged the participant was with the task (the more often the participant logged in to see what studies were available the more engaged with looking for studies in which to participate); and the number of studies undertaken in order to complete the task of collecting 'SONA' credits which aimed to show how efficient the participants were in the task (the fewer the number of studies the more organised they were in completing the task).

7.3.2.4: Procedure

The participants had all previously completed the ZTPI questionnaire whilst taking part in the previous studies along with some basic details about themselves such as age, gender and year of study. The number of days, between the first study undertaken to the last study up to July 2015, was calculated as well as how many times the 'SONA' account was accessed during the academic year. The month that the first study was undertaken and the month during which the 'SONA' credits target was reached were also noted.

As undergraduates had to collect 600 'SONA' credits over a two year period to achieve their course requirements and postgraduates had to collect 240 'SONA' credits over one academic year to achieve their course requirements, the postgraduate sample were analysed separately from the undergraduate sample as the data was not comparable. The data was also analysed to see if there were differences or correlations between an individual's Future and Present Fatalistic scores and the period they took part in 'SONA' studies over the period allotted.

7.3.3: Results

The mean scores of the time perspective factors from both postgraduate and undergraduate participants are shown in table 7.8. There were no significant differences ($p>.05$) between the means of the two years of postgraduate participants (2013-2014 $N=62$, 2014-2015 $N=23$) in any of the five time perspective factors as shown in table 7.8 so both year groups were combined into one postgraduate cohort. There was also no significant difference by gender for any of the five time perspective factors for either the postgraduate cohort ($p>.05$) or the undergraduate cohort ($p>.05$) also as shown in table 7.8.

Most of the time perspective factor scores showed normal distribution except for the postgraduate Future score which was skewed ($-.88$, $SE.26$) and kurtotic (1.54 , $SE .52$) and Shapiro Wilks statistic ($df=85$) $=.96$, $p=.005$ and Kolmogorov-Smirnov ($df=85$) $=.11$, $p=.01$ showed there was not a normal distribution for this factor. Two of the participants were shown to be outliers with low scores in Future of 1.69 and 2.38 respectively. The

undergraduate participants' Present Hedonistic factor showed a high kurtosis statistic (1.27, SE=.56) but acceptable levels of skewness (Z score less than 1.96). The Future factor showed it was skewed (-.72, SE.27) and kurtotic (1.40, SE.54) and Kolmagorov-Smirnoff (df=78) =.14, $p=.001$ again showed there was not a normal distribution. Two of the participants were shown to be outliers in the Future factor. Acceptable limits for kurtosis and skewness are ± 2 (Trochim & Donnelly, 2006; Field, 2000; Gravetter & Wallnau, 2014) and as all four participants were normally distributed in all the other factors none of the data was removed from the data set.

As shown in Table 7.8 there was a significant difference between the postgraduate participants and the undergraduate participants in their Past Negative mean, $t(161) = 2.36$, $p=.02$, their Future mean, $t(161) = 2.26$, $p=.03$, and their Present Fatalistic mean, $t(161) = -2.70$, $p=.01$. Present Hedonistic means and Past Positive means showed no significant differences between the postgraduate and undergraduate groups ($p>.05$). Homogeneity of variance was assumed in all cases (Levene's statistic, $p>.05$).

The postgraduate participants were able to register onto the participation scheme, and therefore able to start collecting 'SONA' credits, in October of the relevant academic year. 56% of them undertook their first study that month. 14.6% had completed their target collection of 240 'SONA' credits by the December of that same year. Figure 7.1(a) shows the month that the postgraduate students first undertook 'SONA' studies to begin their credits collecting and Figure 7.1(b) the month they completed their credits collecting.

Table 7.8: Mean (+/- SD) of Time perspective factors by year group and gender.

	Past Negative	Present Hedonistic	Future	Past Positive	Present Fatalistic
POSTGRADUATE					
All Participants	2.84 (.77)	3.41 (.56)	3.65 (.53)	3.62 (.63)	2.38 (.58)
2013/14 cohort	2.86 (.80)	3.40 (.56)	3.68 (.51)	3.57 (.64)	2.40 (.62)
2014/15 cohort	2.80 (.69)	3.46 (.57)	3.59 (.59)	3.77 (.58)	2.35 (.47)
Male(2013/14)	2.84 (.69)	3.28 (.56)	3.45 (.54)	3.52 (.68)	2.35 (.42)
Female (2013/14)	2.84 (.79)	3.45 (.56)	3.70 (.52)	3.65 (.62)	2.39 (.62)
UNDERGRADUATE					
All Participants	3.11 (.66)	3.53 (.52)	3.46 (.56)	3.53 (.61)	2.63 (.61)
Male	3.28 (.65)	3.60 (.46)	3.27 (.63)	3.47 (.78)	2.49 (.68)
Female	3.04(.65)	3.51 (.55)	3.53 (.52)	3.55 (.55)	2.68 (.58)

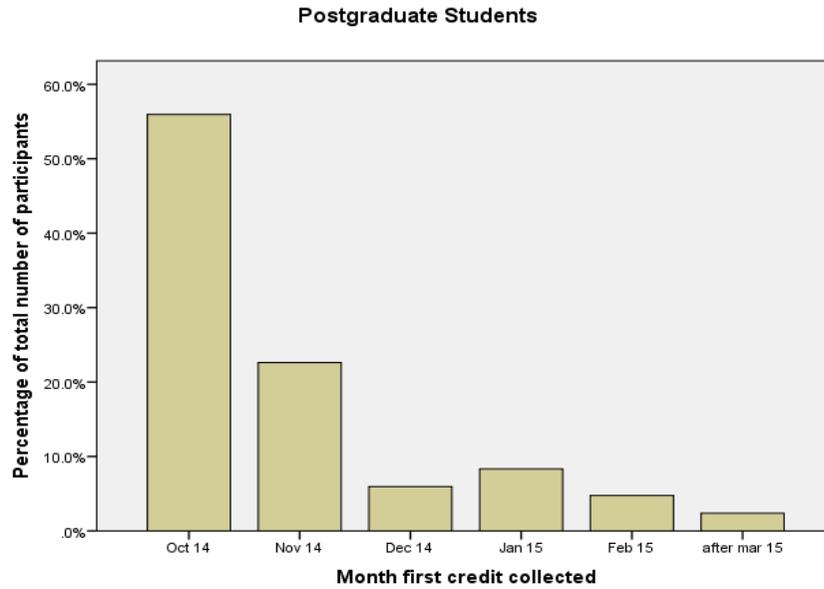


Figure 7.1(a): Postgraduate students (N=82): Month when first study undertaken

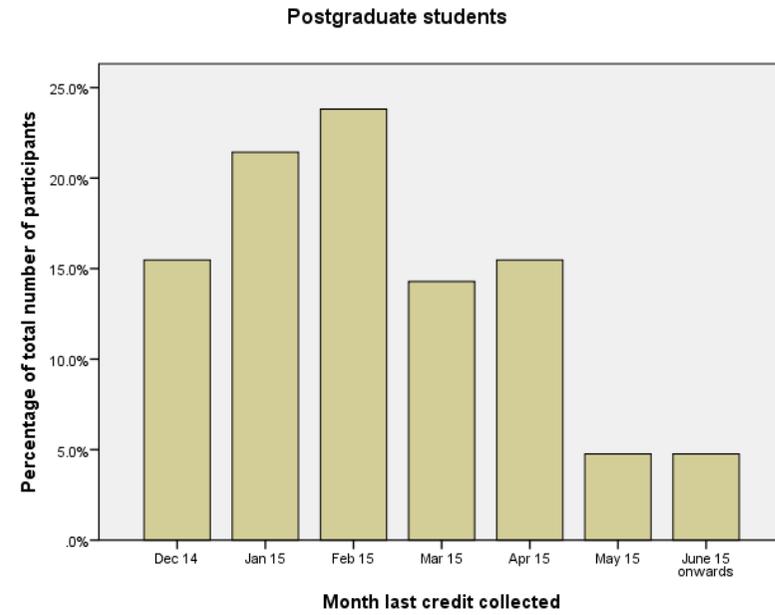


Figure 7.1(b): Postgraduate students (N=82): Month when credit collection completed

The postgraduates logged in to the 'SONA' system (assumed to be an indication of engagement with the task of collecting 'SONA' credits) a mean of 13.79 times (SD=8.20) with a minimum of 3 times and a maximum of 41 times. The number of studies they took part in to achieve their target of 240 'SONA' credits (assumed to show how efficient they were in 'SONA' credits collection) was 9.06 (SD=3.40) with a minimum of 5 studies and a maximum of 25 studies. The number of days spent collecting credits ranged from 6 days to 311 days with a mean of 103.17 days (SD=60.59).

The undergraduates were able to start collecting from November in year 1 of their studies and had a target of 600 to collect by the end of their second academic year. As shown in Figure 7.2(a) over 77% had begun collecting their points in their first academic year however none had finished collecting the required number of points before the December of their second academic year. All the undergraduates finished collecting in the last half of the second academic year of the Undergraduate course as shown in Figure 7.2(b)

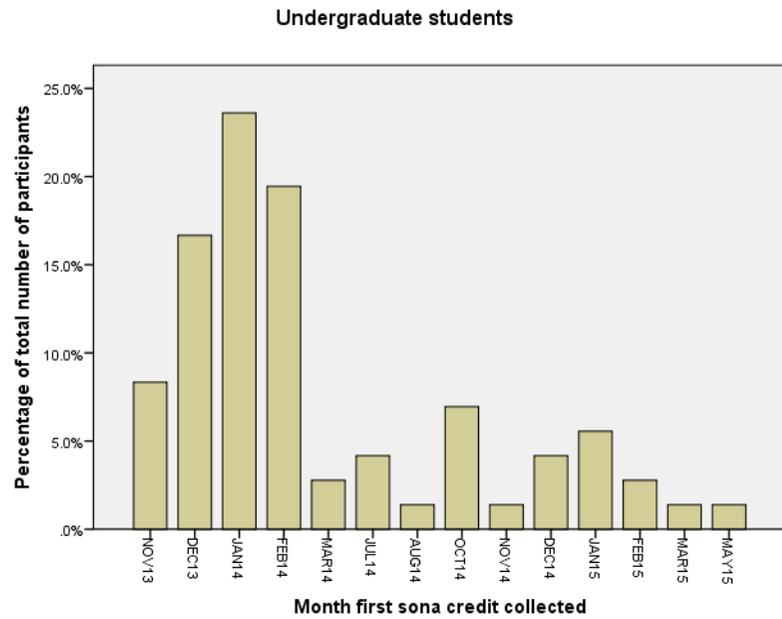


Figure 7.2(a): Undergraduate students (N=72): Month when first study undertaken.

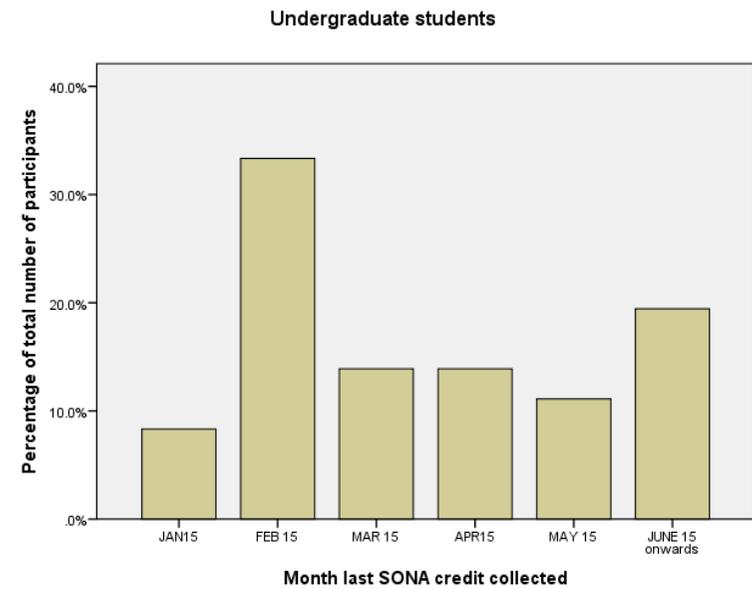


Figure 7.2(b): Undergraduate students (N=72): month when credit collection completed.

The undergraduate cohort logged in to the 'SONA' system a mean of 28.61 times (SD=15.61) with a minimum of 5 times and a maximum of 77 times. The number of studies they took part in to achieve their target of 600 'SONA' credits was 19.94 (SD=5.30) with a minimum of 5 studies and a maximum of 28 studies. The number of days spent collecting credits ranged from 21 days to 596 days with a mean of 347.65 days (SD=152.98).

Using a Pearson's correlation there were no significant correlations between the postgraduate or undergraduate participants' number of days taken to complete the 'SONA' credits requirement and their scores on any of the Time Perspective factors, nor on the number of login days nor the number of studies undertaken ($p > .05$) except for the postgraduate cohort and their Past Negative score and the number of studies undertaken to achieve the requirements $r(82) = -.30, p = .01$. The higher the score on the Past Negative factor for the postgraduates the fewer the number of studies were needed to complete the requirement. However as can be seen in Figure 7.3 the majority of participants in this cohort finished collecting in 15 or less studies but there were two outliers who undertook many more studies to complete the task thus rendering the data not normally distributed, Kilmagorov-Smirnov ($df=84$) = .24, $p < .001$. After removal of the two participants who both undertook 25 studies to achieve the goal the data shows a non-significant negative correlation, $r(80) = -.21, p = .05$ between the number of studies undertaken and the Past Negative factor scores.

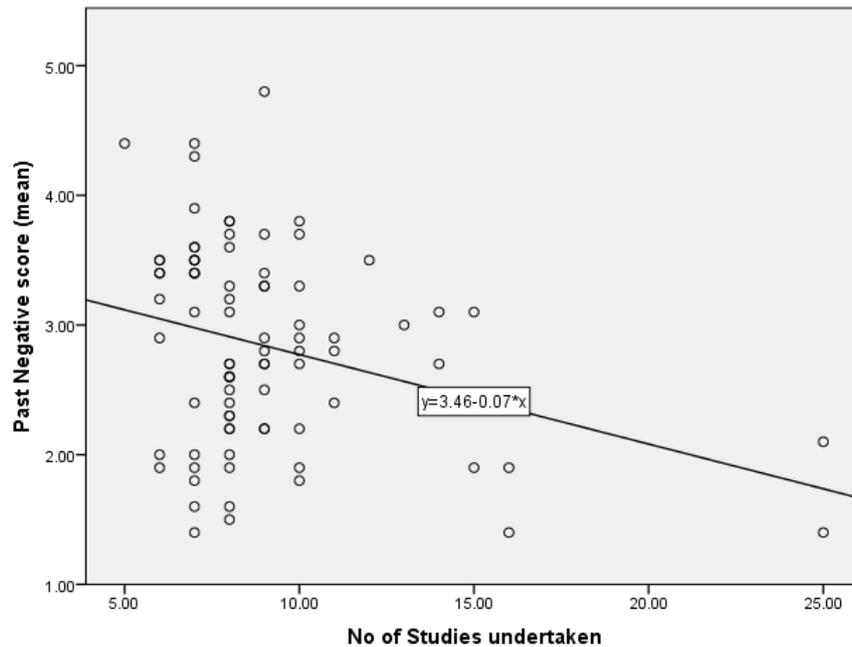


Figure 7.3: Graph showing Postgraduate Past Negative score and the number of studies undertaken to complete the goal 'SONA' credit collection.

There were no significant correlations between the postgraduate or undergraduate participants' time perspective and the month they first undertook a research study but there was a significant negative correlation with the postgraduate cohort Future score and the month they finally achieved the total 'SONA' credits required, $r(82) = -.25, p = .02$ and a significant positive correlation between the undergraduates' Present Hedonistic score and the month they finally achieved the total 'SONA' credits required, $r(70) = .25, p = .03$. This showed the lower the postgraduate Future score the later the required 'SONA' credits were completed and the higher the undergraduate Present Hedonistic score the later the completion of the required 'SONA' credits.

7.3.4: Discussion

This study found there were no significant relationships between any of the time perspective scores and the number of days taken to complete the task, the number of days logged in to the scheme and the number of studies undertaken to achieve the required 'SONA' credits. Although there was seen to be, initially, a weak negative correlation between the number of studies undertaken and the postgraduate Past Negative factor scores this was no longer significant when two outlying scoring participants' data, who partook in a considerably greater number of studies than all the rest, were removed from the data set. This suggests that these two outlier scores were unusually high and therefore not indicative of a true relationship between the two variables.

It had been hypothesised that there would be a relationship between the Future factor and the collection of 'SONA' credits with the expectation that those who are Future orientated tending to progress with the work that is required of them in order to ease their workload at other potentially busier times. This relationship was not found. In the case of the postgraduate participants they all had exams and coursework commitments that quickly built up as the one year course progressed and so achieving 'SONA' credits speedily and efficiently ensured more time for coursework and exam revision in the latter part of the course. This probably meant that even those postgraduates who were not highly Future orientated had to progress efficiently with the task in hand as time was limited for all the students. There were also no significant relationships with the undergraduate participants and this was likely because they had two academic years in which to complete their credit collection, and so could afford the time spent writing coursework or studying for exams without affecting the ability to collect credits outside the demanding work times of the year. Both cohorts therefore did not show a relationship between their time perspectives and their 'SONA' credits collection but possibly for differing reasons.

The 'SONA' credits system can be used at any time of the year by any researchers in the Psychology department at the University. In reality there are only a few studies in the early part of the academic year with the majority coming on to the participation

scheme website around mid December through till early February, when a large number of third year undergraduates are looking for participants for their final year dissertation projects. This means that most of the studies are available to participants within an eight week period. Those participants that want to get their credits completed early may have found insufficient studies available to take part in the early months of the academic year. There were however some studies on the website early that gave 100+ credits but not many participants were able to avail themselves of these studies. Those that did would have an advantage over others who had to carry out a greater number of studies worth fewer points.

A weak significant negative relationship was noted between the postgraduates' Future factor and the month they undertook the last study to achieve their points. The lower the score on Future factor the later they finished attaining their 'SONA' credits. People with low Future scores tend not to work hard to achieve their goals early so this does support the understanding of how those with low Future scores behave. The undergraduate cohort did not follow the same pattern with low scoring Future participants not finishing significantly later than the high scorers. A weak significant positive relationship was however found between the undergraduates Present Hedonistic score and the month that they finished collecting 'SONA' credits. The higher the undergraduates scored in this factor the later they finished collecting. Present Hedonistic individuals enjoy the present, not unduly worrying about the future, and so this too is as expected with present knowledge about those scoring high on the Present Hedonism factor. Again the fact that the postgraduate cohort did not show the same relationship perhaps is also due to less available time for the postgraduates to achieve all the course requirements and therefore their behavioural preferences have to be overcome by the course practicalities.

In the same way that time perspective factors have been studied to see if there are any relationships between them and research participation there are others aspects of time behaviours which could impact on when and how an individual decided to embark on the compulsory participation requirements embedded in their academic course.

7.4: Individual Study: The Relationship Between Pacing style and Chronicity And Research Participation Sign-Up.

7.4.1: Introduction

There are several different questionnaires establishing differing time behaviours as has already been referred to in Chapter 3 including, amongst others, how people like to pace themselves when working and how people like to work with respect to the number of tasks they have to complete.

Pacing style (Gevers, Mohammed & Baytalskaya, 2013) reflects how people allocate the time available up to a set task's deadline. Gevers et al., (2013) defined pacing style as "behavioural tendencies regarding the distribution of effort over time in working towards deadlines" (p502). Some people prefer to wait until a deadline is nearly upon them before they are motivated to start work (deadline action style) whereas others prefer to start a task as soon as it is allocated (early action style) or to work steadily throughout the available time (steady action style). Some adopt a hybrid approach working early and then after a lull picking up the tempo as the deadline approaches (U-shaped action style). Gevers et al., (2013) concluded that these were somewhat stable behavioural tendencies that may be influenced by different situations. These individual differences in approaching a task could cause strains within teams working together, as differences in pacing styles could cause conflicts as to when tasks should be started or completed (Mohammed & Nadkarni, 2011). On the other hand differences in pacing styles within the team could improve team performance by allowing early pacers to start a project, steady pacers to keep the momentum going and the deadline pacers to finish the project (Mohammed & Harrison, 2013). Pacing style as measured by the PACED questionnaire has been shown by Gevers et al (2013) to be a separate time construct from other temporal individual differences with no significant relationship with time perspective and time urgency. Procrastination was positively significantly related to deadline style and negatively related to steady and U shaped styles. The early style and the deadline style were shown to be opposite ends of the

same factor (Gevers et al., 2013). Qualitative studies by PhD student Beeftink (2008) as cited in Gevers et al., (2013) showed a strong tendency for architects following a creative brief to display a U-shaped action style (18 out of the 25 architects interviewed showed a preference to this style); an initial engagement with the task was followed by a period of incubation to ruminate about the complexities of the problem before ending the task with a final push. He suggested that this style suits the creative process but it may be that the creative process is one example where external pressures alter the preferred pacing style behaviour. The pacing style scale allows respondents to measure behavioural tendency on each style allowing a balanced emphasis on each of the styles. The first hypothesis is that there would be a relationship between the dates of 'SONA' credits' collection in participants with differing pacing style scores, with deadline style individuals leaving credit collecting until later in the process and participants who preferred a steady style collecting them earlier.

The Polychronic Attitude questionnaire (PAI) looks at whether people prefer to work on one task at a time or have several tasks running concurrently. This questionnaire was found to be linked to a person's preference in working style. People who are polychronic will be more likely to reschedule activities in response to demands, have a more flexible schedule, think of several other things at the same time as carrying out a task, often change from one activity to another during the course of a day and will combine routine tasks to try and free up some time (Kauffman-Scarborough & Lindquist, 1999). They noted that polychronic time use is negatively correlated with role overload, positively correlated with education levels, as well as working hours in excess of 40 per week. Bluedorn, Kaufman, and Lane (1992) suggested that not only do individuals show differences in polychronic/monochronic behaviours but also organizations show similar differences. The more polychronic departments tend to have longer time horizons and are more externally focussed on customers, suppliers and changing technologies rather than a monochronic organization which will have a more internal focus on interpersonal development, rules and procedures. These cultural differences within teams could potentially cause problems unless an understanding between polychronic and monochronic people is reached. The second hypothesis is that there will be a difference in 'SONA' credits' collection between polychronic and monochronic individuals with

those who score higher in polychronicity taking a lesser number of days to complete the collecting task.

7.4.2: Method

7.4.2.1: Design

A correlational design between PAI scale (high score is more polychronic, low score is more monochronic), pacing style scores (deadline, steady and U shaped) and the pattern of 'SONA' credits collected over a set period.

7.4.2.2: Participants

Eighty eight, of the 163 participants who took part in the previous study, were also given the two extra questionnaires relating to this study looking at 'SONA' credits' collection by month and the scores on the PACED and PIA questionnaires. Nineteen of the participants were postgraduate students attending a masters research methods class. Their mean age was 26.84 (SD=5.05) years with a range between 22 and 41 years. 16 were female and 3 male. Sixty nine were undergraduate students all in their second year of the three year Psychology BSc degree attending a research methods class. Their mean age was 20.25 (SD=2.54) years with a range between 19-34 years. 51 were female, 18 were male. As before all of the participants attending Psychology research methods classes had to collect 'SONA' credits as part of their degree requirements (postgraduates had to collect 240 in the academic year, undergraduates 600 over a two year period) and all had signed consent forms after reading the information sheet regarding the study (Appendix N and O).

7.4.2.3: Materials

As in the previous study 'SONA' credits were accessed through administrative access to the Kingston University Research participation pool. The number of days and the number of studies taken to achieve the required 'SONA' credits, the number of days that the participant logged in to the research participation website, and when they undertook each study was noted.

The PACED questionnaire (Appendix U) (Gevers, Mohammed, & Baytalskaya, 2013), included nine questions which looked at how people like to pace themselves on a task with a time limit. Participants are asked to indicate on a 5 point Likert scale how much they agree with the statement where 1 = strongly disagree and 5 is strongly agree. In confirmatory factor analyses carried out by Gevers, Mohammed and Baytalskaya, (2013) three factors were identified. To score the questionnaires questions 1,4 and 7 are summed to create the deadline pacing style, questions 2,6 and 8 for the steady action pacing style and questions 3,5 and 9 for the U shaped action pacing style. The deadline pacing style score also indicates those who show an early action pacing style i.e. a low score on this scale indicates someone with an early action pacing style and a high score a deadline pacing style.

The Polychronic attitude questionnaire (PAI) (Appendix V) (Kaufman-Scarborough, & Lindquist, 1999) has four questions which look at whether people prefer to work on one task at a time finishing that before starting the next task or to have several tasks running concurrently. The scoring is on a Likert scale from 1= strongly agree to 5 strongly disagree. The last statement is reverse scored and the points are combined and averaged. The lower the score the more monochronic is the participant's orientation, the higher the score the more polychronic is the participant's orientation. The PAI (Kaufman et al. 1991), a four-item scale has a coefficient alpha (internal consistency reliability) value of 0.79.

7.4.2.4: Procedure

Both of the questionnaires were given to the participants as part of the collection of questionnaires for the experimental study with an information sheet, consent form, ZTPI and a debrief form. The questionnaires (PAI, PACED) were given in a counterbalanced order to the participants along with the ZTPI questionnaire of the previous study.

7.4.3: Results

Both the undergraduate and the postgraduate cohorts were analysed separately as the number of credits required differed from each group and were therefore not comparable to each other. Table 7.9 shows the means (and SD) of the PAI questionnaire as well as the three factors of the PACED questionnaire and the details of ‘SONA’ credit collection from the postgraduate and undergraduate cohorts.

Table 7.9: Means of scores (+/- S.D.) from the PAI and the PACED questionnaires and the ‘SONA’ credit collecting data split by study level.

Mean (SD)	Postgraduate (N=19)	Undergraduate (N=69)
PAI	3.14 (.91)	2.92 (.74)
Deadline	9.42 (2.87)	8.78 (2.86)
Steady	7.68 (3.13)	8.88 (2.81)
U-shaped	10.42 (2.65)	9.71 (2.79)
No of days to collect ‘SONA’ points	127 (58.16)	354.64 (146.51)
No of log in days	17.11 (8.80)	27.74 (14.36)
No of studies to complete target	13.05 (5.13)	20.10 (5.19)

The PAI scores, looking at how the participants used their time completing tasks (monochronic-one task at a time, polychronic-several tasks running concurrently) and the pacing style scores (deadline, steady or U shaped) showed no significant correlations with collecting of ‘SONA’ credits, in terms of how many days required to collect the target number ($p>.05$), how many log-in sessions ($p>.05$) and how many studies it took to achieve the required ‘SONA’ point ($p>.05$) for both the postgraduate and the undergraduate cohorts. There was no significant correlation between when the postgraduates first collected ‘SONA’ credits or finished collecting ‘SONA’ credits and their scores with the PAI or PACED questionnaires. Nor was there any significant correlation with the undergraduates and the month they started collecting the ‘SONA’ points.

Table 7.10 shows the number of undergraduate participants each month when they had finished collecting their 600 ‘SONA’ points. The undergraduates had two

academic years in which to complete the task (January 2014-September 2014, October 2014-August 2015) but only one participant had collected the required 600 'SONA' points by December in the second year of their studies.

Table 7.10: *The frequency of Undergraduate participants month by month of those that had completed the task collecting 600 'SONA' points.*

	Frequency (N=69)	Cumulative percentage
Pre Dec 2014	1	1.4
Jan 2015	6	10.1
Feb 2015	24	44.9
March 2015	10	59.4
April 2015	10	93.9
May 2015	7	84.1
Post June 2015	11	100

However a weak significant positive correlation was found with the undergraduate cohort and the month they finished collecting 'SONA' credits with their deadline pacing style score, $r(67) = .25, p = .04$, and a weak significant negative correlation with the steady pacing style score $r(67) = -.27, p = .02$ and the month they finished collecting 'SONA' credits. No similar correlations were seen in the postgraduate cohort ($p < .05$).

7.4.4: Discussion

No significant relationships were found between the three measurements of 'SONA' credit collecting and the scores on the three pacing styles or the level of polychronicity. The number of days spent collecting credits, the number of days the participants logged in to the research participation scheme network and the number of studies taken to achieve the credits showed no significant association with the score on the preferred method of pacing the workload. However although there were no significant correlations with the postgraduate cohort in terms of when they finished collecting 'SONA' credits there was a weak significant positive relationship in the

undergraduate cohort with the collecting of the credits and their deadline and a weak significant negative relationship with their steady pacing scores.

A large number of studies come on line on the research participation scheme in January and February each year. This is when the third year undergraduates are collecting data for their final year dissertation projects and participants are eagerly sought. During the remainder of the year a steady stream of new studies are advertised on the research participation scheme but in far fewer numbers. Exams and coursework deadlines tend to be at the end of semester 1 (in December or early January) and then again at the end of semester 2 in April and May. The postgraduate cohort have a relatively short time period in which to collect credits having been advised of the necessity to collect in the October of the academic year, and therefore the majority of the postgraduates got on with the process during the relatively quiet work periods in January and February. This seems to show that the task was dictating the timings rather than the natural preference of the individual. The undergraduates on the other hand have two academic years in which to collect credits and so those wanting to complete early can get involved in other researchers' studies in year 1 of their degree course as well as in year 2. This therefore will show up pacing style differences more clearly as those with an early pacing style or a steady pacing style are able to offer themselves as participants in that first academic year thereby allowing themselves more available time in year 2 as the course demands increase. This therefore fits with the results found in this study where a weak positive relationship was found with the month of finishing collection of 'SONA' credits and the deadline style score and a weak negative correlation with the steady style score and finishing collecting 'SONA' credits. The higher the score on deadline the later the participants finished the task of collecting points and the higher the score on the steady pacing style the sooner the participants finished the task. Task conditions tend to impose constraints on how people approach a task (Mischel, Van Mechelen & de Raad, 1999, Shoda, Mischel, & Wright, 1993) and with short deadlines individual differences in pacing style will naturally have to be ignored so this result shows that pacing style does have an effect on the task but only when time permits.

No relationships were noticed with the score on polychronicity. Those people that liked to carry out several tasks at once behaved similarly in this task to those who

were monochronic and who preferred to complete one task before starting the next task. There is no way of knowing what else the participants did on the days they were collecting credits. They may have had lectures or seminars or sports activities that they added on to their 'SONA' credit collecting or they may have been single-mindedly collecting points to the exclusion of all other tasks. This information was not collected and therefore the lack of any significant results cannot be attributed to this trait as the wider picture was not known.

7.5: General discussion

The experimental team study showed up many of the problems that are often encountered when studying team activities. The participants were required to work as a team of three to take part in other Psychology departmental studies and as the individuals on the whole neither knew their fellow team mates, nor felt any team affinity with them, there was no cohesive feeling that the team need be as successful as they could be in achieving the teams' goals. It made little difference to the individuals whether their team was successful or not. The main aim of the participants was to achieve their own individual goal of collecting the required number of 'SONA' credits and once that had been achieved the individuals felt no compulsion to carry on with this specific study's aims. The semi-structured interviews confirmed the researcher's beliefs that the team activity ended up as an individual task rather than a team goal and that there was little feeling of being an integral part of a bigger team.

Although there was little team data that was gleaned from the study there were some interesting effects found in terms of time behaviours and the individuals. A significant difference was found between the elder postgraduate cohort and the younger undergraduate cohort in three of the five time perspectives (Past Negative, Future and Present Fatalistic). This suggests that there is a developmental aspect to Time Perspective confirming that as people age they become more Future orientated, less Present Fatalistic and less motivated by their negative views of aspects from the past. Fung and Isaacowitz (2016) reported that people's perception about time does change with age but that research on age differences in time perspective are generally

consistent, finding that as aging occurs people become more Present orientated. This is in line with the Socioemotional Selectivity theory (Fung & Carstensen, 2003) which suggests that as people age their future becomes shorter and they focus more on their present goals. This may well be the case with much older people, but in this case the participants were, in the majority, still in their 20s, and the elder age range noted in the postgraduate cohort are likely to be settling down to a more serious and focussed attitude towards their future than the younger undergraduate participants. This was noticed in Siu, Lam, Le and Przepiorka's (2014) study which looked at adolescents aged 15-25 and adults aged 35-55 finding that although both groups were more Future oriented than Present oriented the younger group was less Future oriented than the older group. The majority of participants in this study would still have been in the younger age groups of the Fung and Carstensen (2003) and the Fung and Isaacowitz (2016) studies. Lens and Gailly (1980) suggested that Future time perspective has a curvilinear relationship to age, reaching its maximum in adulthood and reducing in old age to a similar level as adolescence or early adulthood.

This study also found that there were no significant gender differences in the collection of 'SONA' credits which did not support the previous research by Harber, Zimbardo and Boyd (2003). They had found that females were more likely to attend compulsory participation sooner than their male counterparts. In this study there were many more females than males who took part. There were limited numbers of studies in which to participate. Some psychology studies also had specific requirements and male participants tend to be required more often as there is an imbalance of males to females within the participation scheme users. This meant that the male participants in the research participation scheme often had a greater choice of studies in which to partake.

The study by Harber et al. (2003) suggested that those who were more Future oriented would sign up and complete the studies' participation sooner than those who were Present orientated. Harber et al. (2003) calculated the length of time to complete the participation obligation differently to the methodology used in this study. In this study the calculation was from when the participant first took part in a study until the time they had completed their required obligation. In the Harber et al., (2003) study the calculation was from the start of the semester until the participant had completed the

hours required. A similar data collection method was not possible in this study as not all the participants had access to the research participation scheme from day 1 of the semester. This different approach meant that in this study the participant was able to decide their starting time and the time taken to finish showed the single-mindedness of the participant in completing the task, whereas in Harber et al. (2003) the task started on the same day for all the participants and noted their finish date. Perhaps in this study the females started earlier in the process to collect points but took a similar length of time to complete the task. This was not analysed as gender was not a main interest in the study.

The undergraduate participants who had two academic years to complete collection of the 'SONA' credits showed some effect of time behaviours on when they finally finished collection of the credits. There were weak positive correlations seen with their scores on Present Hedonism and Deadline pacing style and a weak negative correlation with the score on the Steady pacing style and when they finished collection. This shows that when time is not pressing the time behaviours particularly the more procrastinatory behaviours affect when tasks are completed. The higher the steady pacing style the faster the credit collection was carried out, but the higher the Present Hedonism score and the deadline score the slower the credit collection. This effect was not seen in the postgraduate cohort who had less time to complete collection and so it appears they could not let their natural procrastination behaviours affect their task completion.

7.6: Conclusion

This chapter showed up many of the problems encountered when studying team behaviours. However the data showed a developmental aspect to time perspective factors and that timing of the volunteering to take part in a research participation scheme only showed any effects of time behaviours if there was sufficient time for the behaviours to manifest themselves. The postgraduate participants who had little available time to complete their credit collection showed no effect of any of the time perspectives that were studied whereas the undergraduate cohort who had more available time to complete their task showed some effects of time behaviours.

CHAPTER 8

The following chapter utilises qualitative analysis to establish how students view working together in teams within the education system. Thematic analysis is a method which focuses on examining themes within a data set. It constructs theories that are grounded within the data and allows a rich, detailed, and complex description of that data. Having established how the students viewed working in educational teams generally, part 2 of the chapter goes on to explore if those with lower scores on the two ZTPI factors that have been seen to have an association with team performance, the Future factor and the Present Fatalistic factor, view team work differently from those who scored higher in these factors.

8.1: Individual's Experience of Working with Others in Teams: A Qualitative Study Using Thematic Analysis.

8.1.1: Introduction

This qualitative analysis aimed to elicit how people generally view teamwork, specifically from an educational point of view. The question to be asked for this study is how individuals experience and make sense of working with others in a team; in particular its purpose is to establish what postgraduate students feel about having to work with others in order to achieve their own goals as well as those of the team. Many courses in further education incorporate small group team work as part of their modules for a variety of purposes, including allowing students to gain knowledge from others with differing views, improving communication skills and practicing generic skills required for future employment opportunities (Riebe, Roepen, Santarelli & Marchioro, 2010). This is because many Universities believe that team work is an important transferable skill for students, one that employers both require and request. Courses which include team work in their structure will therefore improve the university student's employability options in an increasingly difficult market. Chen, Donahue and Klimoski (2004) showed that class based teamwork improved students' teamwork knowledge and skills, but did not modify the students' attitudes towards team work. Opatrny, McCord, and Michaelsen (2014) carried out a longitudinal empirical study to see if transferable teamwork skills could be taught and demonstrated that class based, taught, team

work aided learning and retention, and improved an individual's team work skills in subsequent classes.

Although team work is used as a well established method of teaching in higher educational institutions little work has been carried out as to what the students themselves feel about this form of assessment, whereby their own results are closely allied with those of their fellow team members. Favor (2012) looked at students' perceptions of cooperative learning skills. She studied adult students who had worked in small teams, of 3-6 members, in an accelerated business degree course from one specific college in the USA. The students were from three different levels of education; Bachelors, Masters, and Associates. The students' perception of team work showed that overall 74-85% of students were happy with the members of their team. Approximately 75% had similar performance expectations with other members of their teams, although this differed significantly by degree level, with Masters students and Bachelors students being more aligned than Associate students. The majority of participants (66-71%) felt that the workload was shared between the team members, and most of the teams (70-81% depending on degree level) seemed not to engender intra-team conflict. The lower degree level students reported more perceptions of conflict than the Masters level students. Similarly the lower level degree students were significantly less likely to prefer team work than higher level students, with overall only between 51-61% actually liking team work. Only 43%-50% felt that teamwork contributed to their learning. Favor looked at these questions from a quantitative standpoint with students answering questions by agreeing or disagreeing with the item on a Likert scale. This study aimed to look at similar attitudes, such as performance expectations, workload sharing and intra-team conflict, from a qualitative viewpoint, in order to elicit a richer understanding of these aspects of educational team work.

A thematic analysis was chosen as the best method for answering this question qualitatively. Thematic analysis utilises a flexible methodology for identifying, analysing and reporting patterns across an entire dataset. Braun and Clarke (2006) reported that thematic analysis is a foundational method for many forms of qualitative analysis. It is a method that is essentially independent of theory and epistemology, and is a flexible tool that can provide a rich and complex account of the data. Braun and Clarke (2006) reported that there were many advantages to using thematic analyses, including its flexibility, its relative ease of learning how to carry it out, and its accessibility both to relatively inexperienced researchers as well as to an

educated general public. It can also highlight key features of a body of data and can generate insights and interpretations of that data. Many of these advantages also can be disadvantages for this methodology. Its very flexible nature can mean that it is not always taken seriously as a format for research, although by following the methodology by Braun and Clarke (2016) these perceived disadvantages can be overcome.

A thematic analysis is a method which aims to identify and interpret themes within the data (Braun & Clarke, 2016). This is a theoretically flexible approach in which subjective themes are found organically from analysing the data actively and systematically. The Braun and Clarke (2006) methodology falls under the “Big Q” paradigm in which the researcher is actively involved and it emphasises contextualised understanding of the data. Coding of the data is fluid and flexible and evolves as the analysis moves forward. Braun and Clarke (2006) describe the researcher using thematic analysis as a sculptor rather than an archaeologist, using the data to build a picture, rather than excavating amongst the data to tell the story within. Thematic analysis can be used not only to understand the surface semantic meaning of the data set, but also the implied latent meaning within the data. It can therefore be used to understand both the “what” and the “how” questions within the data.

The qualitative thematic analysis was carried out on the interviews from twelve individuals who had attended a Master’s level research methods class at Kingston University and who had all taken part in a group project as part of the module requirements in the weeks preceding the interview sessions.

8.1.2: Method

8.1.2.1: Design

The study used a qualitative design using a semi-structured interview of 12 participants and was analysed using a thematic analysis as described by Braun and Clarke (2006). The design was located within the “Big Q” approach to qualitative research. The aim of coding using the Big Q paradigm was that it is an approach that emphasises contextualised understandings and rejects notions of objective reality (Kidder & Fine, 1987). It uses a flexible and organic process, with the researcher in an active role that evolves fluidly as the analysis takes place.

8.1.2.2: Participants

The participants were 12 Psychology Masters students, of which 10 were female. They were aged between 22 and 41 years with a mean age of 27.42 (SD=5.32) years. Seven were UK home students, one was Greek, two from the USA, one from Germany and one from the Philippines. The majority of the participants spoke English as a first language except for George, Nazima and Emily (all pseudonyms) but these three were all fluent English speakers. All the students were registered as full time students on a one year post graduate course, and had attended a two semester course on research methods on which I was a class tutor, working under the guidance of a supervisory module leader who presented the lectures for the course. I ran the weekly seminar workshops in which the material for the lectures was put into practical context. All the interviewees were offered credits on the university participation scheme to take part in the interview but all twelve had already achieved sufficient credits to satisfy their course requirements, and so did not receive any extra benefits from taking part in this study. As a tutor for the class over the two semesters (22 weeks of contact) the twelve participants were known to me and they had all volunteered at the end of the second semester to take part in the semi-structured interview that was held after the course had completed its formal teaching. All the students who had attended the final class were invited to take part (27 in total) and everyone who had volunteered was accepted to be interviewed.

All 12 had taken part, as a member of a team, in a research project as part of the course which was undertaken over a ten week period in the second semester alongside the regular statistics classes and was mentored by me throughout the research process. The students had to work together as a team to undertake a psychological experiment with participants and then each one wrote it up as a laboratory report as an individual. All 12 participants were still registered at the university and were working on the dissertation modules for their course at the time of the interviews. Table 8.1 shows the demographics of the 12 participants, their pseudonyms and their scores on the two ZTPI factors that had been found to be significant predictors of team success in previous studies (Chapters 4 and 5).

Table 8.1: *Descriptions of the participants' by age, gender, country of origin, and scores on the Present Fatalist and Future factors.*⁶

Participant No/ Pseudonym	Age	Gender	Country of Origin	Present Fatalist score	Future score
3 Rachel	25	Female	Philippines	1.67 (low)	4.00 (high)
5 Emily	29	Female	UK	2.22 (low)	3.54 (average)
6 Alice	41	Female	UK	2.22 (low)	3.69 (high)
7 Hala	23	Female	UK	3.33 (high)	3.54 (average)
11 Nazima	24	Female	Germany	2.56 (high)	3.77 (high)
12 Sarah	30	Female	UK	1.89 (low)	2.38 (low)
13 John	27	Male	UK	2.67 (high)	4.54 (high)
14 George	26	Male	Greece	3.22 (high)	3.31 (low)
19 Shirley	33	Female	UK	1.44 (low)	3.92 (high)
123 Sophie	24	Female	USA	2.33 (low)	4.15 (high)
124 Rima	25	Female	UK	2.22 (low)	3.08 (low)
126 Ellie	22	Female	USA	2.89 (high)	4.31 (high)

8.1.2.3: Interview Schedule

The interview schedule (Appendix W) was devised by me, after taking advice from two experienced qualitative researchers, using open ended questions aimed at eliciting how the participants felt about working in teams. The questions started generally inviting the participants to recall some teams they had participated in to ensure they understood the team concept, and then discussed how they felt about working with others in teams, how they behaved within teams, whether they enjoyed leading a team or being led. It then asked them about working with others with differing approaches to themselves, specifically differences in time perspective behaviours. The original suggested questions were examined by an experienced interviewer, and advice was heeded in order to increase the likelihood of achieving rich data. Prior to meeting the participants a pilot interview was carried out with two volunteers in order to receive feedback on the interview process, and to establish that all the questions were clearly understandable. The feedback from the pilot study was positive and no changes were required.

⁶ As reported in Chapter 7, the low, average and high scores for PN and F were calculated using the scores from 99 participants who had taken part in a previous study. The scores designated average fell on or around the mean or median scores: PF mean=2.57, PF median=2.56; F mean=3.47, F median =3.54.

8.1.2.4 Procedure

All the participants, except Rima and Ellie, had previously taken part in another experiment earlier in the academic year at which time they had filled in the ZTPI questionnaires as well as demographic information about themselves. Rima and Ellie therefore filled these forms in before the semi-structured interview began. The individual Interviews took between 30 minutes and 50 minutes to complete. The interviews were each recorded using two separate portable recording devices. The interviews were held in a quiet private room, either in the Psychology department or the Learning Resource Centre (Library) at Kingston University. These rooms were small functional rooms with little equipment in them apart from a table and two chairs. The interviews were held at the University from April 2015 through to June 2015 after all the formal classes and the exams had been completed, and all the course work had been submitted, but before any results had been received. This time period was crucial for the interviews as there was no influence that I could put on the participants' results as all the work had already been submitted and marked but the marks had not been made known to the students, and therefore could not have implications caused by getting better or worse marks than the student had anticipated.

When the participants had first volunteered to take part a suitable date and time was arranged and the participant was advised in which room the interview would take place. They were asked if they agreed to have the interview recorded before two recording devices were activated. A consent form (Appendix X) was signed after an information sheet was given to the participants which explained what would take place (Appendix Y). A schedule of questions was used (Appendix W) and adhered to as far as possible whilst retaining some flexibility if the conversations demanded. At the end of the interview a debrief form was given to the participants (Appendix Z)

All the interviews were transcribed by the researcher using a verbatim account; keeping true to its original nature using relevant punctuation etc. (An example is shown in appendix AA). Any sections that were inaudible on one of the recording machines were listened to again on the second recording device. If still inaudible a blank was left in the transcript.

The transcripts were then subjected to thematic analysis (Braun & Clarke, 2006; Clarke & Braun, 2016) as described below. Usually performed predominately by one researcher, with support from an interpretative community, thematic analysis aims to produce a coherent coding of the data, albeit a subjective one. Using an inductive version allowed me to have an open minded flexible look at the data without a pre-existing conception of what I would find. It emphasised looking for patterns across the data set, and allowed me to detect semantic surface meaning in the data set as well as latent meanings within it.

8.1.2.5 Analytic Strategy

Familiarization of data set:

The interviews were read and re-read several times. The interviewees' scores from the time perspective questionnaire were not noted until after the themes were developed so as to avoid influencing theme generation in this respect. This was so that I kept attending to the overall research question of how people viewed team work, and only attended to the differences between the individuals' high and low Future and Present Fatalistic scores at the end of the process.

Generating Initial codes:

This was based on a 'contextualist' epistemological method which acknowledges both the way people interpret their experiences (an essentialist/realist approach, in which motivations, experiences and meaning are interpreted in a simple straightforward semantic method for which the use of language reflects meaning and experience) while also acknowledging the way that the social context impinges on the meaning (Braun & Clarke, 2006). The coding was carried out over the entire data set and codes were identified in an inductive, 'bottom up' way in which the resulting themes were strongly linked to the data. This inductive analysis included a coding process that did not try and fit into pre-existing codings but was a data driven coding process.

The data at this stage was examined initially line by line, and the general meaning was noted in a comment by the side of the transcript sheet (example in Appendix AA). This process occurred three times for each piece of data until virtually all the participant lines of each

transcript were noted. The initial codes were then transferred to a new file without the transcripts and were collated into clusters or patterns. This was done by colouring matching themes that appeared at surface value to be mentioning the same topic across the entire data set (example in Appendix BB). Each candidate theme was then isolated in a separate document including the participant number and line numbers that the comment referred to.

After discussion with an experienced second analyst on each code explaining why and what the codes were showing, the matching codes were further separated into more in-depth codes within those potential coding clusters, for example separating those codes that mentioned leadership into different aspects of leadership.

Generating themes:

Further in depth reviewing of the coding took place separating codes from one another, which were then blocked together into groups that seemed to be connected in some way, to make four initial candidate themes: organisational aspects, leadership, positive and negative aspects of team membership. A further meeting was conducted with a co-analyst to discuss each candidate theme and whether they really explained the data. This led to a further studying of the candidate themes to try to pin them down more succinctly. This led to a re-evaluation of some of the previous themes. Five themes were identified from this second round of theme making: leadership: expectations, experiences and evaluations; negative aspects of team membership; socialisation and support; rewards obtained by being part of a team; and organisational aspects with roles, personal and team organisation.

Reflexivity

The above methodology describes the steps that were followed but reading through both Banister et al. (2011) and the Lyons and Coyle (2016) chapters on writing up qualitative methods in psychology a reflexive account is deemed an important aspect of the write up in order to illustrate how my commitments and assumptions have shaped the analytic process and outcome. I have been involved in several teams over many years including school teams, work teams, educational teams and sports and recreational teams. The sports and recreational teams I have been part of have provided me with companionship and have on the whole been thoroughly enjoyable experiences. Work teams have provided a hierarchy from which to learn the company's processes and systems, and to have a form of back-up and comradeship whilst

undertaking company business. I have also taken part in several educational team projects whilst studying research methods at undergraduate level. I personally did not always enjoy the experiences of educational team work and found I was one of those who tended to keep quiet but did what was required of me in order to achieve both the teams' and the modules', and therefore ultimately my own, goals.

I have also taught for the past five years on research methods courses from all higher education levels from first year undergraduates through to MSc level and have tutored around 60 teams through the processes of a group project. I have mentored groups who have been very cohesive (possibly too cohesive) and those that have imploded. I have watched one team split up into two separate teams mid way through the group process, and another team of five members who ended up working almost entirely separately. This has given me an interest watching the individuals within teams and how they react with each other. This study has enabled me to listen to others' experiences of working in these small educational teams, and to find out what they think of the team process rather than just using my own experiences within teams.

The participants had all been students in a class on which I had taught, and therefore there was inevitably a degree of power imbalance within the relationship between us. However the formal teaching had finished before any interviewing was undertaken, and all the participants were in a post exam period, but before they had received their final marks for the module. None of them therefore had any idea of what their module marks would be but knew that their results were no longer in my control. I believe this made them feel in a more balanced relationship with me than would have been the case either before the end of the module or alternatively after they had received their results.

Four of the interviewees had worked together in a team of six and the process had not been wholly successful. Whilst listening to the students recalling their group work process I was aware that several of them were telling me the same information about how their team, in the research methods projects, had functioned but from their individual viewpoints. It was sometimes hard not to disclose that the same anecdotes had been told to me from another angle, showing them in a different light to the one they may have tried to portray during the interview.

At the time of the interviews all of the interviewees were working on their dissertation projects and were undertaking data collection prior to writing their dissertation, and were, therefore, more sympathetic to my needs as a PhD student rather than my role as their tutor. Some of the participants asked me to reciprocate and take part in their dissertation studies, as a participant, which I gladly did. Others requested some help with the practicalities of their own dissertation from recruiting participants to analysing data. I was happy to help in whatever way that I could.

During the summer following the interviews I also attended some workshops held at the University on aspects of qualitative methods. One of the workshops I attended was on interviewing techniques and, although I managed to get a lot of good and interesting interviews, I am sure that if I had carried out my interviews after, rather than before, this workshop I would have gleaned an increased amount of rich data from using the enhanced skills that were learned through the workshop. The setting for the interviews was not the most conducive for getting people to talk. On the whole the rooms used were small and characterless areas furnished with table and chairs and little else. There is only one room in the university psychology department that allows privacy but has the feeling of a relaxing space, with more comfortable seating and softer lighting, and that unfortunately was not available during the time I was interviewing.

8.1.3: Findings

Theme 1: Team Organisation: - The individual and the group becoming a cohesive whole.

This theme related to the participants' perception of how a disparate group of people become a team. The participants represented people in this context as becoming mutually dependent and they needed to organise themselves into a cohesive whole in order to get the task completed satisfactorily. Team members were seen to come into the team as individuals with their own unique viewpoints and they need some sort of organisational structure that allowed them to bind together as one unit. This was seen to involve sharing the workload to

ensure all of it was achievable in the allocated time in order for the team to be able to drive the task forward to its conclusion. This theme consisted of three subthemes.

Sub-theme 1: Roles in team organisation

The first sub-theme concerned how roles in a team are often connected with status and hierarchy, with a leader role at the top of the status list and jobs being allocated amongst the team members. The majority of the participants spoke about how the roles within a team were decided upon and, in most cases, the roles were chosen on perceived expertise. For example in the following quotations the participants talk about how the jobs were divided up according to the individual's perceived skill sets.

Nazima: "...started I was good at something and the second one was good at something else and we just sort of divided everything based on our skills"

Rima: "... the topic so the, like ok, you are in charge of, kind of like, explaining it to us, kind of giving us a bit of background and someone else was really good at the stats part of it so we were like, ok, so when we are going to analyse data you are going to be there for that and kind of explain or walk us through it, and then someone else was really good in keeping us on track..."

A few participants reported that they took on the easy work early so they were seen to be working for the team but left the harder tasks for others. This subtle form of social loafing allowed individuals to be seen to be working hard for the team but in reality they were cherry picking jobs that they found easy and relying on others to undertake the jobs that were harder. For example one participant stated

Sarah: "...ok. Well I'll do more of the kind of like the donkey work at the beginning and then we will look to *(name omitted)* to analyse it"

Her reference to 'donkey work' suggests that while this may have been physically hard or time consuming work in its own right, if others in the team had noticed her doing it, she could leave the harder, more cerebral work of analysis to others.

In many cases as soon as someone volunteered to do a role it seemed to be agreed upon eagerly by the team mates with little or no thought or process, just relief that they did not have to do that particular task. The fact that someone had once done an ethics form, a relatively straightforward task, seemed to bestow a level of expertise upon that individual, even though any one of them could have performed the task with little difficulty. As Rima says in the following excerpt the fact the ethics form had been completed once before was enough to refer to that person as the expert.

Rima: "Um at the beginning it was allocated as fairly as possible whereby some of the people had come up with the idea were asked to do a bit more, like, of the literature review, to find some more, like, evidence for this idea. Somebody who had done an ethics form already for their dissertation was asked to do the ethics form so we played by each person's strengths"

Working together with others in a team brings its own set of issues with people wanting to work on their own in their own particular style, but they realised they have to be flexible in order to fit the team mould. As one participant reflected

Rachel :....“(I) like to be told what to do and I like to have my own way in how I go about that. I don’t like to be micro managed.”

The majority seemed to have an understanding that the team goal is one in which they must all work towards a united end point and that they do need to have a degree of strategy about their modus operandi for example as Shirley and John said

Shirley: “I don’t really have the choice but to work together as a team”

John:“but you know what you’ve got to do and you’re all on the same page..... And the idea is to win the game overall, but the idea is, you know, to have this formation, goals broken down into sub goals to reach the main goal.”

Several of the participants talked about the hierarchy within the team. There was an expected hierarchy as far as having a leader was concerned, but there was a lot of talk about how the teams separated off into different sub-groups, with certain team members left out of some aspects of the work. Rachel, talking about a work team she belonged to, working as a carer in a respite home, illustrated the positive way in which sub-teams can operate.

Rachel: “There were layers of teams if that makes sense. There was our team on the ground doing all the day-to-day work, then there was the sort of nursing team who took care of the medical work, but we would liaise with them frequently, and then there was the higher level like doctors”

A few people, however, mentioned teams operating within teams particularly with respect to teams that were not functioning very well. This sub-group aspect was not popular but there seemed to be an acceptance amongst the participants that there was often an in-group and an

out-group even within the small team structure. The in-group/ out-group groupings seemed to come mainly from pre-existing friendship groups. This version of social identity theory (Tajfel & Turner, 1986) suggests that even within the inner groupings of the team there are strata of sub-groups in which the individuals have to place themselves and the cohesiveness of the team was based on combining these different factions successfully within the team. The individuals had issues with the divisions that were created as Sophie and George illustrated by admitting feeling left out of the decision making process.

Sophie: “maybe those who were not in the leadership circle kind of felt, you know, ill informed and left out of the bigger decisions, left out of the bigger, the broader understanding”

George: “but I was kept out of the loop a little bit some of the time because I was not a permanent group member within the groups”

or as John implied by running a subgroup and presenting the decision as a *fait accompli* to the rest of the team

John: “She would often either talk to me or I would talk to her and we would do something. It would be like “right yes let’s just do this” and give it to the group and see whatever”

Sharing the work load around all of the team members was an important factor for participants. The feeling of fair distribution of the workload was stressed by many participants, for example

Alice: “We kind of went “I’ll do that, I’ll do that, I’ll do that, it wasn’t really allocated, it was. There wasn’t one sort of person in particular that

was kind of the leader. It was all. Because it was such a small group that it was um. You know we were just as one I think”

Rachel: “making sure that each other helps or equals responsibilities so it’s not too much of a burden”

On the whole this was successfully carried out in the majority of teams but in a few of the teams the workload was unbalanced. In those cases the individuals seemed not to mind unduly which suggests that, although it was preferable to share out the workload, in practice there were times that it was not possible to do so. As one participant said

Rima: “I end up doing more work. But I don’t mind because I am driven to succeed”

When the problems occurred most of the individuals seemed to understand that someone had to step up and take over the role or task, as everyone in the team was responsible for what happened, and that there were usually good reasons why something had not been achieved thus far. There was an understanding that the team members were in it together and if someone could not do something, for whatever reason, then others would have to step in to complete the task for the good of the team. The participants gave a sense that the team was a collaborative, collective unit. For example

George: “like ok if we are all don’t do well that’s on all of us, you know. It’s not just one person that screwed up. We all screwed up and if I can help then I should help.”

Sarah: “I don’t like leaving it to other people. I feel everyone should pull their weight in a team group. Not everyone can”

There were however frustrations expressed by many participants about the other team members insisting their viewpoint should be followed. Many found that rather than express their own views they let others dominate, but having done that there was a feeling of resentment and stress that built up, particularly if the individual felt their own skills were better than the noisier dominant person's skill set. This suggests there were some uncomfortable difficult dynamics between the collective team and the individuals' right to exert influence. This is shown in the following extracts

Emily: "They can't actually take on anybody else's point of view. You know ultimately they believe they're right and I find that really annoying because although I might have strong views on something myself, I still will take other views on board.....whereas this particular person can't do that. And I find that incredibly frustrating and essentially I find it pointless in communicating with her sometimes"

Sophie: "Um sometimes someone might interpret what someone else is saying incorrectly and that means that inter-group conflict, or sometimes it ends up on a more dramatic scale, ruining a friendship or you know something of that sort."

Hala: "Er, sometimes some of the opinions can be really strong where you don't really like. Where you have to go along with them, just, you know, for the sake of keeping it calm, keeping it, like, letting things go along"

The aspect of feeling one's own views have to be dampened down to avoid conflict within the group was an area that was expressed by several participants. They were scared of not carrying out the teams' requirements correctly and to a deadline in case they were judged poorly or caused an upset within the team. As George said

George: “Now they are telling me that this has to be done by then. I am like ok this is my new deadline. I don’t want to let everyone down. Everyone is going to judge me. Everyone is going to say like what a mess I have made”

The participants realised that being part of a team involved changing a group of people from individuals into a collective in order to succeed in the teams’ goals. It was generally felt that the team roles needed to be organised hierarchically, preferably with tasks shared out fairly between the members, and to lay down a method of working that allowed the team to move forward towards its aims whilst still allowing the individual a voice. This leads on to the second sub-theme.

Sub-theme 2: The individual within the team.

It was felt by the participants that the most successful teams are those which have team goals and aspirations but also allow goals for the individuals within the team to be attained. Achieving the team goals is unlikely if the individual cannot realize some personal benefit from being a team member. From a personal point of view the organisation of the individual within the team was discussed and many participants expressed a need for a degree of control within the team to ensure they received the individual outcome they hoped for, as well as the team’s overall objectives. As one participant stated

Nazima: “Because I hate it if my performance is dependent on somebody else”

By taking control, and taking over the task, stress levels were able to be reduced as Sophie said

Sophie: “If I want something to be done. If that’s the case then I usually take it upon myself to complete it at the time, at the pace which would be best for me so I avoid anxiety”

Taking control also allowed them to organise other team members into achieving that individual’s goals whilst avoiding tasks that they themselves were not confident about - again, a method aimed at reducing the stress caused by that task. For example

Nazima: “I like to share parts and I like to do parts I am good at and to trust other people to choose the parts they are good at too”

Nazima: “....that I am trying to shift people into what I want to do”

John: “.....And sometimes I will be like “does anyone else want to give this a go” I can’t do it.”

In most cases, when the team work is engaging, some of the individuals are prepared to work hard and do more than their allocated fair share - as shown in the following example

Rima: “.....Can’t just always wait for every team member to pull their weight because then you suffer a loss, so you have to do your bit as well. I mean sometimes go over your bit”

But several mentioned they are prepared to step back if either the team goal is not important to them personally or they lack the confidence to carry out the task.

Sophie: “Um but in cases when I am not, I don’t feel too strongly on my grasp or understanding of the task then I step back and let others take that role”

This possible disparity in team goal achievement, between those who have invested in the team and those who have not, can cause frustration when work is not completed according to the individual’s needs from the team task. This thereby causes an extra work load, but with the addition of stress and frustration. Sarah and (*name omitted*) had formed a sub-team in their research methods group and were irritated by having to repeat work set for others to complete. For example

Sarah:”so me and (*name omitted*) were working on, um, the sort of questionnaire and getting all that all that on line, and we’d let someone else do the consent form and then we’re like “no that’s not right” so we’d had to go and do that”

The participants on the whole were resigned to team work being just a part of life, especially part of the educational system, and just something to be endured as a means to an end. It seemed not to impinge upon the day to day lives of the individuals who managed to separate any emotion caused by team problems from their relationships outside the classroom setting. As shown in the following example

Ellie: “We would have a little argument about something on the project but then we would leave the classroom and be like “oh like nothing happened” That was it you know”

Seven of the twelve participants seemed to find academic deadlines an issue and when working within teams devised similar methods to reduce stress caused by working with others towards deadlines. They all imposed mini deadlines on themselves in order for them to complete their tasks for the team so that the team goals were attainable. For example

Hala: “....sort of set a plan, a reliable plan that I can follow through. Yup I would start by setting off an outline of what I am supposed to do then give myself smaller deadlines so that I can meet that deadline”

On the whole the individuals appreciated this system even though they knew the deadlines were self-imposed or imposed by the group. They did not seem to mind when team mates imposed extra shorter deadlines on each other as they could see this helped all members of the team including themselves. They did not want to let their team mates down. As George says

George: “because they are giving me a new deadline. Now they are telling me this has to be done by then I am like Ok this is my new deadline. I don’t want to let everyone down”

These mini deadlines helped the individuals who like to work and finish early but also allowed those individuals who like to work right up to a deadline to do so, thereby alleviating stress for both methods of working towards an end point. Again as George said

George: “but I might not work on it today and I might not work on it tomorrow and I might work on it the day before you told me to hand it in but that what I will do, so it will be done by then”

Sub-theme 3: Internal organisation within the team

The teams' communication methods were on the whole made remotely making use of social media. Although the individuals met up at scheduled research methods classes, and were able to discuss matters arising for the group project within that class time, most of the communication between the individuals, within the team involved texting and whatsapp with a few groups using email. Very little communication involved face to face meetings outside of the class room setting. For example

Shirley: “no chance to be together speaking about it. It just gets me “oh what are we going to do now” (laughs). It’s quite difficult to just say “oh shall we do this” and if you’re not together in a meeting, talking personally”

Interviewer: “Physically together?”

Shirley: “Yes physically together it’s not easy and we are not physically together because one wouldn’t be attending a lab class and then. Or it won’t be all of us together”

There was however a distinct feeling that although communication is best when done face-to-face this did not happen that often and it became a problem when communication methods broke down. For example the division in this group was attributed to poor communication between two separate factions, leading to a breakdown between the team members.

George: “and the communication sort of broke down. There was, I don’t know, like I said there was, it was, we had two separate groups basically, talking within themselves trying to elaborate on ideas and discuss different ideas and within these groups it was fine but when it came to the overall group it sort of broke down because

there was a lot of lack of understanding like the ideas weren't transferred that well from one group to the other and I was sort of in-between trying to mediate a little bit"

The team members also realised that they have to fit in with the group in order to achieve the set goals and they could change their behaviours to fit in with the other members of the team. This makes a team more cohesive and thereby makes it easier to achieve the goals set for the team. The cohesiveness of the group is determined by the strength of the bonds joining the individuals. The participants felt that a cohesive team was helped by physical proximity, homogeneity of the individuals, good communication and smaller numbers within the team as seen in these examples.

John: "...Cohese (*sic*) and you are working..... towards one goal"

Hala: ..."I think that they, it happens that I am teamed with people who happen to have the same interests, you know the same perspective, then I will behave the same way that I would whether it is a team or I am working as an individual"

This cohesion can however cause issues such as groupthink (Janis, 1972) when the team become too cohesive and team members can feel coerced into the task demands and the normative team behaviours as Emily explains

Emily: "When I am in a group I am almost just forced along with certain things that have to happen.... he (*the leader*) says this is going to happen and you know, you sort of have to do it"

The organisation within the team is seen by the participants as an important factor in making a cohesive entity and the key to that is seen to be the communication within the team. There also needs to be a good fit with the needs of the team members in order to make a cohesive whole.

This theme shows how the individuals within the team were all aware of the benefits of the team being organised well in order to achieve the set goals. They realised they needed a combination of good organization within the teams in order for the team to function well, but that must include allocating suitable roles to the individual, fulfilling the individual's needs, and good communication between team members. They understood that with others in the team the workload can be reduced and aspects of team work that are complex can be passed over to another team member with expertise in that area. However the view of expertise was sometimes based on fairly flimsy evidence, particularly if it allowed the individuals within the team to avoid a difficult or unpleasant task. Most of the teams imposed mini deadlines on themselves in order to get tasks completed to the satisfaction of all, and some individuals understood that the work load was sometimes not fairly distributed amongst the members. The unsuccessful teams were normally those in which there were sub-groups formed causing difficulties with communication and a lack of cohesion for the members.

Theme 2 : Leadership: Roles and responsibilities

This theme related to the participants' thoughts on leadership, both the role of the leader and the responsibilities that go with the role. Leadership can be defined as the process of an individual organising a group of people in order to achieve a common goal. All of the participants had definite views about leadership and the roles that leaders were expected to undertake, as well as the qualities that were required in order to lead a team successfully. All except Rachel had had some experience of leading teams.

Sub-theme 1: Experiences and expectations of leadership

In terms of what the participants expected from a leader they all talked about similar aspects. They all demanded that the leader should be in control, that the outcome is ultimately the leader's responsibility to achieve, that the leader should oversee the task, even at times to micro-manage the process and that the leader would be knowledgeable and would be there to guide them in the running of the task. As Ellie and Sophie said for example

Ellie: "I like having a leader to show me the ropes sort of thing"

Sophie: "I just feel it is very (re-)assuring to know that someone can guide me if I have any questions. I can directly go to that person and be confident that they know what they are talking about, you know"

Their desire for an overseer suggested a passing over of the responsibility for the team's goals to someone else, and that the leader would be the person who took control over them as individual team members, as well as ensuring the team's goals and aspirations were met. There was an expectation that the leader will take on a disproportionate percentage of the allocated work as the responsibility lies in his or her domain. George and John demonstrate this in the following extracts

George: "when I was eventually the leader I had more control and I could manage things. Micro-manage some might say but I can at least manage and make sure that people do well. Caro (*pseudonym*) for example didn't take kindly to me micro-managing and make sure she was going to score things right but honestly that's more on her because if she had proven to me that she was capable of doing it but by herself I

wouldn't have felt the need to micro-manage her but the ideas like I have a know (*sic*). I know what everyone is doing at one time and I can, whenever things are lagging behind, I can step in and help out and because I, now as leader, it is sort of my responsibility to make sure everything works out well and they do it right. I then have to know everything about what everyone is doing so if someone is doing it wrong, or need help, I can step up and help out in that way and know that the work's been facilitated, it's been done and we can all benefit from it by the end of it"

John: "so we (*John and another team member who took over the leadership when the task was not being done successfully by the rest of the team*) were like "ok" and we took the bits that we thought were less straight forward so we had an idea in our head of what we were doing"

They realised that their role as leader was more important than either their popularity rating or the difficulty of the task and that the leadership role means they have to step in where required in order to complete the task, even if the other team members are not happy with this. Not all the participants were happy with this disparity of the work load as one participant referred to being a leader as a double edged sword of burden and glory.

Shirley: "Personally I feel it is more stressful, though also more exciting, because I feel, like um, you have the burden but you also have the fruit of the labour at the end"

And others just referred to the extra work and responsibility that the leader's role demanded. For example

Nazima: “so whatever goes wrong is also blamed on you”

Emily: “I don’t like the responsibility of being the one to make that ultimate decision”

George: “It’s nice to not always have the full responsibility to the team”

However when the team project was finished, even when the leadership had been a negative experience, the leader expected to get most of the credit for the success of the project. Alice had been the leader of a school committee which had put on a school fair. Although this had been a long and difficult team to manage, the conflicts were forgiven and forgotten after the event as the plaudits were received.

Alice: “It was nice after the event when everyone comes up to you. We actually got so many emails afterwards saying thank you so much. That was really amazing, and that obviously makes you feel really good, but before it was just kind of a bit of a drag having to do it. It was yeah good”

Sub theme 2: The decision to lead and benefits thereof

When deciding whether or not to step up to the leadership role all the participants talked about the confidence that resulted in being able to carry out the role. The majority of them would only volunteer to be team leader if they had the confidence beforehand to be able to achieve the team’s goals. If they were unsure they could manage that then they did not want to take on the role. As Sophie said

Sophie: “Er hmmm, I think it depends on what the task is that you know, we’re being grouped up to accomplish. Um if I feel like I have a good handle on the task, on the topic, then I tend to take more initiative, but if I feel I am not too sure of what’s going on, I tend to step back and let others lead and let others take that initiative.”

Several people mentioned the fact that that they only wanted to lead a team when the team goals were important to their own personal goals as, by taking on the leadership role, they felt they could have more control over their own goals’ requirements , for example

Rima:“I’ve noticed I only like to be led if I don’t care about the task”

Interviewer: “well that’s interesting”

Rima: “Yeah it’s like there is so much to do. I am not interested so if there is no personal investing in this, I won’t have, the outcome is not going to be important to me so yeah you can just tell me what to do and I will do it”

Interviewer: “Ok and do you like to be the leader within a team”

Hala: “Yes (laugh) when it is something that’s important that it reflects on you then yes. If something like a sports team or anything not related to academic sort of work I’m fine. I tend to just sit in the background and things like that er but when it comes to like academic sort of work

something that really matters and it really reflects on you then yes.”

However after the experience of leading a team, all of the participants spoke about how being the leader of a successful team increased their self confidence. For example Sophie said

Sophie: “But in a retrospective view if you are a team leader you feel very competent, you feel very comfortable, and confident in who you are and what you are doing so therefore your self confidence and self esteem increases”

She went on to say...

Sophie: “Yes it made me feel confident in what I was doing and knowing that I um had the capability of leading a team of some members of whom were older than me and you know had higher degrees than me. Or whatever, were more educated than myself, um yeah and I felt very comfortable”

And another participant reiterated the sentiment

Sarah: “but yeah, it makes me feel kind of good about myself as well when you are being relied upon and you’re coming through for everyone. It’s nice”

The main benefit of leading a team was that it puts the individual in control of their own destiny and the majority of participants enjoyed that feeling of control that leadership bestowed upon them. This was mainly because it allowed them autonomy over their personal results and, when the team task was an academic task that would be reflected on them as individuals, that degree of control was considered to be an important benefit. However this

was not a benefit without some dangers as if the team was not successful in its mission then the blame sat firmly at the leader's feet.

As George and Nazima said

George: "When I was eventually the leader I had more control"

Nazima: "so whatever goes wrong is also blamed on you"

This double edged sword kept some of the members from volunteering to take up the leadership role preferring the relative anonymity of the team. As one participant said

George: "It's nice to not always have the full responsibility to the team. You can just hang back and do your part of the job and if you don't do it well I kind of know there's going to be a team leader out there to have to pick up the slack"

In terms of allocation of leadership roles the participants were split into those who actively preferred to lead and those that preferred to take a back seat and be led in a team. Six of them, Ellie, Rima, Shirley, George, John and Nazima, all preferred to lead a team whilst Sophie and Alice like to lead only when they were confident of the task and Sarah liked to lead but when sharing the role with another person so not taking the full responsibility that goes alongside leading a team. Rachel admitted she had never led a team and Emily and Hala liked to be led by a good leader but not by someone who they considered to be a bad leader.

The leadership role is seen as having power. John, describing himself as leader, referred to himself as a sheep herder and the team members as sheep and Sarah referred to herself being happy to be a sheep when led by a good leader. The general view was that the leader was there to guide and control operations. As George said when referring to taking over the leadership role in one difficult situation

George: “As a leader, it is sort of my responsibility to make sure that everything works out well and they do it right. I then have to know everything about what everyone is doing..... In which case I am happy to do it. I like it. It gives me control. I can supervise things and I can manage things.”

When the leadership is working well there is an appreciation from the team members of the leader and an understanding that the leader is working for the common aim. For example

Rima: “when you’re told what to do by somebody who is in a position of authority then you know you do it as best as you can because it’s for your benefit..... Just you’re appreciative that that person is leading you in the right direction.”

However when leadership is perceived by the participants as poor there is a degree of frustration that other team members could do a better job. Here Rima and Shirley, talking about a leader’s lack of task-related competence, are both obviously frustrated but fail to intervene or complain as the leader still commanded some degree of outward respect.

Rima: “I just sit there listening and I feel like there is a voice in my head like continuously correcting them”

Shirley: “Oh I remember a job when your boss is not very competent about what he’s doing. You get a bit like “this is annoying”. You don’t want to be led by someone when you think you know more”

Others were able to step up and try and depose the failing leader. For example

John: “so I am very bad with things like that and that’s when I just think it’s poor leadership. Then I struggle to work. I think I struggle to work under a poor leader..... I can’t work. I just will not. I won’t respond. I won’t do, or if I do I will do it half arsed or I will try and become leader”

Leadership is seen by the participants as a double edged sword with many advantages to being leader but some disadvantages that could also create a problem for the individual. When a leader is working well for the team their role is seen to lead and guide the team members to the conclusion of the task and a good leader manages the team by overseeing all aspects of the tasks. They are expected to take a larger proportion of the workload but gain the advantages of the recognition of a job when done well. What is demonstrated in this theme is that the participants were careful in their decisions to lead a group realising that it involves an additional workload and potential blame if things go wrong. They appear to make their decision based mainly on the individual benefits they will receive rather than on an altruistic desire to help others.

Theme 3: Social support from team membership

The most positive aspect mentioned by the participants of team work was that the team provided camaraderie and support for the individuals within the teams. When asked what was the aspect of team work that they liked most the majority of the participants referred to the sociability of the team as well as the feeling that one was not alone with a task, that there were others to share in the trials and tribulations that were ahead. As Ellie and John illustrated

Ellie: “I don’t know, just having, just knowing that I have someone else going through it with me, so I guess that camaraderie”

John: “Oh actually being part of a team yeah um, the camaraderie, er, the support, the fact that you’ve always sort of got. I don’t particularly like being on my own so I, you’ve got, you create quite a lot of friends, depending on the situation you’ve often create quite strong bonds”

The team allowed the participants to get support when they were unsure of a certain aspect of the task, from others who were equally involved and interested in the task. Many of the participants referred to this support network as illustrated in the following quotations

Rachel: “It was nice coming together to talk about what we had found”

Sophie: “I can go directly to that person and be confident that they know what you are talking about you know. I would ask them questions”

Shirley: “if there are many people many heads are better than one so if you are geared towards the same goal then it’s exciting”

Shirley and Rachel also mentioned that one can benefit from others’ experiences and knowledge and learn alternative methods of working:

Shirley: “There are some kind of reinforcements that you can get from seeing others working or other people or colleagues working and accomplish certain goal. You are more motivated or you know it is easier for you to get things done”

Rachel: “and then it is nice when someone has more experience than you or has more knowledge and they are able to sort of disseminate that information it is easier especially if you are unsure of what you are doing you can always ask for a second opinion or a third opinion”

And Emily referred to the pleasure at being able to celebrate in achievement with others rather than just knowing as an individual that the job was well done

Emily: “well I like if something really good happens and you can like celebrate it together and feel a sense of achievement together”

This social aspect of being part of a team is thought to reinforce the social bonds between its members albeit sometimes temporarily. In several cases the project teams were made up of individuals who were friends before the teams were formed, and in all the cases the friendships did not alter for better or for worse as a result of being in the team for a ten week period.

Hala: “we all kind of got together because we were friends and we wanted to work together”

However not all of the team members were friends before the ten week educational project teams were picked, and in all these cases friendships were not formed as a result of working together. In all the cases the team members did what was required in order to complete the task but did not invest in long term friendships. Alice and Sophie said

Alice: “we were friends before so yeah but the fourth person in the group no. I mean I saw her today at the exam for the first time since but there wasn’t much interaction”

Sophie: “I haven’t really communicated with them outside of the, once the group project was submitted. We haven’t really talked much. I have talked to, still keep in contact, I still consider myself close friends with one of the people, er, one of the members but the other three I haven’t spoken to, not so much.”

However in other teams outside of the educational team project there were deeper friendships that were generated, and generated quite fast, as a result of being together in the team. This was probably as the teams mentioned outside of the educational teams were often based on a shared interest, such as singing or football, work or family and that shared hobby, or connection was what enabled the cohesion within the team, as Ellie, when talking about her Acapella singing group, explained

Ellie: “We are all different, like nationalities, so it is very diverse in that sense. Also we have known each other for about a month and are so close knit already.....because we share the same passion for something we are just like “you like the same things as I do. We are really good friends now”

The educational projects were a short term task that had to be finished to achieve the goal of completing the module and therefore friendship was not a necessary addition whereas, for example, the Acapella group was a free choice from the individuals concerned within the team and so they were seen as more of an in-group with shared values and desires. George talked about this difference when talking about the project group team members

George: “there’s not the same sort of cohesive bond that you have with the friends you’ve made organically and stuff like. They are nice people, nice enough.”

The team that all the participants were specifically asked about was the educational group project teams that all the participants had taken part in the recent weeks before the interviews took place. In this particular year group there was only one research methods class running at the university with 30 people attending and the students were able to choose who they teamed up with. The only stipulation was that there should be no fewer than three people in a team and no more than six. During the interviews they were all asked how they had chosen who would be in the team with them. Very few chose practical work related reasons such as their team mates’ perceived intelligence or being good at aspects required to achieve good results but most chose their team mates based on the friendships that had formed during the lab classes over the course of the first semester. For example

Ellie: “Um basically we knew each other and we spent a lot of time together so we figured might just as well work on this one together”

Shirley: “Yes um basically close proximity or whoever I sit closest to at the time and get to chat with.”

Sophie: “the people on the course that we were more comfortable with, so it was random selection, just whoever we felt comfortable with at that time”

Only one person, Nazima, thought strategically about her team members in terms of what she wanted to get out of the team project separating it from her social ties.

Nazima: “To be honest in the beginning I didn’t want to work with the other two because they were friends but I thought that we had different approaches to um this work because I really wanted to be efficient”

Being part of a team for an educational task pushes people into a social group in which they have to co-operate with one another in order to achieve the desired results. The team allows the members to use each others’ strengths to learn different perspectives and to enjoy the camaraderie that will evolve from working towards the same goal. However there were different outcomes for the social ties from within a short temporary educational team setup than from a team chosen from a desire to follow a hobby or sport which seemed to engender much deeper social ties. Team social behaviour therefore seems to depend on whether there are emotional connections in place within the team and its activities as opposed to a team that is set up just to fulfil a set agenda.

Theme 4: Rewards from being a team member

The participants perceived there were several diverse rewards to be gained by being part of a team. These included the praise received after a job well done (particularly when leading that team), different ideas on ways to achieve the teams’ goals, feedback on performance, increased motivation, increased pride and increased confidence. Several of the participants talked about the benefits to themselves of the learning of another perspective. The participants were able to utilise other peoples’ skills and knowledge to further their own abilities. For example

Alice: “you actually learn that there are different routes to achieve the same goal. Sometimes they are even better than the one you thought originally”

Hala: “It definitely allows you to get other ideas and their opinions that you will never otherwise considered.... listening to the other idea kind of brings a new perspective which helps a lot when you are working on something like that”

Shirley: “many heads are better than one so if you are geared towards the same goal then it’s exciting. You have got different ideas about how you’re going to reach that goal”

This allowed the individuals to try out new techniques and ideas under the safety net and support of the team. Rachel acknowledged this was not always an easy process

Rachel: “We didn’t realise it would be so much work but it is worth it in the end”

However, having other people, within the team, following the same path allowed the individual team members to become more motivated and confident in their own abilities. As seen in the following examples the teams allow its members to try out ideas and receive confirmation that they are doing something correctly.

Alice: “If you bounce ideas off people you sort of get the... you sort of get to feel you are going in the right direction and I suppose if you’re working on your own, you, like, hope that you’re going in the right direction”

Sophie: “I think it gives you that sort of motivation that you need to get something done. When you see it, other people pursuing the same goal or similar goals as you, you are more motivated”

This back up from the team engenders a feeling of confidence within the individuals and nearly all the participants talked about an increase in their confidence levels as a result of being with others who are sharing the experience with them. This was particularly true when they were the leader in a team and all had gone well with the task. Some referred to the feeling of satisfaction for example and pride in recognition of a job done well

Sarah: "it is satisfying knowing that you're kind of like getting the work done....it makes me feel kind of like good about myself as well when you are being relied upon and you're coming through for everyone. It's nice"

Ellie: "and I obviously had it approved by everyone else but it was kind of nice to be kind of recognised like "oh she's the leader and she did it"

There is also a satisfaction in the realisation that a team member knows more than the others and gets picked as leader thereby increasing the confidence in that individual, as Sarah and Sophie both showed

Sarah: "If you're more knowledgeable sometimes it is, you automatically take up the leadership level, where you become more confident"

Sophie: "It definitely made me feel confident in what I was doing and knowing that I, um, had the capability of leading a team of, some members of which were older than me and, you know, had higher degrees than me, or whatever, were better educated than myself"

Confidence is increased in two different ways. Firstly it is increased as a result of socially comparing oneself to the rest of the team and secondly as a result of the knowledge that the team members were on the same side as the participants and would be available to offer support and security. Several participants talked about the support that gave them this extra confidence.

George: "I am much more confident (*in a team*) because there is that diffusion of responsibility in a way, and there's also, you feel more secure. You know if you've got a team backing you up you feel like everyone's going to be on your side"

John: "I feel more secure in a team. I feel way more secure. I feel quite insecure on my own, um, I don't like necessarily on my own, being left alone"

Ellie: "it kind of gives me confidence. It goes back to knowing that there is someone going through the same thing, that we are working for certain goals or. I feel more confident if I have someone with me."

The support received was an extremely important aspect of being in a team and most of the participants referred to it often as a network for sorting out areas of not understanding something. The individuals would go to their fellow team mates for help rather than someone higher up the social scale, such as a lecturer or a boss, partly because it is more convenient and partly because one would be less exposed. For example

Sophie: "if you're not sure of something you can easily go to the next person, ask and get confirmation or get clarification on how to do a task, rather than you seeking out help elsewhere.....the help is accessible in that moment"

Rachel: “It is easier especially if you are unsure of what you’re doing you can always ask for a second opinion or a third opinion”

In one of the teams this support was sadly lacking and the participant felt very let down by several of his team mates. George spoke about the feeling that he had not been supported by his team mates.

George: “I wanted to sit back on this one and let (*name omitted*) take the reins but he didn’t and the ball was dropped and then chaos ensued”

He later went on to say

George: “It felt like she was going behind my back, behind everybody’s back.....you know the end result though. I don’t think anyone did well”

Nazima, a very motivated student, also had issues with her team. She realised that she could not rely on her team to achieve their goals at her high standard. She got upset that they did not seem to appreciate the work she put in when they were not putting in the same effort.

Nazima: “we did not start anything which was based on different reasons. First of all I am put into a group of people I didn’t know at all and these girls they don’t come that often to university so they are not available. They don’t have the same...they don’t put time aside for the effort”

She could not understand why when she did extra they were not pleased and she did not see that perhaps it was her forthright approach that was causing problems within the team

Nazima: “And they were not happy about it either which I didn’t understand like ‘this is a very good paper, you should be happy that I did the work’ “but it just showed me I cannot rely on this group”

Although at the end of the process they had a successful result and Nazima achieved her goal with a positive end result and she along with the majority of participants admitted to having on the whole enjoyed the educational team process

Nazima: “and then we were actually one of the groups who finished early so then I was pleased”

There were several rewards perceived as a result of being part of a team by most of the participants. These were mainly due to the advantages received from the sharing of the various experiences. The act of having others experiencing similar issues, both successful and unsuccessful, encouraged people that they were on the correct path to their goals and confidence levels were on the whole raised as a result of being part of the team.

Theme 5: Negative aspects of team membership

The participants found some aspects of team work caused problems for themselves and these negative aspects were discussed by all of them when asked about aspects of teamwork they did not enjoy. The participants talked about two particular aspects that caused frustration amongst them all; social loafing and procrastination. Some of the participants admitted that they themselves procrastinated and found it hard to get started on projects. For example here Sarah openly admitted to delaying starting work.

Sarah: “I just faff. That is the only word to describe what I do. I faff a lot”

But Sarah also admits to delaying starting work on an individual task sometimes although in her case being part of a team tended to reduce her procrastination as she was aware she had others relying on her input

Sarah: “If I am on my own I might be like “oh I can just have a lazy day today” and then you know, kind of procrastinate”

However there is equally a sense of frustration caused by others within the team who, by procrastinating can stop someone else getting on with the task in hand. As Rachel says

Rachel: “I don’t like to procrastinate though I know some people do. So I like to get things done early but sometimes you can’t do that in a team”

When asked what she found annoying about team work Rima admitted getting annoyed when other people did not perform on time

Rima: “When people don’t do what they are supposed to do by the supposed time, the allocated time”

This annoyance stems from the lack of autonomy that is forced on the team members as they are required to rely on others who may not have the same goals as they themselves. The individual within the team may have the time and inclination to carry on with a task but are held up waiting for others whose schedule runs on a different dimension.

The one aspect that every participant without fail referred to was the frustration caused by other team members who were lazy and did not fulfil their commitment to completing, to a high level, the task in hand. Sarah refers to this when talking about her team for the Psychology group project

Sarah: “There was one person who we weren’t sure was fully committed just because she didn’t turn up a lot and it was hard to communicate with her..... There were four of us. The three we would work together and allow, the other person would come in whenever she could really, because she’d seem quite busy. Um, which it did bother us at the beginning, but then we thought what the point is. Why let it affect us. So we just carried on.”

There was a similar attitude about the need to carry on in spite of a recalcitrant team member from Rima when talking about dealing with a perceived lazy team mate.

Rima: “You can’t always wait for every team member to pull their weight because then you suffer a loss so you have to do your bit as well. I mean sometimes go over your bit.”

As this illustrates the apparently idle person benefits in that someone in the team will take over their tasks and complete them leaving them to get the glory without the input. However the people who take over the task, although they have an extra work load are able to take back the power to run the task in their own way. This aspect of free riding ⁷ was something that several of the participants admitted to doing when working in a team, by realising that

⁷ Free riding occurs when some individuals in a team reduce their contribution or performance if they believe that others in the team will take up the slack.

their workload can be reduced by another team mate picking up the slack they have created. Sarah and George both admitted leaving work to others within the team

Sarah: “There has been times where I have kind of like felt like “oh well, let the boss take over, you know, she can kind of start doing, managing whatever, and then I have just kind of like sat back.”

George: “when we would, when we would go to do the work, we’d never do any of the work. No one wanted to do the actual work. We were all hoping I guess someone else would do it and take the reins.”

There is an understanding within the participants that there is a shared and collective responsibility towards the team tasks however when others social loaf the frustration grows in the team members as Emily said

Emily: “If I feel that people are not sort of doing their equal amount I find that really frustrating and annoying”

There does seem to be, however, a disconnect between when an individual social loafs and does not pull their weight and expects others (usually the leader) to take up the slack and that same individual’s frustration when someone else within the team does not pull their weight and causes them annoyance and frustration and possibly extra work. None of the participants acknowledged that their own actions could be irritating to others although all were quick to think of aspects of other team members behaviours that were irritating to themselves.

Another source of annoyance with team mates occurred when one member’s standards and timings were at a different level to another. For example

George: “If you say you are going to do something by a certain time then you have to do that and I don’t care what the extenuating circumstances are because you said it was going to be done by then. It then falls on me to pick up your work, and I honestly, given how much free time we had, I don’t feel anyone has a valid excuse”

Sarah: “And then it was kind of the last week when we were left for the discussion and results so it was kind of like I felt I had been hindered a little bit”

Emotions can be heightened when working with others in a team and many of the participants talked about how their emotions could be affected by other team members. Some felt they were being judged and that they may be found lacking in some way. Rachel talked about this when discussing being a leader in a particular team in which she was not particularly confident in her role

Rachel: “I was, I think, afraid of them finding out”

She went on to say

Rachel: “Yeah, I didn’t feel confident but I would pretend to be confident in order to sort of, that people didn’t really question my ability. That was the main thing. I didn’t want them to think I couldn’t do the job”

This fear was reiterated by Sarah who was fearful of peer judgement

Sarah: “There’s times when being put into new situations if I am part of a team I feel a little bit more wary, a little bit more self conscious. I feel like people are watching me and judging me”

In both these examples the performance of the individual is subject to the evaluations from others often evoking the feelings of 'imposter syndrome'⁸ as shown in the example from Rachel above.

Anxiety also came from the feeling that others, not themselves, were in control of their destiny. This perception of lack of control was mentioned by several participants not only because they were unable to work in the way they preferred but also because they compared themselves against others or were reliant on others to do something which affected their own ability to carry out a task. For example

Ellie: "I would say that it makes me a bit like, I guess, anxious in the sense that I'm so attached to my ways that I am like "I have time, like I know myself" like I guess I work better under pressure than, I know, I know it is easier to work piece by piece but I don't. I can't do that"

Rachel: "You don't really understand it does lower your confidence because you're comparing yourself with others"

Alice: "I think, yes, if someone doesn't get back to me or if someone is running late and I get really agitated"

Nazima and Hala also mentioned difficulties when referring to a team in which they worked and where the other team members seemed to have differing goals which led to emotional discomfort.

Nazima: " (I) had a couple of times that I was working in a team and I just felt that they were going south and I was going north"

⁸ A term coined by Clance and Imes (1978): Usually noticed by high achievers who disregard their successes and believe they will be found out to be a fraud.

Hala: “I just didn’t feel they were, their priorities were like focussed on the competition and it felt uncomfortable”

The main negative issues arising from team work stems from a lack of autonomy and individual control. If other team members are seen either not to pull their weight with the work load, or they work at a different pace or style than themselves, then anxiety and frustration creep in that the individual’s goals will not be met at a standard that they would like to achieve. This can turn into a resentment and cause either the team to stop functioning as all give up or alternatively that someone has to take on an additional work load. These are illustrated in the following examples

Rachel: “We couldn’t resolve the problem which was mostly my attitude um but in the end I quit the job....but I didn’t believe in what we were doing and it really came out clearly in my behaviour (laugh)”

Sarah: “there has been times where I have kind of like felt like oh well let the boss take over you know she can kind of start doing, managing whatever and then I have just kind of like sat back”

Where being part of a team can add a lot of benefits to the individual such as spreading the workload amongst many thereby removing some of the pressures off the individual team members there are inevitably some aspects that do not make the task easier to complete. When working as a team one has to be aware of others’ needs and desires and to take into account different aspects of personality and methods of working. One also has to rely on the other team members doing the work they have agreed to do in a timely manner so that the whole teams’ requirements can be met by the set deadline. This inevitably causes some areas of disquiet amongst the team members.

8.1.4: Discussion

Five main themes were found to be of interest within the data set that gave some indication of how people experienced teamwork: organisation, leadership, social support, rewards and negative aspects.

The first theme found was the importance of how the team organised itself, both for the team as a whole and for the individuals within the team. The participants in this study all understood the need for internal organisation, within the team, in order to set up and run the team successfully and they accepted that the roles the individuals played within the team had to be established in a manner fair to all members. In order for a group of individuals to become a team they have to be able to collaborate together on a common task and they have to be inter-dependent which involves co-operation between the individuals in order to achieve the set tasks successfully. The team has to become cohesive so that those individuals within a group are motivated to remain within the team (Wendt, Euwema & Van Emmerik, 2009). This takes time as trust in one's team mates develops through regular interaction during which individuals learn to feel comfortable with the other members of the team (Holton, 2001). This is aided by organising the team structure into roles based largely on perceived experience of the individuals within the group. The organisation of the team will, by necessity, be dependent to some degree on the team task requirements but the needs of the individual are vital, closely tied in with the goals of the team itself. The individuals within the team need to see a benefit to themselves from the outcome of the teams' goals or they fail to put in to the team the energy that is required in order to ensure its success.

The second theme showed that having the correct person leading a team is important for the team success. Various theories of leadership have been posited, including the trait theories dating back to Galton (1869) which suggested that leaders are born and that there is a genetic link to a variety of personality characteristics such as intelligence, conscientiousness and self efficacy that are found in all leaders. Later theories of leadership included situational theories which stated that leaders can be effective in one domain but not necessarily in another and therefore it is not the trait that is important in leadership but more the situation (Vecchio, 1987). Contingency theories were a synthesis of the trait theories with the situational theories and functional theories and suggested that the leader needs to do whatever is

required to aid the group's needs. The participants in this study veered towards the latter versions of leadership theory. They generally see the leadership role as one in which the leader holds the responsibility of both success and failure in their domain. They are expected to have better knowledge and to do extra work if required whilst other team members can sit back to a greater degree. However the leader can also reap rewards from a job that is successfully carried out. The majority of respondents enjoyed the leadership role and believed it added to their confidence levels.

Theme three indicated that the social support received by the team members was seen as an important aspect of team work, especially that of camaraderie. Hüffmeier and Hertel (2011a) introduced the model of social support within teams that suggests that team members' affective (such as social encouragement, trust, sympathy, reassurance and appreciation of behaviours) and task related support (such as giving information, advice or assistance) increase process gains in team work whereby the social support adds more likelihood of success than the individuals would get on their own. They suggested this is because the affective support increases the individuals' motivation and the task support received increases coordination within teams. This was shown in Hüffmeier and Hertel (2011b) study looking at swimmers in the 2008 Olympics in which swimmers who were positioned early in relay races performed at similar speeds to their individual times but those team members who swam later in the relays increased their speeds from their individual times. This research showed that a team's net effort was significantly higher than the combined effort of the individuals. In this study the participants felt that in the project team friendships were not necessary as the task only lasted a short duration (8-10 weeks) but they did feel they were able to learn different methods of working from other team members but in longer lasting teams the friendships acquired were very important.

Themes four and five showed the pros and the cons of being members of a team. Rewards incurred included a feeling of being connected and having others to help and support which improved the confidence levels of the individuals. However Buckenmyer (2000) suggested that university students often do not enjoy team work. When asked for the reasons why students mentioned ten main factors including that educational teams are not cohesive, that the levels to be attained are different for each member of the team (some are happy to gain a C grade where others want an A grade), some people 'free load' on the back of others,

and that resolving conflict can be hard. All of these issues were raised by the participants in this study confirming Buckenmyer's (2000) views. The negative aspects tended to revolve around social loafing and free riding in which members of the group shirk their duties and benefit from the work of the other group members. Dommeyer (2007) reviewed the literature on social loafing and found that social loafing appears to be a common complaint amongst students working in group projects. The other main area of discontent caused by team membership was the feeling that one was being constantly evaluated by the other members of the team and that one would be found lacking in some way. This form of 'imposter syndrome' first reported by Clance and Imes (1978) is common amongst high achievers and is a feeling of being incompetent and deceiving others about one's ability. It can lead to anxiety and lowered self esteem. Initially imposter syndrome was seen as a female prevalent issue but latterly it has been shown in several studies that this is not the case and that no gender differences have been found in several studies using both college students, professors and successful business leaders (Harvey, 1981; Bussotti, 1990; Langford, 1990; Topping, 1983; Dingman, 1987; as cited in Langford & Clance, 1993).

Students often have teamwork embedded in to their courses whilst studying in higher education and the experience can be improved by understanding what the student requires from the activity as well as what is required as a learning practice. The student needs to understand how to achieve the team's goals alongside achieving their own goals and the team experience is worsened by other team mates' lack of commitment or involvement in the outcome. The students who attended the interviews understood the need for teamwork to be incorporated in their course but felt that it was a "double edged sword" with positive advantages of spreading the workload, companionship, social support and knowledge sharing pitted against the downsides of team members who fail to "pull their weight" and increase conflict. Deciding on who becomes the leader, a role required to drive the task forward, forces individuals to step up and take on the role with its implication of extra work and extra glory or to hide amongst the pack within the team and accept the lessening of control on how the team is managed and operates. There are many positive and negative issues when working with others in teams but it is a fact of modern life that team work is an important transferable skill and one of which many employers require students to have experience. On the whole the

participants in this study enjoyed the experience and overall saw the benefits of having taken part in group/team activities.

8.2: Exploratory Categorical Study: Attitudes about Team Work by Individuals with Differing Future and Present Fatalistic Time Perspective Factors.

8.2.1: Introduction

The previous studies have shown there was a positive relationship with the team performance and the mean Future factor and a negative relationship with team performance and the Present Fatalistic factor when educational teams work together for a sufficiently long period of one academic year. In shorter educational team studies when teams worked together for part of one semester during the academic year a negative relationship was found with team performance and the Present Fatalism factor. Having interviewed 12 participants who had all taken part in the medium duration study I decided to see if there were any categorical differences in attitudes towards team work dependent on these time perspective factors.

The original plan was to carry out a content analysis on the semi-structured interviews to see if there were differences in the beliefs and attitudes of those team members who scored high or low in the Present Fatalistic time perspective factor and the Future time perspective factor. However unfortunately one of the stated rules of carrying out a content analysis is that an 'a priori' design, that is conceived beforehand, should be utilised (Neuendorf, 2002). This did not occur in this case as the semi-structured interviews were designed with the thematic analysis in mind and not a content analysis.

It was therefore decided that a simple exploratory categorical study would be carried out examining what the participants had talked about in their interviews. The semi-structured interview transcripts can be analysed as categorical data by coding the content into whether or not a particular topic was discussed by the participant. Using these codings from the interviews allowed me to investigate whether any differences could be identified between participants with high or low scores in the two time perspective factors that have previously been found to affect an educational team's performance. The attitudes to be examined include what type of team the participant would identify when discussing teams, whether they enjoyed teamwork in an academic setting, and whether they preferred to lead a team or be led by another team member. It was intended that, with these general questions on teamwork, differences between those that score high or low in the two factors will show up differing viewpoints relating to these behavioural traits.

According to Zimbardo and Boyd (2008) individuals who are high in the Future factor are more conscientious, have more energy, are more concerned with future consequences, show more ego control, are more reward dependent, and have a higher self esteem than those with lower scores (Dunkel & Weber, 2010). Therefore it is expected that those high in the Future factor would not particularly enjoy team work, would prefer to lead a team and would mention teams more likely to be work related. This would support the common notion of individuals who are very Future oriented who would prefer to be in charge of their own destiny, thereby having the control to be able to achieve their planned goals. Those with high Present Fatalism are less conscientious, show less concern for future consequences, are less creative, have less ego control, less self esteem and are more shy than those who score lower (Zimbardo & Boyd, 2008; Dunkel & Weber, 2010). The hypotheses are that all these traits would make the high scoring Present Fatalistic individual prefer to be part of a team as it takes some pressure off them as individuals to achieve their goals. However it is hypothesised that they would prefer not to lead a team as that would put the burden back on them with the added weight of the rest of the team members' expectations.

Further exploration to be investigated on attitudinal differences between high and low Future and Present Fatalism scoring individuals include the social benefits of

being part of a team such as the support received from others, a possible increase or decrease of confidence levels as a result of being part of a team, and the effects of procrastinatory behaviour of both the individual and the other team members. It is hypothesised that those scoring high in the Future factor would be more annoyed by procrastinatory behaviour of others in the team but would be less likely to admit being a procrastinator themselves. High scoring Present Fatalistic individuals would be more likely to procrastinate but receive more confidence as a result of being part of a team than when working as an individual (Dias-Morales, Ferrari & Cohen 2008).

8.2.2: Method:

8.2.2.1: Design:

A quantitative, categorical, design was used. The nominal dependent variables were aspects of teams that the participant mentioned in the semi-structured interviews and the independent variables are the binary categories of high and low scores of the Present Fatalism factor and the Future factor.

8.2.2.2: Participants:

The 12 participants in this study were the same participants as those who had taken part in the thematic analysis (Chapter 8.1). They were aged between 22 and 41 years with a mean age of 27.42 (SD=5.32) years; ten of them were female and two were male. For this study the two participants scoring on the mean for the Future score (3.54) were added to the low scorers in order to make two discrete groups; those that scored on the mean score or below and those that scored above the mean. The mean Future score of 3.54 had been calculated from the score of the 99 participants who had taken part in the experimental study (Chapter 7). In this study the mean Future score of this subset of participants was 3.69 (SD=.58) and so those two participants were categorized into the low Future factor scorers.

Table 8.2: Description of participant by number, gender, age (mean, SD; range) in years, scores for Present Fatalism and Future factors (mean, SD; range).

PARTICIPANTS	Number	Gender F/M	Mean Age (SD) years	Age range years	Present Fatalist score mean(SD)	Present Fatalist Range	Future mean score (SD)	Future range
All	12	10/2	27.42 (5.32)	22-41	2.39 (.33)	1.44-3.33	3.69 (.58)	2.38-4.54
PRESENT FATALIST								
High scoring	5	3/2	24.40 (2.07)	22-27	2.93 (.33)	2.56-3.33	-	-
Low scoring	7	7/0	29.56 (6.73)	24-41	2.00 (.34)	1.44-2.33	-	-
FUTURE								
High Future scoring	7	6/1	28.00 (6.73)	22-41	-	-	4.05 (.30)	3.69-4.54
Low Future scoring	5	4/1	26.60 (2.88)	23-30			3.17 (.48)	2.38-3.54

Table 8.2 shows the number of participants, their gender, their mean age, the age range and the mean of the Present Fatalist and the Future scores for all the twelve participants. They have been split by high and low scoring on the two time perspective variables under investigation.

8.2.2.3: Materials

The materials used in this study were the typed transcripts from the semi-structured interviews as used in Chapter 8 for the thematic analysis for the twelve participants (Appendix AA). A sheet with the descriptive analysis instructions (Appendix CC), as well as a plain template sheet (Appendix DD) for the individual coder to write down the participant number and line number of any references to the areas of interest, were also given to the participants.

8.2.2.4: Procedure:

The analysis unit was taken from the spoken word from the semi-structured interviews used previously for the thematic analysis. The analysis template was devised from several of the questions that had been asked of the participants during the interviews. A list of the possible areas of interest were itemised. Each of these had a further list of possible categorical answers that had been given by the twelve participants. (Appendix CC).The categorical answers were all mutually exclusive for each area of interest so that no answer could be placed in more than one category. For some there was a category "other" for any answers that would not fit comfortably into the categories chosen. This list was piloted using one participant's semi-structured interview and an independent coder to ensure that the categories were clearly separated and defined.

I was the first coder (coding 1). To code the text I systematically read through all of the interviews line-by-line, and noted on the template sheet if the topic in each area of interest had been referred to by the participants. This was annotated by participant number and line number on the template sheet. For example if participant 3 said they liked to lead a team on line 237 of the transcript, 3(237) was written on the analysis

template form by the coder. This was repeated one month later (coding 2), on a second rating template sheet, looking again at all the themes and all the interviews in the data set. This was in order both to check reliability and to perform an intra-coder analysis on the data. A second independent coder (coding 3) was recruited to do the same a month later in order to get an inter-coder analysis so that further reliability checks could be completed. All three template sheets were compared to check the reliability of the analysis using Cohen's Kappa statistical analysis.

According to Mc Hugh (2012) it is a sensible approach to have both an intra- and an inter-coder reliability analysis, particularly when the discriminations between categories are subtle as in this case. If a variable only has two possible easily distinguishable states then reliability will likely be high, but where coders are required to make finer distinctions reliability is harder to obtain. Cohen's Kappa is a statistical analysis that looks at the reliability between two coders taking into account the agreement that may occur through chance. Kappa ranges from -1 - +1 where 0 shows no agreement between coders and +1 shows perfect agreement between coders. Mayring (2014) suggested that in qualitative research a perfect agreement between analysts can rarely be reached as there is an element of subjectivity. A minus statistic is unusual but not inconceivable and shows an agreement less than that by chance (Mc Hugh, 2012). Cohen's kappa is used when there are two coders where other statistical analyses can be used where there are more than two coders (Fleiss Kappa, for three or more coders, and Krippendorff's Alpha used for multiple coders and multiple possible codings). Cohen's kappa is deemed however to be a reasonably robust statistic, albeit not without its detractors mainly relating to the perceived strength of the statistic. The Cohen's kappa results are reported in the results section by each variable.

Cohen's kappa statistics were carried out for each area of interest between an intra-coder (codings 1 and 2 carried out one month apart by the same coder) and an inter-coding statistic between coding 1 and 3 and coding 2 and 3. According to McHugh (2012) interpretation of Cohen's kappa should be interpreted for the social sciences with a value of above .80 as strong, between .60-.79 as moderate and between .40-.59 as weak. Where agreement between the three codings was poor the two coders looked again at the interviews together and discussed the statements that they had coded

differently. In each case agreement was easily reached as the differences were either an occasional missed statement by one of the coders or alternatively a small re-interpretation of the statement in the light of the discussion. An example of this is participant 5 on line 64 said

“Well at school I suppose I was involved in drama and things”.

This was picked up by one coder as being part of a sport/recreational team but not by the other.

Similarly participant 126 on line 30 said

“Well like I have, would an acapella group be a team”.

This was also deemed to be a mention of a sport/recreational team by coder 1 but was omitted by the second coder. After joint discussion both examples were placed in the category of sport/recreational/hobby. A similar procedure took place with all the discrepancies that were noted and this led to a full agreement of each of the discrepancies shown up by the two coders.

As only 12 participants were interviewed and there were four separate time perspectives under review (high Future, low Future, high Present Fatalist, low Present Fatalist) the numbers representing each perspective ‘type’ were small which means that there is a greater likelihood of making a Type 2 error (in which the hypothesis is rejected when it is in fact true). However, according to Siegel and Castellan (1988) the data can be analysed using non-parametric statistics to show differences or associations between different sample groups in spite of numbers with groupings being small. Siegel and Castellan (1988) reported several examples of non-parametric statistics being used on samples with very small numbers, for example Mann (1981) who analysed 21 cases of published accounts of suicide; Solomon and Coles (1953) who used five trained rats and four untrained rats in their study; Barthol and Ku (1953) with 18 participants; and Castellan and Jenkins (n.d.) with 12 participants split into three groups of three members, five members and four members (as cited in Siegel & Castellan, 1988).

8.2.3: Results

1. Type of team mentioned.

Initially Cohen's Kappa statistics showed perfect agreement between the coders for work and family teams, ($\kappa=1.00, p=.001$), strong agreement for education teams between intra-coders ($\kappa=.83, p=.003$), and weak for inter 1 ($\kappa=.53, p=.04$), and moderate for inter 2 ($\kappa=.67, p=.01$), and strong agreement for sport/recreational teams (intra) ($\kappa=.82, p=.004$), and weak agreement for inter1 ($\kappa=.53, p=.04$), and moderate agreement for inter 2 ($\kappa=.68, p=.01$)⁹. After discussion agreement was reached.

Table 8.3 shows the frequency and percentage of the participants of the type of team they mentioned to the interviewer when asked, with no interviewer prompting, split by the score on the Present Fatalism and the Future factor categories.

Table 8.3: Frequency (%) of number of participants who mentioned a category of team, that the participants had been involved with, split by time perspective category.

Team Type		High Present Fatalist (N=5)	Low Present Fatalist (N=7)	High Future (N=7)	Low Future (N=5)
Work	Yes	0	7 (100%)	4 (57.1%)	3(60%)
	No	5 (100%)	0	3(42.9%)	2(40%)
Sport	Yes	5 (100%)	3 (42.9%)	5(71.4%)	3(60%)
	No	0	4(57.1%)	2(28.6%)	2(40%)
Family	Yes	0	2 (28.6%)	2(28.6%)	0
	No	5(100%)	5(71.4%)	5(71.4%)	5(100%)
Education	Yes	2 (40%)	4(57.1%)	3 (42.9%)	3(60%)
	No	3(60%)	3(42.9%)	4(42.9%)	2(40%)

None of the high Present Fatalist scorers mentioned work or family teams but all five of them mentioned sports teams. The low Present Fatalistic scorers all mentioned work teams. The Future factor scorers were split between what type of teams they mentioned

⁹ Intra = between coder 1 first coding and second coding, inter 1= between first coder first coding and second coder and inter 2 between first coder second rating and second coder

in the interviews. Only two of the 12 participants, both of whom scored low in Present Fatalist factor and high in Future factor, mentioned family teams. A Fisher's exact test for 2 (Present Fatalist score: High/Low) x 2 (Topic: Mentioned/Not mentioned) tables was carried out and also for 2 (Future score: high/Low) x 2 (Topic: Mentioned/Not mentioned) and none showed a significant difference, except for the Present Fatalist score and work, χ^2 (df=1, N=12) = 12.00, $p=.001$. All the other types of team category were not significant ($p>.05$) although the Fishers exact test was approaching significance for the Present Fatalism factor and mentioning sports teams ($p=.08$).

2. Do you like to be part of a team?

Cohen's Kappa initially showed perfect agreement between the intra-coder for whether the participants liked to be in a team, ($\kappa=1.00$, $p=.001$), but some discrepancy between the two coders with weak agreement ($\kappa=.47$, $p=.09$). These discrepancies were discussed between the two coders until agreement was reached. The discrepancies were because when asked whether they liked to be part of a team the participants occasionally contradicted themselves, sometimes saying yes they did like to be in a team, but then later in the interview saying they did not like to be part of a team or vice versa. Where this occurred the participants were subsequently placed in the 'sometimes they liked to be part of a team' category.

Table 8.4 shows the frequency and percentage of the participants who mentioned that they liked being in a team, did not like being in a team or sometimes liked being part of a team split by the Present Fatalistic and the Future factor category.

Table 8.4: *Frequency (%) of the number of participants who mentioned whether or not they liked to be in a team split by time perspective factor category.*

Team Preference		Present Fatalist High (N=5)	Present Fatalist Low (N=7)	Future (N=7)	High	Future (N=5)	Low
Like	Yes	3 (60%)	1 (14.3%)	1 (14.3%)	3 (60%)		
	No	2 (40%)	6 (85.7%)	6 (85.7%)	2 (40%)		
Do not like	Yes	1 (20%)	0	1 (14.3%)	0		
	No	4 (80%)	7 (100%)	6 (85.7%)	5 (100%)		
Sometimes	Yes	1 (20%)	4 (57.1%)	4 (57.1%)	1 (20%)		
	No	4 (80%)	3 (42.9%)	3 (42.9%)	4 (80%)		

Only one person, who scored high in both factors, admitted to not liking team work, but the low Present Fatalistic scorers were more likely to be more wary about admitting they liked team work saying they sometimes liked it dependent on the circumstances. Only one person with high scores in Present Fatalism said they sometimes liked team work with three out of the five saying they did enjoy it. Only one high scoring Future participant admitted liking team work with four of them saying sometimes they liked teamwork whereas the low Future scorers were more definite about liking teamwork with only one participant saying that they sometimes liked it.

3. How does being in a team affect your confidence?

Cohen’s Kappa showed initially there was modest intra-coder agreement for whether the participants’ confidence was affected by being part of a team ($\kappa=.66$, $p=.02$), and the same between coding 1 and coding 3 but a complete agreement between coding 2 and coding 3 ($\kappa=.1.00$, $p=.001$). These discrepancies were easily resolved between the two coders.

Table 8.5 shows the frequency of replies about confidence levels increasing or decreasing as part of being allied to a team, split by the two time perspective factor categories.

Table 8.5: *Participants who mentioned that confidence levels changed as a result of being part of a team split by time perspective category.*

CONFIDENCE	Present Fatalist High (N=5)	Present Fatalist Low (N=7)	Future (N=7)	High	Future (N=5)	Low
Increases	4 (80%)	1 (14.3%)	3 (42.9%)		2(40%)	
Decreases	0	0	0		0	
Varies	1 (20%)	4 (57.1%)	3 (42.9%)		1 (20%)	
Other	0	2 (28.6%)	1 (14.3%)		2 (40%)	

None of the participants felt that being part of a team decreased their confidence, but those with high Present Fatalist scores were more likely to say their

confidence increased as a result of being part of a team. Those with a low score in the Present Fatalist factor felt their confidence levels were more dependent on circumstances, except for one low scorer who mentioned that being part of a team increased the levels of confidence. No noticeable differences were seen by those high or low in the Future factor.

4. What kind of social support was perceived as a benefit for being part of a team?

As shown in table 8.6 there was not full agreement between the coders in this section. This was, in most cases where agreement was low, caused by omitting one mention of the category by one of the coders. When the two coders looked together at the examples they found full agreement was easily achieved, and the relevant examples were added in to the list of those who had mentioned the topic. For example in ‘feeling valued’, which had the lowest agreement between the coders, coder 1 (coding 1) noticed that participants 5, 12, 124 and 126 had mentioned this, coder 1 (coding 2) noted 6, 12 and 126 and coder 2 (coding 3) noted 5, 6, 12, 13, 124 and 126. After discussion 5, 6, 12, 124 and 126 were agreed upon for analysis. It was agreed that participant 13 (line 286) was talking about poor leadership rather than the benefit of feeling valued.

Table 8.6: *Cohen’s kappa for social support categories.*

	Intra-coder (coding 1 and 2)	Inter-coder (coding1/coding 3)	Inter- coder (coding2/coding3)
Camaraderie	.82**	.64*	.80**
Knowledge	.83**	.50	.66*
Joint achievement	.56	.64*	.64*
Feeling valued	.50	.51	.27
Feeling more secure	.64*	.64*	1.00**
Sharing work load	1.00**	.82**	.82**
Increased motivation	.80**	.80**	1.00**
Decreased motivation	1.00**	1.00**	1.00**

*=p<.05, **=p<.01

As shown in table 8.7, 75% of all the participants mentioned camaraderie and 58% of all participants mentioned knowledge sharing as important aspects of social support of being part of a team. Sharing of knowledge was seen as a benefit by 57% of the low Present Fatalistic scorers and 60% of the high Present Fatalist factor scorers and 43% of the low Present Fatalist scorers enjoyed the fact that others appreciated and shared in their triumphs together which was not mentioned by any of the high scorers. Similarly four out of the seven low Present Fatalist scorers mentioned the benefit of feeling valued by others whereas only one out of the five high scorers mentioned that. Four out of seven of the low Present Fatalist scorers recognised that team work shared out the individual work load, which was only recognised by one of the high Present Fatalist scorers (20%). Feeling secure as part of a team was mentioned by 40% of the high Present Fatalist scorers, but only by 29% of the low Present Fatalist scorers. The high scoring Future participants thought that sharing knowledge and the joint achievements that occurred were important aspects of teamwork, whereas fewer low scorers in the Future factor mentioned these aspects. Feeling secure, by being part of a team, seemed less important to the high scoring Future participants than those low scorers in the Future factor.

Table 8.7: *Participants mention of type of social support that is received from being a team member split by time perspective factor category.*

SOCIAL SUPPORT		Present Fatalist High (N=5)	Present Fatalist Low (N=7)	Future (N=7)	High (N=5)	Future Low (N=5)
Camaraderie	Yes	5 (100%)	4 (57.1%)	6 (85.7%)	3 (60%)	
	No	0	3 (42.9%)	1 (14.3%)	2 (40%)	
Knowledge (sharing)	Yes	3 (60%)	4 (57.1%)	6 (85.7%)	1 (20%)	
	No	2 (40%)	3 (42.9%)	1 (14.3%)	4 (80%)	
Joint achievement	Yes	5 (100%)	3 (42.9%)	7 (100%)	3 (60%)	
	No	0	4 (57.1%)	0	2 (40%)	
Feeling valued by others	Yes	1 (20%)	4 (57.1%)	2 (28.6%)	3 (60%)	
	No	4 (80%)	3 (42.9%)	5 (71.4%)	2 (40%)	
Feeling secure as part of team	Yes	2 (40%)	2 (28.6%)	1 (14.3%)	3 (60%)	
	No	3 (60%)	5 (71.4%)	6 (85.7%)	2 (40%)	
Sharing load to lessen Individual load	Yes	1 (20%)	4 (57.1%)	3 (42.9%)	2 (40%)	
	No	4 (80%)	3 (42.9%)	4 (57.1%)	3 (60%)	

None of the categories of social support differed significantly by the Present Fatalism score (high/Low) or the Future score (High/ Low) using Fishers exact test ($p > .05$) except joint achievement and Future (High/Low) which showed a χ^2 ($df=1, N=12$) = 5.60, $p = .045$.

5. Procrastination or social loafing

The Cohen's kappa, in the initial analysis, showed strong agreement between the intra-coder coding (coding 1 and coding 2) when the participants talked about their own procrastination or social loafing behaviours ($\kappa = .82, p = .004$), and the same between coding 1 and coding 3 ($\kappa = .82, p = .004$). There was perfect agreement between the coding 2 and the rating for coding 3 ($\kappa = 1.00, p = .001$). There was more discrepancy between the coders when looking at whether the participants mentioned social loafing or procrastination behaviours from other team members. Weak Intra-coder agreement ($\kappa = 0.50, p = .046$) and inter coder with coding 1 first rating and coding 3 ($\kappa = .29, p = .16$), and inter coding 2 and coding 3 ($\kappa = .33, p = .22$) show low agreement rates. These poor intra and inter coder agreement levels were studied by both coders together to establish where the discrepancies came from. Coding 1 found participants 12, 14, 19 and 124, coding 2 found participants 3, 12, 13, 14, 19, and 124 and coding 3 found participants 3, 5, 6, 12, 14, 19, 124 and 126 to have mentioned the topic. On revisiting all the examples together it was agreed that participant 3, 5, 6, 12, 14, 19 and 124 all did mention procrastination or social loafing referring to others but 13 and 126 were omitted. (Participant 13 was talking about things not getting done but not about delaying or putting things off and 126 mentioned if people slacked others would ask them if things had been done but it was not about procrastinatory behaviours per se).

Table 8.8 shows the frequencies of the participants who mentioned procrastinatory behaviours split by the time perspective factor. The majority of the participants mentioned that they procrastinated during team tasks (9 out of the 12) and many felt other team members did so too.

As seen in table 8.8 low Present Fatalism scorers were more noticing of social loafing from others as six out of the seven low scorers of Present Fatalism mentioned it. Only one out of five of the high Present Fatalist scorers commented on others lack of effort. The high scoring Present Fatalist participants however recognised it in themselves

with five out of five mentioning that they had a tendency to procrastinate sometimes, whereas only four out of seven low Present Fatalist scorers mentioned that they tended to procrastinate or social loaf. Five out of the seven high scoring Future participants mentioned their own procrastination behaviours, but only three out of the seven referred to others doing the same whereas four out of the five low scoring Future participants referred to both self and others slacking.

Table 8.8: *Participants mention of Social Loafing/ Procrastination split by time perspective factor category.*

Procrastination		Present Fatalist (N=5)	High Present Fatalist (N=7)	Low Future (N=7)	High Future (N=5)	Low
Self	Yes	5 (100%)	4(57.1%)	5(71.4%)	4 (80%)	
	No	0	3 (42.9%)	2(28.6%)	1(20%)	
Others	Yes	1(20%)	6 (85.7%)	3(42.9%)	4 (80%)	
	No	4 (80%)	1 (14.3%)	4 (57.1%)	1(20%)	

None of the categories of procrastination for either self or others differed significantly by the Present Fatalism score (High/Low) or the Future score (High/ Low) using Fishers exact test ($p>.05$) except for the Present Fatalism (High/Low) and others' procrastination (Yes/No) χ^2 (DF=1, N=12) = 5.18, $p=.045$.

8.2.4: Discussion

Some subtle differences in team behaviours and attitudes were noticed as a result of this exploratory categorical study of the semi-structured interviews in relation to the individual's score on the Present Fatalist and the Future factors. The Fishers exact test for 2x2 tables is a useful test for analyzing nominal data with small sample sizes. It is used when the scores all fall into one or other of two mutually exclusive categories. It is one of the most powerful one-tailed tests for this type of dichotomous, nominal data

(Siegel & Castellan, 1988). However, only a couple of the categories were significantly different using a 2 x 2 Fishers exact test.

There are many differing situations in which placing people into teams, in order to achieve a goal, is carried out. All require collaboration between the team members in order to obtain a successful outcome. The different types of teams, however, require different attributes from the members: work teams, which need to achieve a company's goals, are often long-lasting, therefore these require committed individuals to be team members. There is likely to be a degree of movement within the team, with personnel coming into or leaving the team throughout the long term process; project teams which are set up to attain a specific short-term goal; these often disband on achievement of that goal and they tend to be stable with regards to personnel; and sports or recreational teams which tend to be set up for the individuals' enjoyment and carried out in the team members' leisure time.

Asking the participants about the teams they had been involved in showed up the differences in the types of teams that the participants initially thought of. Those who scored low on the Present Fatalistic factor were more likely to mention work teams than recreational and sports teams. Those who scored high in Present Fatalism mentioned sports or recreational teams but failed to mention work teams. Two participants mentioned family teams. They both scored low in Present Fatalism but high in the Future factor. Zajenkowski, Stolarski, Maciantowicz, Malesza and Witowska (2016) found that people with a Present Fatalistic orientation tended to assess their own intelligence lower than that of others. This lack of confidence and negative view of their own abilities suggests that high Present Fatalistic scorers are likely to dismiss work teams when asked about team involvement, and instead concentrate more on the less academic or intelligence led sports teams, than those low on the Present Fatalistic scale as has been seen in this study. Unexpectedly there was little difference seen between those high or low in the Future factor and whether they mentioned a specific type of team within the interview as it was expected that those high in Future would have been more aware of work teams than sports/recreational teams. Many of the high Future scorers mentioned all the categories of teams during their interviews so the frequency differences did not

register, whereas the people high in Present Fatalistic factor only mentioned specific sport or educational teams.

Those who scored low in the Present Fatalism factor were more aware of the benefits of sharing the workload than those who had scored high in the Present Fatalism factor. This fits with previous research (Zimbardo & Boyd, 2009) as the low scorers on Present Fatalism realise that their own work ethic, and that of others, will directly affect their success, and therefore that of the team. They realise that the sharing of the workload will enable their own individual goals to be met, as well as those of their team. The Present Fatalism scale on the questionnaire includes such statements as “Often luck pays off better than hard work” which encapsulates the fact that those high in this factor would trust to luck rather than see the benefit that could be gained from their team mates’ knowledge or expertise.

According to Zimbardo and Boyd (2009) the high scoring Future person behaves according to anticipated abstract beliefs of future consequences. They are concerned about how their behaviour in the present will impact on their future results. They thrive on predictability, and therefore team work can be problematic to them as their results are partly dependent on others. However those high in Future were much more likely to mention the benefit of knowledge sharing amongst team members than low Future scorers. The fact that they were able to learn new approaches was seen as a personal benefit to being a team member. Similarly the benefit of joint achievement was mentioned by all high Future scorers but only three out of the five low scorers. The high Future scorer is more likely to take pleasure in having achieved the set goals.

This study also found that those scoring low on the Present Fatalistic factor and low on the Future factor were more likely to mention procrastination in others than those scoring high in the factors. Procrastination and social loafing behaviours were mentioned by nine of the twelve participants about their own shortcomings. The three who did not mention this were two high Future scorers and one low Future scorer and all three of them were low scorers of the Present Fatalism factor. Those with low scores on Present Fatalism tend to believe that it is their own efforts that alter the outcome of a task, rather than the outcome being outside of their control. This could explain why

social loafing and workload sharing are more important annoyances for low Present Fatalist scorers than for those who score higher on the Present Fatalism factor. People with low scores on Present Fatalism appear to notice when others do or do not pull their weight in a task, and it seems to be an important feature to them that their team members all work together. Procrastination has been found to correlate positively with the Present Fatalism factor and negatively with the Future factor (Ferrari & Diaz-Morales 2007, Diaz-Morales et al., 2008; Digdon & Howell 2008). The low scoring Present Fatalist factor participants seem not to attribute procrastinatory behaviours to themselves. High scoring Present Fatalistic people tend to have lower conscientiousness, higher levels of depression and higher levels of emotional instability all of which predict procrastination (Dewitte & Schouwenburg, 2002). As Future oriented people make decisions based on cost versus benefit reasoning they would likely think of procrastination as a problem in achieving their long term goals, and therefore seem to be more self critical. Future oriented people tend to carefully plan their activities which is the opposite of procrastinators (Milgram & Tenne, 2000), so it appears they are highly critical of their own perceived shortcomings. Procrastination was also found to be an aspect of team performance that was seen to be a negative. This supports the findings by Gupta, Hershey and Gaur (2012) who suggested that procrastination was predicted by Zimbardo's time perspective, with the Future factor being negatively associated with procrastination and the Present Fatalistic factor being positively related. This is supported by this exploratory study.

Most of the high scorers in Present Fatalism said their confidence improved by being part of a team, although the low Present Fatalist scorers were more circumspect saying that it depended on the individual team circumstances. High Present Fatalistic scorers who believe that circumstances beyond their control affect their success appear to receive confidence from other people experiencing the same situation, whereas the lower Present Fatalistic scorers appear to wait to judge if the team would aid their confidence levels and their outcome requirements.

Nine of the twelve participants mentioned camaraderie as an important social support within teams. All five of the high scoring Present Fatalism participants and six of the seven high scoring Future participants mentioned it. Those that did not mention

camaraderie as a benefit were all low scorers in Present Fatalism. The low Present Fatalistic scoring participants were more likely to mention the benefits of knowledge sharing, achievement and feeling valued by others, whereas the high scorers were more likely to mention feeling secure as a result of being part of a team. This again reinforces that those who score high in the Present Fatalistic factor like to rely on others who can help to affect their outcomes, whereas the low Present Fatalistic scorers recognise the ability to learn from others knowledge in order to be able to proactively improve their outcome.

There were some issues to bear in mind with this exploratory study. Some of the initial coding varied to a point where there was only a weak agreement between the coders, however when the coders together looked at the items that differed they were easily able to resolve their differences. There were only twelve participants in the data set and all were a homogeneous group who were studying at a Master's level of education. With such a small data set the power of the results can be compromised. Statistical power is defined as the probability of accepting the null hypothesis when it is in fact false and should be rejected. Kitchen (2009) reported that using non-parametric statistics, when the data does not follow the assumptions for using parametric statistics, was a sensible route to minimise the possible loss of power by using parametric analysis in those circumstances.

This group consisted of few individuals with a very low Future score. The mean Future score of the twelve participants was higher than the mean score from the 99 participants who had taken part in the earlier experimental study and so two of those with low scores had the same Future score as the mean score in the previous experiment. In order to study for a postgraduate degree there is a greater likelihood of students being Future orientated. Moreas and Lens (1991) showed a positive correlation between student motivation and Future time perspective and Lens and Decrynaere (1991) found that many vocational students have short future time perspectives. De Volder and Lens (1982) noted that students with higher grade points ascribed higher valence to goals in the distant time zones than immediate or near future goals. It was harder therefore to establish if there were differing behavioural patterns between high

and low Future orientated individuals and further research could examine this with a wider range of Future scoring participants.

This study does indicate that there are some fundamental attitude differences between those with differing time perspectives towards team work. These include those that like being part of a team are more likely to be high scorers on the Present Fatalism factor, who also are more likely to have their confidence levels increased as a result of being part of a team. Low scorers of the Present Fatalist factor are more likely to mention work and family teams than high scorers who are more likely to think of sports/recreational teams. Those who scored high on the Future factor appreciate being able to share in joint achievements, enjoy the benefit of knowledge sharing and were more likely to mention the camaraderie of being part of a team than low Future scoring participants. Procrastinatory behaviours about themselves were mentioned more by high scoring Present Fatalist participants than low scoring Present Fatalist participants, whereas low Future scorers talked about the procrastination of others more than the high Future factor scorers.

It is likely that the correlation between the time perspective factors and the success of teams is partly due to these differences in approach to team membership. There were more noticeable differences seen with high and low Present Fatalism scores and aspects of team work than those noticed between high and low Future scores. All of the participants in this study had recently taken part in the medium-duration team study but not the long-duration study. This supports the previous studies that showed the Present Fatalism factor correlated with team success in mid-duration teams as well as long duration teams whereas the Future factor only significantly correlated with long duration teams.

As this was an exploratory study further aspects of team preferences should be investigated. There is a noticeable difference in approach to team work from those high or low in the two time perspective factors that have been shown to make a difference in performance achievement. As Present Fatalism is the first of the time perspective factors to affect a team in its life cycle with the effects being noticed in the mid-duration teams before the Future effects are noticed in longer duration teams. Further questions

to establish how these differences manifest themselves in behavioural terms when working in teams should be asked of high and low scoring Present Fatalistic participants to see if their behaviours are the cause of issues with others in the team.

CHAPTER 9

9.1: Concluding Discussion.

Steiner (1972) observed that “research on group composition always requires a simplification of unmanageable complexities” (p107) and this aspect still holds true today. It is a hard task to build a story on one specific behavioural trait that can explain a team’s performance variations. Many different characteristics of the team members combine to affect the way that the team works, and thereby its performance. The complexities surrounding team performance come not only from such behavioural traits but also from the tasks and goals of the team, the type of team under scrutiny, how the team performance is judged, how the team composition is operationalized and whether the team is from the “real world” or contrived within a laboratory.

Considerable research over the years has been conducted showing that different team demographics can affect a team’s performance. The review of how people work in teams in Chapter 2 demonstrated the effects of many of these demographic characteristics that can alter the success of team work, not only in sports teams and the workplace, but also in educational situations. Time perspective is a cognitive process that separates human experience into past, present and future thereby enabling individuals to interpret their physical and social worlds. This therefore has a powerful effect on human behaviour. However to date little research has been carried out on the effect of how people behave according to their time perspectives within a team setting.

Chapter 3 reviewed the research that is pertinent to behaviours relevant to different time perspectives. People have individual preferences to work to differing circadian rhythms, deadlines, and pacing styles. Their beliefs about the past, the present and the future also affect their behavioural patterns. These differences can all cause conflicts within a team setting. There has been much research on how these time behaviours affect the individual but little research into how people with differing time

behaviours work together in teams, and whether those differences in the individuals' behaviours can affect the team from reaching its goals.

Harrison, Price, Gavin and Florey (2002) noticed that team diversity affected social integration, which in turn affected social cohesion, and so could alter the overall team performance. Harrison, Price and Bell (1998) showed that one influence on how both surface level and deep level demographics affected team work is time. They examined the impact of demographic surface level and deep level attitudinal diversity, in two separate work groups, finding that the effects of surface level diversity weakened over time, but that deep level diversity effects strengthened the effects over time. Time perspective is a deep level demographic that requires time before its effects are noted, and this thesis extends the knowledge in this area by showing the effect of time on the personality traits of the time perspective factors in a team setting.

Initially three studies were carried out to examine the effects of time perspective on team performance, using separate teams that worked together for three different time periods: teams that worked together for a year as reported in Chapter 4; those that worked together for an eight week period as reported in Chapter 5; and finally those that came together to carry out a quick team task that lasted under an hour as reported in Chapter 6. This was followed by an experimental study, reported in chapter 7, to test the relational findings in an experimental manner. In the long-duration study, with teams working together for one academic year, there was a significant positive relationship between the teams' Future factor and a significant negative relationship with the Present Fatalistic factor and their performance. In the shorter mid-duration study, with the teams working together for part of one semester of the academic year, only the mean scores on the Present Fatalistic factor showed a significant negative relationship with the performance of the team. Teams that worked together on a very short duration project of just 30 - 45 minutes, showed no effect of time perspective factors on how quickly they completed the set tasks. This indicated that the deep level demographic of time perspective takes time to manifest itself to others, and affect working styles, and therefore ultimately affect the team's performance.

The methodology of taking a mean, minimum, maximum or variance of several team members' assessment scores has been carried out in many educational group studies (e.g. Harrison, Price, Gavin & Florey, 2002; Janicik & Bartel, 2003; Jehn & Mannix, 2001) and this was used in all three of the studies. This methodology allowed me to establish if the constituent members of the team, in terms of an individual with a very high or very low score of a particular time perspective factor or a very mixed team with a wide variation of time perspective scores between the team members, could affect the performance in any of the three time periods that were tested. In the longer-duration team a homogeneous team, in terms of the Future factor, and the team member with the lowest Future score that was higher than that in other teams, improved the team's performance. If all the team members have similar ideas, regarding working in the immediate time scale for a future gain, then there is less scope for conflict within the team dynamics, thereby improving the outcome. In both the long-duration and the medium-duration team there was a negative relationship between the mean and, in the medium duration study the maximum score, in the Present Fatalistic factor and the teams' performance. The effect of the Present Fatalistic factor score is more evident than that of the Future factor score and appears sooner in the team's life cycle. One very negative person, scoring high in Present Fatalism leaving everything up to destiny, affected the team outcome more noticeably, in the medium-duration study, than the effect of those who work in a focused manner towards the future.

One of the main differences between the three initial studies was that the task type differed in each study. The long-duration study task was to run a business from a start-up position for a year. This included producing a product, marketing it, engaging with social media, net-working, financing and selling. Over the course of one academic year a wide variety of responsibilities and requirements were encountered by the team members, utilising a number of skills, some learnt within the course, others bought in from previous experiences. The medium-duration study task involved running a psychology experiment which included researching the topic, devising an experiment, producing any required materials and finally executing the experiment prior to analysing and writing up for assessment. Although these studies required different skills from the students, both involved many different processes and learning opportunities. The skills

that were included in the short-duration team tasks were two logic-based tasks, a physical task that required a degree of accuracy and dexterity, and a task that required attention to detail. The short-duration team tasks were however, of necessity, relatively simple tasks, as the study required the tasks to be achievable by the participants within a very short time period. These task differences in all three studies were inevitable, bearing in mind that the tasks for both the long-duration and the medium-duration teams were set by different faculties within the university, and they were based on the different course requirements for learning specific required skills for the students. The teams in the longer and medium duration studies were “real world” working teams that were not contrived for the purpose of this study which in itself adds ecological validity to the nature of the study. There were no teams from other departments within the university that matched these working together for a very short time period, so the short-duration teams were contrived specifically for this study and were “lab-based”. However the short-duration teams were able to communicate together freely throughout the time they were working together, and they had the same autonomy that the longer durations teams were able to have in deciding how to manage the required tasks to achieve the team’s goals.

Operationalizing team performance also differed between the three studies. For both the long-duration and the medium-duration teams an assessed piece of coursework, marked by the relevant course tutor, was used as the means of measuring team achievement. For the long-duration study, the coursework reflecting on the process was written up for assessment at the end of the academic year, alongside a presentation to business experts. For the medium-duration task coursework was submitted in the form of a laboratory report. Where the long-duration coursework was a reflective piece of writing and judged accordingly, the medium-duration coursework was judged as an academic stylised essay. It was not practical to make the short-duration task a marked piece of academic work, and so the time taken to complete a variety of tasks was used as the criterion variable in that case. It is not unusual in other studies to use either time taken to complete a task or series of tasks, or to successfully fulfil some criteria within a specific length of time. These techniques are often used as a dependent or criterion variable in psychological studies (e.g. Bowler, Woehr, Rentsch &

Bowler, 2010; Kichuk & Wiesner, 1997; Kramer, Bhawe, & Johnson, 2014) and is an effective method of distinguishing between different groups' abilities. Although not comparable to an individual written report, averaged between all the participants within a team, the time taken to complete the task does show which teams were more efficient in working together in order to complete the four set tasks, thereby displaying which teams showed superior performance ability. The two longer duration studies' methods of assessment are, however, wholly comparable to each other, even though they were marked under differing criteria relevant to the different courses.

The individuals who made up the teams in the initial three studies were also, to some extent, different to each other. The participants in the long-duration study and the medium-duration study were all postgraduates on a one year course (albeit a few taking two years as part-time students) whereas the participants in the short-duration study and the experimental study were a mixture of postgraduate students and first and second year undergraduate students. This was expedient as there were an insufficient number of postgraduate participants registered at the university who were eligible to participate in these studies through the 'SONA' research participation system. The postgraduates in the long-duration study had a higher percentage of students from overseas, whose first language was not English. This particular postgraduate course generally attracted more overseas students to enrol through the university. The overseas students did, however, have to have English at an acceptable level (International English language test system, IELTS, of 6.5 or equivalent) in order to register with the university. This discrepancy in English skills was more noticeable in the standard of the written reports and so the measure of success was not wholly comparable between the long and the medium-duration studies, as they were marked under differing standards, by different course tutors and with differing course criteria. However in spite of the long-duration and the medium-duration studies not being comparable to each other the results do show that the Future (for long-duration teams) and the Present Fatalism factors (for both long-duration and medium-duration teams) do have an association with relevant performance in the tasks.

In both the long-duration and the medium-duration teams the tasks were real scenarios thereby providing an insight into how real teams, rather than laboratory

contrived teams, operate. The team members were able to choose who to work with and what to work on at any given moment. This meant that the participants were particularly invested in their team in order to achieve their own goals of passing the relevant academic module. This therefore gives these teams ecological validity in the “real world”. The short-duration team task and the experimental team tasks were laboratory based, with teams specifically formed in order to participate. The short-duration teams however were each able to operate as a fully functioning self-directed team, allowing how they worked together to complete the required tasks to be fully under the team’s decision. The experimental study participants were also able to be independent in deciding which psychology studies the team members should take part in. The experimental teams, however, were less invested in the task as there were no consequences for the team, or its individual members, if they did not achieve the team’s goals, and therefore the participants were less committed to the success of the task.

As reported in Chapter 7 trying to confirm the findings of the long and the medium duration team projects with an experimental study was a challenge. A task was chosen that was relatively simple to carry out, that could last for a sufficient length of time to allow the time perspective traits to be noticeable in terms of working practice, and that the participants would retain an interest in completing over a sufficiently long time, whilst the study was operational. Unfortunately the participants stopped communicating with each other and the teams broke down. There was not enough of a team cohesiveness to encourage the participants, who did not know each other beforehand, and had little incentive to work together as a team. The incentives to carry on with the task were insufficient to persuade the majority of them to continue beyond their own personal goal of ‘SONA’ credit collection, and therefore none of the teams finished the task satisfactorily. Virtual teams are increasingly often used in the workplace and have a unique set of issues ranging round ease of communication that traditional teams do not have. Aubert and Kelsey (2003) showed that virtual teams that performed poorly tended to have communication problems that remained unresolved whereas the successful virtual teams in their study devised strategies to overcome their communication issues. An interview that was carried out with some of the participants showed that the majority of the problems came because the team was a virtual team

with poor communication and no incentive to improve it. The problems that were encountered show some of the challenges when studying team behaviours in a contrived laboratory situation and future research should consider the team incentives by making them intra-team rather than individual incentives, and improve cohesion by engendering a team identity and allowing team members to meet in person before starting the required task.

Team work is increasingly used in university teaching settings and is a learnt skill that is requested by graduate employers. It is, however, not always used effectively. Hansen (2006) suggested that students are often given team assignments to carry out, but the students are rarely given sufficient guidance in team functioning. Although students are themselves aware of the importance of team working skills, a survey of thirty four American business school students by Hansen (2006) found that team working skills were taught only in certain classes, and that only in some classes were the projects meaningful and relevant to their course. Rarely were the students asked to evaluate their own worth to the team. Hansen (2006) carried out an analysis of the benefits and problems associated with group projects, finding the problems included: poor grading and inadequate rewards; social loafing and free riding; behavioural and attitude problems; lack of leadership; and stifling of creativity. Many of these issues were raised in the thematic analysis carried out in this study with the psychology postgraduate students in their semi-structured interviews as reported in Chapter 8. These issues appear to be a cross-discipline problem with team work in higher education (findings both from Hansen, 2006 with business students and this study with psychology students). If team work is to be a regular occurrence in modules then instruction in team working skills, information about the life cycle of a team with all its separate phases and an understanding of different personal time perspective behaviours should be an essential part of the course.

The thematic analysis, reported in Chapter 8.1, established what students felt generally about team work. The participants all accepted team work in education as just a part of the educational process. Five themes were extracted from the data set. The organisational aspect of how the team was run showed up the importance of the fairness of work distribution, co-operation and cohesiveness to the students. Although it

was accepted that the team leader would have to work harder than the rest of the team, this was a role that the participants said that they relished and actively sought out. They were all highly motivated students so this was not an unexpected finding. This was not noticed in their behaviour, however, as none of the ten students, who took part in both the semi-structured interview and the experimental study, took charge in a leadership role within the experimental study. It is important to actively encourage a team member to volunteer to take the leadership role when setting up teams as this role is key to improving the performance and motivation of the team.

The importance of the social support received as a result of working alongside others was extremely valuable to the participants. The help and understanding received as a result of working alongside others was seen as a benefit to all, as not only were they supported through tasks that they felt were above their own capabilities, but also were shown differing ways of behaving or achieving. This support was lacking in the experimental study as the participants did not get to know their fellow team members, which added to the challenges within the study.

There were some differences noted however by those who scored high or low with the Present Fatalistic and the Future factors as reported in Chapter 8.2. Those that scored high in Present Fatalism were more likely to have their confidence improved by being part of a team and were more likely to be aware that they had a tendency to procrastinate. Low Present Fatalistic scorers were more likely to mention procrastinatory behaviours from other team members. This procrastinatory and low confidence behaviour ties in with the results that team success is negatively related to the Present Fatalistic factor scores of the team, whereby people who believe that they procrastinate and lack confidence are likely to hold back on completing team tasks, and thereby achieving team goals. The results with the high and low Future factor were less clear cut as the participants' scores on the factor and answers were less diverse in this factor than those of the Present Fatalistic factor.

What was not studied in this thesis was the level of difference of time perspective factors within the team. The time perspective factors were all studied as separate individual factors rather than researching the effects of time perspectives that

differed between the five factors (i.e. those that had unbalanced or balanced numbers of high and low team members' scores within the five factors). The main reason for this omission was the small numbers of teams recruited; adding the complexity of studying those with the five time perspectives that differed within the team would require far larger numbers of teams to compare. Future research should look at how differing time perspective factors within a team can affect the success potential. It may be that a successful team needs people with a specific balance of time behaviours whereby the high Future scoring members will push the team towards its goals but those with a Past perspective will be able to understand how the past has affected the team and those with a Present perspective can produce the daily requirements.

Further research should also be undertaken on time perspective differences between small numbers of people working together in teams in a variety of different situations other than educational teams. In many cases two people have to work together to achieve a goal. To identify whether having a compatible time perspective between the individuals within a small unit (be it family or organisational as well as educational) could enhance the results would ensure that those working together who were not time perspective compatible could be aware of the issues and react in a more thoughtful and less combative manner.

9.2: Implications

Although there has been much research on individual behaviour with time perspective there has been little research into how people with differing time perspective traits work together in teams. This research adds to the overall knowledge of time perspective behaviours by showing that the personality trait of two of the time perspective factors, Future and Present Fatalism, can alter the performance of an educational team when there is sufficient time that the team is operating for the effects to be noticed. For educational team work that lasts for several weeks, or longer, knowing the combined team Present Fatalist factor score can help to predict the teams' performance and for a team that works together for a longer period the Future factor score as well as the Present Fatalistic combined score should also be known in order to

maximise the performance. In short-duration tasks however the time perspective score is less likely to be a factor that will change the performance of the team. The ideal team combination in a long duration team is to have a high score and homogeneity in the Future factor and a low mean score in the Present Fatalist factor. The person with the minimum score in the team in the Future factor should score relatively high and the person with the maximum Present Fatalist should score low.

It also has shown that those people who score high in the Future and the Present Fatalist factors approach team work somewhat differently than those who score low in these factors. The main differences revolve around procrastinatory behaviours and the social support received by the team members.

This research has practical implications on the importance of the personality trait of the Zimbardo time perspective factors, in particular the Future factor and the Present fatalism factor, which have the potential to improve performance in higher educational teamwork. It should be a consideration when educators are planning team projects that the students are taught to understand and appreciate other team members' time perspective needs.

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APPENDICES

Appendix A

ZIMBARDO TIME PERSPECTIVE INVENTORY

Read each item and, as honestly as you can, answer the question: "How characteristic or true is this of you."

Check the appropriate box using the scale 1=very untrue, 2 = untrue, 3= neutral, 4= true, 5 = very true. Please answer ALL the questions on both sides of the sheet.

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

24. I take each day as it is rather than try to plan it out					
25. The past has too many unpleasant memories that I prefer not to think about					
26. It is important to put excitement in my life					
27. I've made mistakes in the past that I wish I could undo					
28. I feel that it's more important to enjoy what you're doing than to get work done on time					
29. I get nostalgic about my childhood					
30. Before making a decision, I weigh the costs against the benefits					
31. Taking risks keeps my life from becoming boring					
32. It is more important for me to enjoy life's journey than to focus only on the destination					
	1	2	3	4	5
33. Things rarely work out as I expected					
34. It's hard for me to forget unpleasant images of my youth					
35. It takes joy out of the process and flow of my activities, if I have to think about goals, outcomes, and products					
36. Even when I am enjoying the present, I am drawn back to comparisons with similar past experiences					
37. You can't really plan for the future because things change so much					
38. My life path is controlled by forces I cannot influence					
39. It doesn't make sense to worry about the future, since there is nothing that I can do about it anyway					
40. I complete projects on time by making steady progress					
41. I find myself tuning out when family members talk about the way things used to be					
42. I take risks to put excitement in my life					
43. I make lists of things to do					
44. I often follow my heart more than my head					
45. I am able to resist temptations when I know that there is work to be done					
46. I find myself getting swept up in the excitement of the moment					
47. Life today is too complicated; I would prefer the simpler life of the past					
48. I prefer friends who are spontaneous rather than predictable					
49. I like family rituals and traditions that are regularly repeated					
50. I think about the bad things that have happened to me in the past					
51. I keep working at difficult, uninteresting tasks if they will help me get ahead					
52. Spending what I earn on pleasures today is better than saving for tomorrow's security					
53. Often luck pays off better than hard work					

54. I think about the good things that I have missed out on in my life					
55. I like my close relationships to be passionate					
56. There will always be time to catch up on my work					

Appendix B

The Zimbardo Time Perspective Inventory (ZTPI)

Psychometrics and Scoring Key

(5-Factor Solution; 36.0% of variance explained)

(N=606)

(CSM Fall 1996 (205), Stanford Preselection Winter 1996 (76) and Spring 1996 (224) Samples), Winter 1997 (99)

Scoring Instructions

Before scoring the ZTPI, 5 items must be reverse coded. For the items that are reverse coded (9, 24, 25, 41, & 56):

“1” becomes a “5”

“2” becomes a “4”

“3” becomes a “3”

“4” becomes a “2”

“5” becomes a “1”

After reverse coding the 5 items, add your scores for the items that comprise each factor. After adding your scores for each factor, divide the total score by the number of questions that comprise each factor. This results in an average score for each of the five factors. These are the formulas:

Past Negative

Add your scores on items 4, 5, 16, 22, 27, 33, 34, 36, 50, & 54. Then divide this number by 10.

Present Hedonistic

Add your scores on items 1, 8, 12, 17, 19, 23, 26, 28, 31, 32, 42, 44, 46, 48, & 55. Then divide this number by 15.

Future

Add your scores on items 6, 9 (reverse coded), 10, 13, 18, 21, 24 (reverse coded), 30, 40, 43, 45, 51, 56 (reverse coded). Then divide this number by 13.

Past Positive

Add your scores on items 2, 7, 11, 15, 20, 25 (reverse coded), 29, 41 (reverse coded), & 49. Then divide this number by 9.

Present Fatalistic

Add your scores on items 3, 14, 35, 37, 38, 39, 47, 52, & 53. Then divide this number by 9.

KMO Measure of Sampling Adequacy = .83

Factor #1: Past Negative (Eigen = 6.86; 12.3% of var; n = 10; α = .82)

Mean=2.98 SD=.72 Min=1.00 Max=5.00

<u>No.</u>	<u>Loading</u>	<u>Question</u>
50	.759	I think about the bad things that have happened to me in the past.
16	.694	Painful past experiences keep being replayed in my mind.
34	.674	It's hard for me to forget unpleasant images of my youth.
04	.657	I often think of what I should have done differently in my life.
54	.630	I think about the good things that I have missed out on in my life.
27	.547	I've made mistakes in the past that I wish that I could undo.
22	.490	I've taken my share of abuse and rejection in the past.
36	.472	Even when I am enjoying the present, I am drawn back to comparisons with similar past experiences.
33	.434	Things rarely work out as I expected.
05	.407	My decisions are mostly influenced by people and things around me.

Factor # 2: Present Hedonistic (Eigen = 5.01; 8.9% of var; n = 15; α = .79)

Mean=3.44 SD=.51 Min=2.00 Max=4.80

<u>No.</u>	<u>Loading</u>	<u>Question</u>
42	.707	I take risks to put excitement in my life.
31	.702	Taking risks keeps my life from becoming boring.
26	.558	It is important to put excitement in my life.
23	.515	I make decisions on the spur of the moment.
08	.506	I do things impulsively.
17	.501	I try to live my life as fully as possible, one day at a time.
48	.454	I prefer friends who are spontaneous rather than predictable.
32	.452	It is more important for me to enjoy life's journey than to focus only on the destination.
44	.448	I often follow my heart more than my head.

55	.445	I like my close relationships to be passionate.
46	.445	I find myself getting swept up in the excitement of the moment.
01	.424	I believe that getting together with one's friends to party is one of life's important pleasures.
19	.381	Ideally, I would live each day as if it were my last.
28	.360	I feel that it's more important to enjoy what you are doing than to get work done on time.
12	.323	When listening to my favorite music, I often lose all track of time.

Factor #3: Future (Eigen = 3.54; 6.3% var; n = 13; α = .77)

Mean=3.47 SD=.54 Min=1.62 Max=4.85

<u>No.</u>	<u>Loading</u>	<u>Question</u>
13	.628	Meeting tomorrow's deadline and doing other necessary work comes before tonight's play.
40	.614	I complete projects on time by making steady progress.
45	.611	I am able to resist temptations when I know that there is work to be done.
10	.556	When I want to achieve something, I set goals and consider specific means for reaching those goals.
51	.507	I keep working at difficult uninteresting work if it will help me get ahead.
18	.478	It upsets me to be late for appointments.
06	.463	I believe that a person's day should be planned ahead each morning.
21	.461	I meet my obligations to friends and authorities on time.
43	.455	I make lists of things to do.
30	.374	Before making a decision, I weight the costs against the benefits.

09	-.335	If things don't get done on time, I don't worry about it.
56	-.365	There will always be time to catch up on my work.
24	-.491	I take each day as it is rather than try to plan it out.

Factor #4: Past Positive (Eigen = 2.53; 4.5% var; n = 9; α = .80)

Mean=3.71 SD=.64 Min=1.56 Max=5.00

<u>No.</u>	<u>Loading</u>	<u>Question</u>
07	.677	It gives me pleasure to think about my past.
29	.645	I get nostalgic about my childhood.
20	.637	Happy memories of good times spring readily to mind.
11	.627	On balance, there is much more good to recall than bad in my past.
15	.627	I enjoy stories about how things used to be in the "good old times".
02	.620	Familiar childhood sights, sounds, and smells often bring back a flood of wonderful memories.
49	.470	I like family rituals and traditions that are regularly repeated.
41	-.448	I find myself tuning out when family members talk about the way things used to be.
25	-.522	The past has too many unpleasant memories that I prefer not to think about.

Factor #5: Present Fatalistic (Eigen = 2.21; 3.9% var; n = 9; α = .74)

Mean=2.37 SD=.60 Min=1.0 Max=4.67

<u>No.</u>	<u>Loading</u>	<u>Question</u>
38	.731	My life path is controlled by forces I cannot influence.
39	.682	It doesn't make sense to worry about the future, since there is nothing that I can do about it anyway.

14	.636	Since whatever will be will be, it doesn't really matter what I do.
37	.588	You can't really plan for the future because things change so much.
53	.455	Often luck pays off better than hard work.
03	.443	Fate determines much in my life.
35	.421	It takes joy out of the process and flow of my activities, if I have to think about goals, outcomes, and products.
47	.420	Life today is too complicated; I would prefer the simpler life of the past.
52	.338	Spending what I earn on pleasures today is better than saving for tomorrow's security.

Appendix C

Informed Consent Form

Participant Number:

Name (Please Print): _____

Age:

Gender (tick): **female** **male**

Nationality **Is English your first language?** **Yes/No**

Working Background..... **Design/ Business/ Other (please state)**

This study is looking at the composition of successful teams. The task will be to answer some questionnaires about your personality, learning style and time perspective.

Please read this consent agreement carefully before you decide to participate in the study

Participation in this study is completely voluntary and should cause you no harm either psychological or physical. You are free to decline to participate, withdraw at any time during the study for any reason or to refuse to answer a question without any penalty. Please note that if you do decide to withdraw this will have no impact in relation to your course. If you have any questions about the study please feel free to ask the researcher.

Confidentiality:

The information you give will be handled confidentially. Only the experimenter and her supervisors will have access to the information you provide for this study which will be kept on a password accessed computer.

Agreement to Participate:

You have read the above and understand all that has been explained about the experiment.

Name (print) -----

Signature _____

If you have any further questions about the study you have just taken part in, or would like a general explanation of your results, please do not hesitate to contact me at:

k0321518@kingston.ac.uk.

APPENDIX D

Informed Consent Form

Participant Number:

Name (Please Print): _____

Age:

Gender (tick): **female** **male**

Nationality **Is English your first language?** **Yes/No**

This study is looking at the composition of successful teams. The task will be to answer some questionnaires about your personality, learning style and time perspective which will be analysed alongside your coursework mark.

Please read this consent agreement carefully before you decide to participate in the study

Participation in this study is completely voluntary and should cause you no harm either psychological or physical. You are free to decline to participate, withdraw at any time during the study for any reason or to refuse to answer a question without any penalty. Please note that if you do decide to withdraw this will have no impact in relation to your course. If you have any questions about the study please feel free to ask the researcher.

Confidentiality:

The information you give will be handled confidentially. Only the experimenter and her supervisors will have access to the information you provide for this study which will be kept on a password accessed computer.

Agreement to Participate:

You have read the above and understand all that has been explained about the experiment.

Name (print) -----

Signature _____

If you have any further questions about the study you have just taken part in, or would like a general explanation of your results, please do not hesitate to contact me at: k0321518@kingston.ac.uk.

Appendix E

DEBRIEF FORM

Thank you for taking part in my PhD study. I am looking at various psychological profiles of team members to see if success in a team can be improved with a specific mix of people. I am looking at teams of various size, academic background (design, business etc) and psychological composition in terms of what learning style and what time perspective they utilise as well as their personality profile. If you have any questions please do not hesitate to ask.

I can be contacted by e-mail at K0321518@kingston.ac.uk

There are not expected to be any adverse effects as a result of taking part in this study but if you have suffered any ill effect as a result of taking part in this experiment please contact the university helpline on (0)20 8417 2172 or email them at healthandcounselling@kingston.ac.uk

SUPERVISOR – Professor P Terry

Appendix F

Information SheetTeam Task Study (short term)

This study is looking at what factors contribute to a successful team's performance. The study initially involves answering questionnaires about how you act with respect to time (e.g. 'I make decisions on the spur of the moment') and a personality questionnaire with questions such as 'I make friends easily'.

You will be working as a team with two other participants who have also volunteered for a slot at the same time as yourself. You will, between the three of you, carry out four tasks and the time taken to complete the tasks will be measured. The tasks only have to be completed once and can be carried out together or individually as the three of you, as a team, decide. All the tasks have to be completed correctly as judged by the researcher before the final time is noted.

It is expected that the tasks will take the team approximately $\frac{3}{4}$ hour to complete and you will receive 45 SONA points for taking part.

The tasks:

Task 1: Separating three different coloured pasta shapes from one box into three separate boxes (1 for each colour).

Task 2: Proof reading an A4 page short essay counting all the times the word 'and' appears. You will be provided with a coloured pen in order to help with this task. (NB If the letters 'and' appears inside another word eg sandcastle this will not be counted)

Task 3: Tower of Hanoi task: The object of the **game** is to move all the disks from tower 1 to tower 3. The only rules are that you can only move one disc at a time and you cannot place a larger disk onto a smaller disk.

Task 4: Seesaw logic task. You will be shown 10 sheets with seesaws depicted on them with various shaped items displayed at either end of the seesaw. Your task is to decide which shape is the heaviest of the shapes shown.

Please read this information sheet carefully before you decide to participate in the study

Participation in this study is completely voluntary and should cause you no harm either psychological or physical. You are free to decline to participate, withdraw at any time during the study for any reason or to refuse to answer a question without any penalty. Please note that if you do decide to withdraw this will have no impact in relation to your course. If you have any questions about the study please feel free to ask the researcher. You can withdraw your data at any time up to March 2016 by contacting the researcher at the email address below and referring to your personal participant number.

Confidentiality:

The information you give will be handled confidentially. Only the experimenter and her supervisors will have access to the information you provide for this study which will be kept on a password accessed computer. Any reference to participants will be by participant number rather than by name

If you have any further questions about the study you will be taking part in, or would like a general explanation of your results, please do not hesitate to contact me at:

jane.trueman@kingston.ac.uk

Supervisors: Professor Phil Terry (P.Terry@kingston.ac.uk) / Dr Fatima Felisberti (F.Felisberti@kingston.ac.uk)

Faculty of Arts and Social Sciences Kingston University Penrhyn Rd, Kingston upon Thames, Surrey KT1 2EE
020 8417 9000

Appendix G

WRITTEN CONSENT TO PARTICIPATE IN A RESEARCH STUDY

Statement by participant

- I confirm that I have read and understood the information sheet/letter of invitation for this study. I have been informed of the purpose, risks, and benefits of taking part.

Team Task Study (Short term)

- I understand what my involvement will entail and any questions have been answered to my satisfaction.
- I understand that my participation is entirely voluntary, and that I can withdraw at any time without prejudice.
- I understand that all information obtained will be confidential.
- I agree that research data gathered for the study may be published provided that I cannot be identified as a subject.
- Contact information has been provided should I (a) wish to seek further information from the investigator at any time for purposes of clarification (b) wish to make a complaint.

Participant's Signature-----

Date -----

Statement by investigator

- I have explained this project and the implications of participation in it to this participant without bias and I believe that the consent is informed and that he/she understands the implications of participation.

Name of investigator -----

Signature of investigator -----

Date -----

Appendix H

Demographics sheet

Participant Number:

Age:

Gender (tick): Female Male

Level of study (tick):Undergraduate Postgraduate

Full time Part time

English as a first language (tick): Yes No

Did you know the other people in your team before taking part in this study? Please write how well on a scale of 1-3 where 1= did not know them beforehand, 2=knew them a little bit and 3 = knew them very well

Participant 1.....

Participant 2

Appendix I

Debrief sheet

Thank you for taking part in this study. I am looking to see if behaviour according to time affects how people work together in teams. I have seen in previous studies that certain time behaviour factors (using the Zimbardo time perspective questionnaire) correlate with success in team work over long periods of time and this study will test if there are similar correlations in short term team tasks.

There are not expected to be any adverse effects as a result of taking part in this study but if you have suffered any ill effect as a result of taking part in this experiment please contact the university helpline on (0)20 8417 2172 or email them at healthandcounselling@kingston.ac.uk

If you have any further questions about the study I can be contacted by e-mail at K0321518@kingston.ac.uk or at the address below

SUPERVISORS –Professor Phil Terry (P.Terry@kingston.ac.uk) / Dr Fatima Felisberti (F.Felisberti@kingston.ac.uk)

Faculty of Arts and Social Sciences Kingston University Penrhyn Rd, Kingston upon Thames, Surrey KT1 2EE

020 8417 9000

Appendix J



Published in The Stage, 24.07.2014

“There’s only one Katie Mitchell,” the packed stalls sing. “One Katie Mitchell. ONE KA-TIE MIIIIIT-CHELL.” One man stands on his seat and whips his ‘Attempts on Your Life’ T-shirt around above his head. Another pulls up his sleeve to display a tattoo of Hattie Morahan in Iphigenia at Aulis. A teenage girl weeps into her copy of *The Directors’ Craft*.

Or...not. The World Cup got me thinking: What if theatre had fans like football has fans? What if people cared so much about their local theatre and their favourite artists that they shaped their entire identities accordingly? Imagine, cars driving around Manchester with Royal Exchange flags flying from their windows or school kids in playgrounds swapping stickers of their favourite RSC actors. “Go on, I’ll trade you Pippa Nixon for Sam Troughton and that Erica Whyman shiny.” Think of teenagers’ bedrooms dotted with posters of their favourite commercial producers. (Hey, Ed, there’s an idea. Free next week: your very own Howard Panter pull-out...)

There’s a lot of talk, at the moment, about audiences as advocates. It’s at the heart of the What’s Next? movement and the My Theatre Matters! campaign being backed by The Stage. The idea being that audiences shouting about their local theatre will make the best possible case for funding and investment. But people will only shout once they’re seeing the shows on a regular basis. Advocacy depends on investment. Theatres need to forge fans.

So why is our industry so sniffy about fandom? About the Whovians, Sherlockians and Potterfiles squished together at Stage Door for a signature and a selfie with their idols? About the so-called Superfans and Repeat Attenders, clad head-to-toe in merchandize, and returning over and over to watch the same show? About the “overexcited Hobbit

fans ruining Martin Freeman's Richard III" with – oh the shame, the horror – entrance applause and other breaches of theatre etiquette?

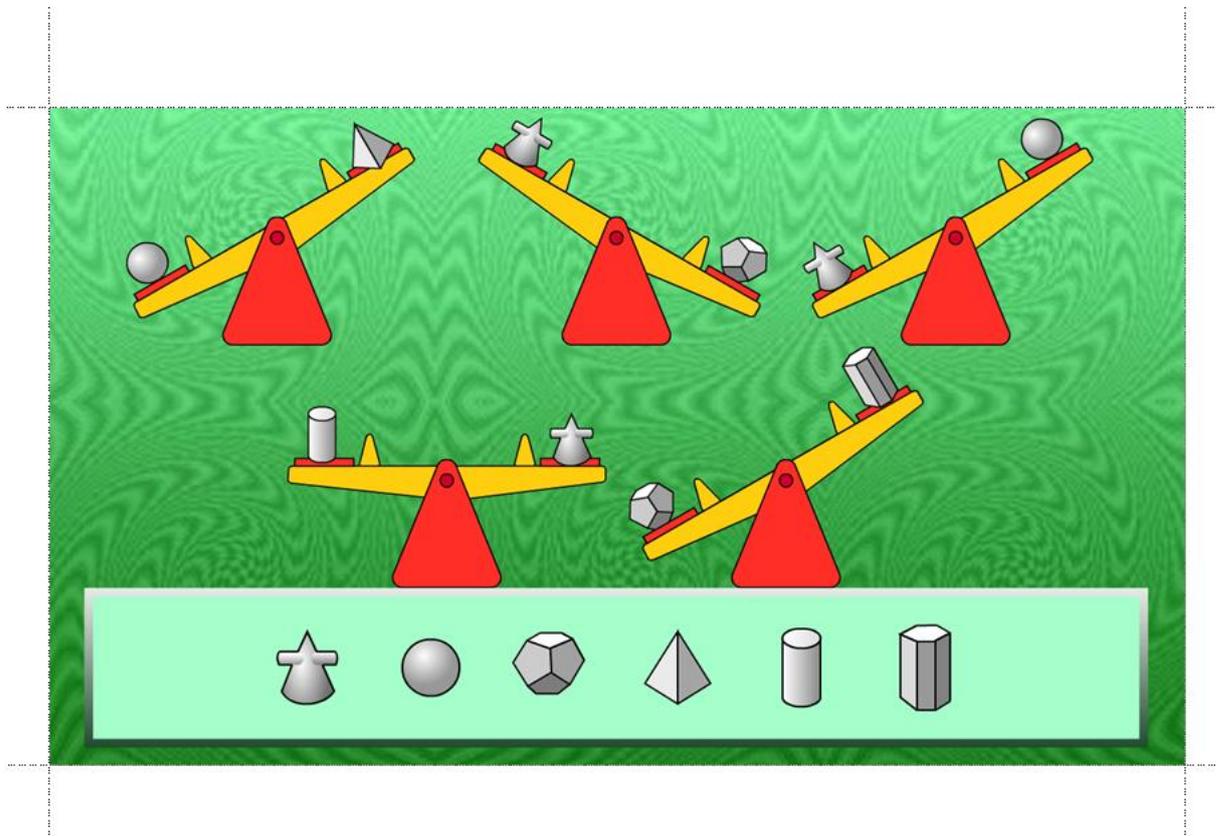
It's time we dropped the snobbery. Fandom needs fostering – across all sectors of the industry – and that means letting people feel part of something, first giving them access, then giving them ownership.

We need to make audiences into a tribe: individually devoted and collectively identifiable. We need Temporary Theatre T-Shirts and Iron-On show logos. There should be season tickets and loyalty cards. There should be fanzines and a greater mass media publicity drives. (My god, imagine if theatre were screened in pubs every weekend.) Playwrights and directors should do meet and greets alongside their casts. No, better still: Let's have our own conventions.

All this is about acknowledging audiences. When did you last hear an Olivier Award winner thank the theatregoing public? Or see a curtain call that spilled into the stalls just as Wimbledon champions clamber through Centre Court's crowds? I want Cyranos that throw their fake noses into last night ovations and Hamlets giving away their Yorriks to budding Shakespeareans. It's not enough to tempt people in. Theatre needs to give something back.

If theatre wants fans – and it really, really should – it needs to look at football and film. It needs to matter so much to people that they build not just their lives, but also their identities around it – and building that devotion takes devotion of its own.

Appendix K



Appendix L

1.	
2.	
3.	
4.	
5.	
6.	
7.	
8.	
9.	
10.	

ANSWER SHEET FOR SEESAW TASK. Please circle heaviest object

Appendix M

PHYSICAL SORTING TASK INSTRUCTIONS

There are different shapes of pasta mixed up in this container. Please separate each pasta shape into separate piles on the tables

When completed please inform the researcher

PROOF READING TASK INSTRUCTIONS

Please read through this essay and count all the word “AND” that has been written. You can mark the sheet in any way that helps you to complete this task

When you have got a total number of the word “and” please tell the researcher who will inform you if the answer is correct and this part of the task is completed

N.B. Any word with “and” as part of the word eg sandcastle or band is not to be counted

SEE SAW TASK

There are 10 pictures of seesaws. Your task is to select the heaviest object in each picture.

Please circle on the answer sheet which object is the heaviest and when completed ask the researcher to check all the answers are correct.

TOWER OF HANOI TASK

The object of this task is to move all the disks onto a different pole in the same order as the original with the largest disc at the bottom of the pile to the smallest at the top.

HOWEVER

You can only move one disk at a time and you must follow size order -- a bigger disk cannot go on a smaller disk.

You can start from the original position as often as is necessary



Appendix N

Consent Form

Participant Number:

Name (Please Print):

Age:

Email address (and mobile number if you prefer to be contacted by that method) that will be given to your two team mates in order to contact each other (please write clearly)

.....

Gender (tick): **Female** **Male**

Level of study (tick):**Undergraduate** **Postgraduate**

Full time **Part time**

English as a first language (tick): **Yes** **No**

Please read this information sheet carefully before you decide to participate in the study

Agreement to Participate:

I have read the information sheet and understand all that has been explained about the experiment.

Name (print) -----

Signature _____

Appendix O

Informed Consent Form

This study is looking at what contributes to successful teams' performance. The task initially involves answering 3 different questionnaires about how you act with respect to time (e.g. 'I make decisions on the spur of the moment') and a personality questionnaire with questions such as 'I make friends easily'. A couple of weeks later you will be allocated to a team of three people and jointly you will have to gain as many SONA points as you can up until April 2015. The only valid SONA points are from those studies that all three members of your designated team take part in. Every two weeks you will receive an email from me which will require a response from at least one member of your team with the number of SONA points you have received as a team that month. At the end of the study there will be a short questionnaire about your experience within the team.

The team that scores the highest number of SONA points over the duration of the study will receive a prize of £150 in Amazon vouchers.

All participants will receive 10 SONA points for completing the questionnaires and 10 SONA points for each month's SONA result emails and a further 20 SONA points for the final questionnaire... a possible 100 SONA points in total

Please read this information sheet carefully before you decide to participate in the study

Participation in this study is completely voluntary and should cause you no harm either psychological or physical. You are free to decline to participate, withdraw at any time during the study for any reason or to refuse to answer a question without any penalty. Please note that if you do decide to withdraw this will have no impact in relation to your course. If you have any questions about the study please feel free to ask the researcher. You can withdraw your data at any time up to May 2015 by contacting the researcher at the email address below and referring to your personal participant number.

Confidentiality:

The information you give will be handled confidentially. Only the experimenter and her supervisors will have access to the information you provide for this study which will be kept on a password accessed computer. Any reference to participants will be by participant number rather than by name.

If you have any further questions about the study you have just taken part in, or would like a general explanation of your results, please do not hesitate to contact me at:

jane.trueaman@kingston.ac.uk

Supervisors: Professor Phil Terry / Dr Fatima Felisberti

Appendix P

DEBRIEF FORM

Thank you for taking part in my PhD research. I have been studying how a person's time perspective can alter the success of team work. You were placed in teams with other people with similar time perspectives as your own to see which teams communicated together to collect SONA points from the same studies.

If you have any further questions about the study I can be contacted by e-mail at K0321518@kingston.ac.uk

There are not expected to be any adverse effects as a result of taking part in this study but if you have suffered any ill effect as a result of taking part in this experiment please contact the university helpline on (0)20 8417 2172 or email them at healthandcounselling@kingston.ac.uk

SUPERVISORS – Professor P Terry and Dr Fatima Felisberti

Appendix Q

Team Study..... Jane Trueman (K0321518@kingston.ac.uk)

November

The teams have now been off and running for one month and I would like to know if any of you have managed to carry out some SONA studies in the month of November. The email addresses at the head of this email will be those of your team members.

All three of you need to have taken part in the same studies for it to count towards my study. You will, of course, get the SONA points for the studies you have taken part in given by the person running that study, but to get the extra SONA points for my study I just need the name of the study and the number of SONA points received for it. I would be grateful if you could email me to let me know even if you have not managed to collect any SONA points to date.

I do recognise that at the moment there are not that many studies on SONA looking for participants but in December and January more and more will come on line as the third year dissertation students start looking for participants so please keep checking and communicating with your team members.

I will be emailing to you again at the end of December, twice in January, twice in February, and twice in March to collect the SONA points details. Each time you reply (even if you have collected no SONA points as a team) I will be giving 5 SONA points (a possible 60 further points)

Do remember that the team with the highest number of SONA points collected by April when the study ends will receive a voucher for £150 to share between the three of you.

Appendix R

SONA points available

Jane Trueman K0321518@kingston.ac.uk

And to get them all you need do is send me an email.... no meetings to turn up for, no psychological tasks to complete, no timings to keep an eye on, no psych labs to find.

Please can you email me with your team's number and the SONA points that you have managed to collect in November even if that number is 0. As soon as I have your details I will give you a further 5 SONA points. There will be another 5 points available at the end of Dec, 10 available in Jan, 10 in February, and 10 in March.

The team with the highest number of SONA points by April 2015 can win £150 of vouchers

Appendix S

I have not heard from any members of your team so far after the previous two month's emails. Please can you let me know if your team have managed to have any contact with each other or if there are problems that I can try and resolve. I cannot issue you with the SONA points for this study unless I receive an email from you.

The following is the email sent to all teams in January

SONA points available

Jane Trueman K0321518@kingston.ac.uk

And to get them all you need do is send me an email.... no meetings to turn up for, no psychological tasks to complete, no timings to keep an eye on, no psych labs to find.

Please can you email me with your team's number and the SONA points that you have all managed to collect in January even if that number is 0. As soon as I have your details I will give you a further 5 SONA points.

If any one of your team is not answering your emails or not getting involved in spite of you trying to contact them please let me know ... In the meantime please let me know if the remaining two members of the team are managing to collect SONA points from the same studies

The team with the highest number of SONA points by April 2015 can win £150 of vouchers

Appendix T

Semi Structured Interview schedule..... Experimental study

1. You took part in my study of teams. Can you tell me a bit about your experience in that particular study.
 - Did you know any of your team before the study started?
 - Did you have any contact at all with other members of your team?
 - Did you contact them or did they contact you and if so when in the five month process did that happen.
 - Did you feel like you were a part of a team?
 - How closely did the three of you work as a team?
 - How did the three of you decide which SONA studies to take part in?
 - Did one of the members of the team take a lead role?
 - How did you communicate with each other (face-to- face, remotely by email)?
 - How did the incentive of £150 prize work for you?
 - When you had achieved the required SONA points for your course requirements how did you feel with continued approaches from me about this study?
 - Did you feel at all invested in the long term study as a team member?
 - Once you had filled in the questionnaires in October or November how did the constant requests for SONA points information affect you?

Appendix U

PACED

- Q1. I do most of the work on tasks in a relatively short time before the deadline
- Q2. I work steadily on tasks, spreading my work out evenly over time (e.g., 3 hours per week until the deadline).
- Q3. The effort I put into projects is high at the start, low halfway through, and high again at the end.
- Q4. I do not get much done on projects until the due date is close.
- Q5. I invest most of my effort toward the beginning and end of projects.
- Q6. I pace myself to work on projects a little bit everyday or every week instead of doing several hours of work all at once.
- Q7. I generally do not work until there is time pressure from an approaching deadline.
- Q8. I work in a slow, but steady, manner to complete tasks.
- Q9. I put in more effort at the beginning of tasks as well as right before the deadline, but am less active during the middle of the work cycle.

Dear Jane,

Thank you for your interest in the pacing style construct and the PACED scale.

I realize that we did not include instructions in our development and validation paper.

The calculations are really straightforward though:

Deadline action pacing style: mean (Q1, Q4, Q7).

Steady action pacing style: mean (Q2, Q6, Q8).

U-shaped action pacing style: mean (Q3, Q5, Q9).

See the items below.

Kind regards,

Josette Gevers

Appendix V

Polychronic Attitude Index (Kaufman-Scarborough, & Lindquist, 1999).

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
I do not like to juggle several activities at the same time					
People should not try to do many things at once					
When I sit down at my desk I work on one project at a time					
I am comfortable doing several things at the same time					

PAI Scoring: strongly disagree=5, disagree=4, neutral=3, agree=2, strongly agree=1

The last statement is reverse scored. Add up points and divide by 4. The lower the score the more monochronic the orientation, the higher the score the more polychronic the orientation

Appendix W

SEMI- STRUCTURED INTERVIEW SCHEDULE

2. SETTING THE SCENE

Have you been a member of many teams? Can you describe what sorts of teams you have been involved in?

Can you describe to me what the teams were there to do? Were they a University team or a school team or a work team? How many people were in the teams? How well did you know the team members before you joined the team? Did you pick the team members or were they thrust upon you?

3. TEAM BEHAVIOUR

Do you enjoy working as a member of a team? What do you like/dislike about being part of a team?

Do you behave differently when you are part of a team? If yes in what way?

Do you find being part of a team alters your confidence levels? In what way?

Do you like to be a leader within a team? If so please try and explain why. Do you like to be lead in a team? If so please explain why? Is this the same for all types of team work? If not how does this vary? If yes how do you feel when you are a leader/ not a leader

4. TIME PERSPECTIVE

When you are given deadlines how do you prefer to work?

When given a deadline when do you like to have finished the task?

How stressful do you find it when others prevent you from working this way?

If there is someone in the team that likes to work in a different manner how do you cope with it?

Do you like to leave things to be done by others in a team? Do you like to share the tasks equally? Do you prefer to do the tasks yourself?

Why is that?

Has your approach to team work altered since you were younger? If so in what way?

5. You scored High/low (either /or depending on score) in Future/Present Fatalism factors on a questionnaire you did before in my previous study (simple explanation of what these traits mean: see below):

How do you feel when you are working with like minded people in a team?

How do you feel when you are working with opposing minded people in a team?

6. You took part in my study of teams. Can you tell me a bit about your experience in that particular study.

Did you know any of your team before the study started?

Did you have any contact at all with other members of your team?

Did you contact them or did they contact you and if so when in the five month process did that happen.

Did you feel like you were a part of a team?

How closely did the three of you work as a team?

How did the three of you decide which SONA studies to take part in?

Did one of the members of the team take a lead role?

How did you communicate with each other (face-to-face, remotely by email)?

How did the incentive of £150 prize work for you?

When you had achieved the required SONA points for your course requirements how did you feel with continued approaches from me about this study?

Did you feel at all invested in the long term study as a team member?

Once you had filled in the questionnaires in October or November how did the constant requests for SONA points information affect you?

7. WRAP UP

Is there anything else you would like to talk about being part of a team that I haven't asked you? Have you any questions I can answer for you?

8. Thank you for your time

SIMPLE EXPLANATION

According to Zimbardo & Boyd (1999) Individuals with a present time perspective focus on present pleasure and believe that future planning is unnecessary and futile. Those with a future perspective have a belief that a person's behaviour in the present increases the probability of attaining a desired goal in the future.

Some Generic Probes

?? "You mentioned _____, tell me more about that."

?? "You mentioned _____, what was that like for you?"

?? "You talked about _____, describe that experience in as much detail as possible."

??“What else happened?”

??“What were your feelings about that?”

??“It sounds as though you had a pretty strong reaction.”

??“It sounds like you’re saying”

Extension questions to be used where appropriate

1. Can you tell me a bit more about the last time you experienced that or felt that way?
2. Can you give me a specific example of that?
3. Do you personally feel that way?
4. Is that something you have experienced?
5. Can you tell me more?
6. Can you expand on your answer?
7. Can you explain your answer?

Appendix X

CONSENT FORM: Team Success and Time Perspective. A qualitative analysis

Statement by participant

- I confirm that I have read and understood the information sheet/letter of invitation for this study. I have been informed of the purpose, risks, and benefits of taking part.

(Title of Study)----- Team success and time perspective. A qualitative analysis

- I understand what my involvement will entail and any questions have been answered to my satisfaction.
- I understand that my participation is entirely voluntary, and that I can withdraw at any time without prejudice.
- I understand that all information obtained will be confidential.
- I agree that research data gathered for the study may be published provided that I cannot be identified as a subject.
- Contact information has been provided should I (a) wish to seek further information from the investigator at any time for purposes of clarification (b) wish to make a complaint.

Participant's Signature-----

Date -----

Statement by investigator

- I have explained this project and the implications of participation in it to this participant without bias and I believe that the consent is informed and that he/she understands the implications of participation.

Name of investigator -----Jane Trueman-----

Signature of investigator -----

Date -----

Appendix Y

Information sheet

Title of study: Time perspective and Team work

You are invited to participate in a research study about how university students feel about team work with particular regard to how other team members behave with respect to time. This study aims to see if working with people with similar time perspectives alters team success.

By agreeing to participate in this study you are agreeing to be interviewed and that interview will be tape recorded and analysed by the researcher.

Risks and benefits

This study does not involve any type of physical risk; you will be asked questions about your previous experiences of being part of a team, about the interactions between team members and your views on how people behave with respect to time and how that may have influenced or affected your own team experiences.

The information used will be part of a PhD study into Time perspective and team success.

Confidentiality

To protect your privacy all the information you provide (tapes, transcripts) will be identified only by a participant number. The tapes and transcripts will be stored in the researcher's home and the data will be stored on a password accessed computer and will only be available to the researcher and her supervisors. The information obtained in this study may be published in scientific journals or presented at conference but your identity will not be revealed in any way apart from generalised descriptions (eg female post graduate university student aged 25).

The decision to participate in this research is entirely up to you. You may refuse to take part in the study or you can refuse to answer any question posed to you with no impact on your position as a student at Kingston University.

You have the right to ask questions about this study and to have those questions answered by the researcher at any time before, during or after the research. You can withdraw your participation in this study at any time prior to October 2015 by contacting the researcher. Details of how to contact the researcher will be given to you in a debrief document after the interview which will include the researcher's email address and your own unique participant number.

Appendix Z

Debrief form

The study you have just participated in is looking at how people with differing time perspectives feel about working in teams.

It is specifically looking for any attitudinal differences between those people who scored high on the future and present fatalistic factors of time perspective and those who scored lower on these factors (Zimbardo & Boyd, 1999). Those who score higher on the future scale tend to take a longer term view and will take a short term loss in order to gain something in the long term. Those who score higher on the present fatalistic scale believe that things will happen regardless of the effort that is expended and behave accordingly. It is hypothesized that people working together in teams with different scores on these scales may have different team outcomes to those whose time perspectives are more similar.

Previously you took part in an earlier study and have already answered questions to establish your score in these factors. The research will look for commonalities in attitudes between high and low scorers about working in teams generally.

To contact the researcher at any time email Jane Trueman on k0321518@kingston.ac.uk or write to Kingston University (FASS) Penrhyn Road, Surrey, KT1 2EE or call on mobile number 07713 597982

Your unique participant number is

Appendix AA

Example of transcript

Consent form and information sheet signing

Interviewer Thank you very much for doing this. I am really grateful for your help

Participant 3 No problem at all. No problem

Interviewer Er before I start let me just run through. just remind you that if you want a break at any time if you don't want to answer any questions or if you want to stop at any time you are in control. Just tell me and I will follow that through

Participant 3 Mmhmm

Interviewer What I am going to is just to set the scene a bit about team work in general, then we are going to talk about team behaviour then I am going to touch on time perspective which is the other part of my PhD and then right at the end what I'd like to do is have a quick word with you about the study that you took part in for me with the SONA points because I am not sure if I am going to run that again next year but it will need tweaking because it didn't work terribly well

Participant 3 Ok

Interviewer So I am trying to get feedback so there are a few questions at the end on that

Participant 3 That's fine

Interviewer Lovely. So if I just start with setting the scene. Can you tell me about any teams you have belonged to or a team you belong to?

Participant 3 You mean like at work

Interviewer Work, home, play whatever just...

Participant 3 So what do you want to know about it?

Interviewer What sort of a team. What does it do?

Participant 3 Well when I worked in my last job I was working with a sort of multi disciplinary team at a place where we took care of people with dementia. So it was people I felt we were the sort of the ground staff really part of where we took care of all the daily activities and they we sort of.

Appendix BB

XXXXXXXXXXXX	Communication
XXXXXXXXXXXX	Rewards/benefits
XXXXXXXXXXXX	Roles decided by
XXXXXXXXXXXX	Social loafing
XXXXXXXXXXXX	Leadership roles
XXXXXXXXXXXX	Team hierarchy/layers in teams
XXXXXXXXXXXX	Leadership
XXXXXXXXXXXX	Conformity to group
XXXXXXXXXXXX	Separation from real life
XXXXXXXXXXXX	+/- emotions
XXXXXXXXXXXX	Strong opinions from team mates/bullying
XXXXXXXXXXXX	Mini deadlines
XXXXXXXXXXXX	Control
XXXXXXXXXXXX	Social aspect
bold	Trust in group members
<i>italics</i>	Team experiences good/bad
CAPITALS	Preference to lead/be led
XXXXXX	Confirmation of questionnaires/validity

126:30	Choir group
126:32	Not immediately sure what constitutes a team
126:38	13 people
126:39	Diverse team
126:40	Team has become very close quickly
126:44-45	Passion speeds up social grouping
126:49-50	Random joining
126:52	Did not know anyone
126:68-69	Team picked from friends
126:72-73	Dominant personalities so kept on track
126:75	Work split evenly
126:76	Mini deadlines set
126:77-78	Responsibilities were individual but group oversaw process
126:82-83	Roles by expertise
126:84-88	Roles decided on perceived expertise
126:94	Texting
126:94-95	Face to face
126:103	Whatsapp
126:108-109	Recognise nagging gets things done. Reward
126:116-118	Compartmentalised team work so had no effect on friendships
126:123	Compartmentalised team from friendship
126:124-125	Separate class team with other parts of life
126:138	Camaraderie
126:144-145	Team hierarchy negative
126:147-149	Dominant team members seen as negative
126:155	Non dominant
126:40	Team has become very close quickly
126:44-45	Passion speeds up social grouping
126:68-69	Team picked from friends
3:93	Social informal chatting
3:99	Team formed from friendship
3:123	Social
3:127	Friendship remained
3:138-139	Social aspect
3:140	Learning from others
3:142-143	Can use team mates to get help
3:176	Social element to team can be good or bad dependent on members
124:74-76	One close friend within the team
124:115	Not convinced it was fun
124:121-122	Became increasingly hard as deadline approached
124:124-127	Friend picked friend of friend
124:132-136	Team did not engender deep friendships
123:53	Group chosen by friendship
123:85-87	No friendship after project finished
123:90-91	Nothing in common
6:32	Knew one person beforehand

6:78	Friendship
6:98-100	No change in relationships as result of team membership
19:102-103	Chose to work with people she knew, who sat close by
19:148	Not friends beforehand nor afterwards
19:148-150	No change in friendship
19:150	Work team not personal
19:154	Prefer team to share physical presence
19:296	Empathy to others needs
7:66	Team picked mainly friendship
7:103	Still friends after process
7:106-107	Improved relationship with 4 th person although only a bit
14:35-36	Likes social aspect of team but tends to avoid getting too invested in the team
14:48-50	Social aspect important
14:50-52	Gentle to begin with. Welcoming
14:75-77	Superficial friendships-few strong friendships
14:79-80	Forced friendship
14:81	Not close
14:102	Felt connected to both sub groups
14:104	Connected to both groups
14:1	Lets friends off but other takes blame for anger when she was actually the only one to have come to meeting!

APPENDIX CC

DESCRIPTIVE ANALYSIS RATER INSTRUCTION SHEET

1. Type of team mentioned when asked by interviewer

Work team: this category includes any mention of teams in paid or voluntary employment

Family/Friends: this category includes any mention of teams made up from immediate family relations and friends.

Sport: this category includes any mention of sporting teams as well as groups from hobbies such as choir groups and recreational activities such as chess teams

Educational: this category will include any mention of teams from school college or university such as academic group work

Others: this includes any mention of a specific team that does not fit in any of the above categories

2. Do you like to be in a team?

Yes

No

Varies: this will include comments such as sometimes or depending on something

3. What happens to your confidence level in teams?

Increases: Includes any mention where confidence has been boosted as a result of being part of a team

Decreases: Includes any mention where confidence has been lessened as a result of being part of a team

Varies: includes mention that sometimes confidence is boosted or lessened depending on circumstances

Other: any comment about confidence that does not fit in the above categories

4. What type of social support is mentioned?

Camaraderie: any mention of friendship when talking about teams

Knowledge: Any mention that knowledge can be shared between team members

Joint achievement: Any mention that the team can achieve things together which could not be achieved alone

Feeling valued: any mention that being part of a team makes the participant feel valued

Secure: any mention that being part of a team makes the participant feel more secure

Motivation increases:

Motivation decreases

Sharing work load: any mention that by being part of a team the workload is lessened by being shared between team members

Other: any comments on social support that do not fit in the categories above

5. Communication methods

Face to face: this includes any mention of meetings, in class or physically in the same space

Social media: any mention of any social media contact

Other: any mentions of communication methods that do not fall into the above categories

6. Communication difficulties mentioned

Yes: the participant mentioned the team had problems with communication

No: the participant mentioned the team had no problems with communication

Not mentioned:

7. Social loafing/Procrastination

Refer to self: the participant mentioned that they had put things off or relied on others to do the work

Refer to others: the participant mentioned that their team mates had put things off or relied on others to do the work

8. Team leading

Yes: participant likes to lead a team

No: participant does not like to lead a team

If 100% engaged: participant mentions that they only like to lead if they are fully engaged with the team and the team's goals

If sharing the role: participants mentioned they like to lead if sharing with others

Other: participants mentioned something else about whether they like to lead a team

9. Imposter syndrome

Yes: participant mentioned that they felt like they should not be doing the role required as they were not good enough/ sufficiently qualified to do it

No:

APPENDIX DD

DESCRIPTIVE ANALYSIS TEMPLATE FOR RELIABILITY What Types of team were mentioned by the participant when asked by interviewer

Work team: employed by others paid/voluntary	3(24) 5(23) 6(25) 12(28)(50) 19(36)(76) 123(15) 124(26)
Family/ friends	3(54) 19(29)
Sport/ recreational: games, sports, hobbies	6(64) 7(47) 11(216) 13(36)(57)(63) 14(27)(61) 123(13) 126(30)
Educational : school or uni	3(74) 7(30) 11(19)(47) 12(76) 123(17) 124(21)(50)
Others	

Do you like to be in a team

Yes	6(95)(105) 7(95)(112)(120) 12(179)(209) 14(252) 123(95) 124(150) 126(135)
No	11(128) 13(165)(307) 19(123)
Sometimes depending on circumstances	3(130) 5(75) 6(105) 11(128) 19(148)
Other	11(110)

What happens to your confidence level in teams

Increases	6(136) 7(166)(220) 12(280) 14(293) 124(78) 126(159)
Decreases	
Varies depending on circumstances	3(181) 19(207) 123(143) 12(281-286)
Other	11(171) 124(190)

What type of social support is mentioned

Camaraderie/friendship	3(127)(138) 6(115)(78) 7(40) 11(88) 12(222) 13(76)(182) 14(35)(75)(260) 126(140)
Knowledge (sharing)	3(140) 6(108) 7(113)(346) 11(140) 19(164)

	123(106)(206) 126(190)
Joint achievement (enjoyment)	5(106) 11(135) 124(154)
Feeling valued by others	6(170) 12(321) 126(181)
Feeling secure as part of team	12(227)(314) 13(183)(255) 14(296)
Motivation increases as part of team	12(268) 13(241) 14(68) 123(97)
Motivation decreases as part of team	12(108)
Sharing work load to lessen load on individual	3(108)(118)(143) 6(242) 12(421) 19(302)
Other	7(98) 11(135) 14(254)

Communication methods mentioned

Face-to-face: meetings, inclass, physically in same space	3(114) 11(101) 12(160) 13(152) 14(117) 123(56) 124(108) 126(97)
Social media: eg whatsapp, facebook, email	3(92) 7(73) 11(102) 12(155) 13(163) 123(59) 124(110) 126(94)
Other	126(94)

Communication difficulties mentioned

Yes	3(218) 5(89) 7(142)(187) 12(55)(123) 13(95) 14(105)
No	
Not mentioned	

Social loafing/procrastination mentioned

Refer to self	3(133) 7(200)(215)(267) 11(268)(295) 12(274)(367) 13(102) 14(341) 124(261) 126(227)(237)(276)
Refer to others	3(167) 12(140)(191)(244) 13(155) 14(119)(456) 19(178) 124(89)(179)(141)(162)
Not mentioned	

Do you like to lead a team

Yes	7(174) 12(246)(297) 13(177)(270) 14(320) 123(156) 124(143)
No	3(189) 5(161)(173)
If 100% engaged	5(162) 6(160) 11(183)
If sharing the role	12(299)
Other	7(176) 19(219) 124(201) 126(165)

Imposter syndrome mentioned

Yes	3(171)(195)
No	